TIERED ENVIRONMENTAL IMPACT REPORT

RIVER RANCH FARMS, LLC

HIGH ROLLER DAIRY DIGESTER PROJECT

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CHAPTER 1 - INTRODUCTION

1.1 - Proposed Action

The primary project will include the addition of a covered, lined, anaerobic lagoon digester (digester) adjacent to the western boundary of the dairy. The digester is 300 feet x 264 feet x 32 feet and will hold approximately 10.5 million gallons. Once the digester and biogas infrastructure are operational, the site will generate approximately 20,749 million BTU/year.

In addition, new open lot corrals, free stall barns and hay barns will be constructed to provide greater health and safety to the herd and dairy staff. The digester is located approximately 1,194 feet from the nearest residence, as shown on the site plan.

The proposed actions for which this Tiered Environmental Impact Report (TEIR) is being prepared include:

- Approval by Kings County of a Conditional Use Permit (CUP 20-08) for the construction of the anaerobic lagoon digester.

1.1.1 - PROJECT OBJECTIVE

It is the objective of the Project to operate an economically viable and competitive dairy facility in compliance with applicable laws and regulations, optimally utilizing the available land resource, and mitigating any environmental impacts to the extent feasible and as required by CEQA.

The proposed project will reduce nuisance odors and vectors such as flies with the construction of the covered, lined, anaerobic lagoon digester. It will also protect and safeguard groundwater and the underlying aquifer from contamination.

The Project does not propose to expand or increase the dairy herd size or number of employees at the dairy.

1.2 - Procedures

In order to comply with the Dairy Element of the Kings County General Plan and the California Environmental Quality Act (CEQA), the preparation of a Tiered Environmental Impact Report and approval of a Conditional Use Permit by the lead agency is required.

Section 15121(a) of the *Guidelines for Implementation of the California Environmental Quality Act* (State CEQA Guidelines) defines an EIR as an informational document that will:

> *…inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to*

minimize the significant effects, and describe reasonable alternatives to the project.

As defined by Section 15378 of the State CEQA Guidelines, a "project" is any action that "…has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment…" Section 15093 of the State CEQA Guidelines requires decision-makers to balance the benefits of a proposed project against any unavoidable adverse environmental effects of the project. If the benefits of the project outweigh the unavoidable adverse environmental effects, then the decision-makers may adopt a statement of overriding considerations, finding that the environmental effects are acceptable in light of the project's benefits to the public.

Under CEQA, the Lead Agency is usually the public agency which has the principal responsibility for carrying out or approving a project. In this case, the Kings County Planning Commission will act as Lead Agency with authority to certify the EIR; the Board of Supervisors acts as the appellate body if the Planning Commission's decision is contested. Under *Section 15381* of the *CEQA Guidelines*, a "Responsible Agency" is a public agency other than the Lead Agency that has discretionary approval authority over the project and will utilize the EIR prepared for the County. Among the responsible agencies in this instance are the California Regional Water Quality Control Board, Central Valley Region, and the San Joaquin Valley Air Pollution Control District.

1.3 - Prior Environmental Documents

A program environmental impact report (PEIR), pursuant to *Article 11* (beginning at Section 15168) of the *CEQA Guidelines* was prepared and certified in support of the *Dairy Element* of the *Kings County General Plan* which was subsequently adopted by the Kings County Board of Supervisors on July 30, 2002. The PEIR provided the required environmental assessment for the adoption of the *Dairy Element*, and the construction of projects that meet the standards established in the PEIR. The *Dairy Element* addressed all of the potentially significant impacts that were identified and provided mitigation measures that reduced most of the impacts to a level that was less than significant. Projects that do not meet the standards in the PEIR and thus require further environmental review, may utilize information in the PEIR to complete the environmental review required under CEQA. The PEIR is hereby included by reference in the *Dairy Element* and this Draft TEIR and is made a part thereof. The PEIR for the *Dairy Element* is available for review at the Kings County Community Development Agency, Building No. 6, Kings County Government Center, 1400 W. Lacey Blvd., Hanford, California and on the County of Kings Planning Agency website at www.countyofkings.com/planning.

Section 15152 CEQA Guidelines: Tiering

a) "Tiering" refers to using the analysis of general matters contained in a broader EIR (such as one prepared for a general plan or policy statement) with later EIRs and negative declarations on narrower projects; incorporating by reference the general

discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project.

b) Agencies are encouraged to tier the environmental analyses which they prepare for separate but related projects including general plans, zoning changes, and development projects. This approach can eliminate repetitive discussions of the same issues and focus the later EIR or negative declaration on the actual issues ripe for decision at each level of environmental review. Tiering is appropriate when the sequence of analysis is from an EIR prepared for a general plan, policy, or program to an EIR or negative declaration for another plan, policy, or program of lesser scope, or to a site-specific EIR or negative declaration. Tiering does not excuse the lead agency from adequately analyzing reasonably foreseeable significant environmental effects of the project and does not justify deferring such analysis to a later tier EIR or negative declaration. However, the level of detail contained in a first tier EIR need not be greater than that of the program, plan, policy, or ordinance being analyzed.

c) Where a lead agency is using the tiering process in connection with an EIR for a large-scale planning approval, such as a general plan or component thereof (e.g., an area plan or community plan), the development of detailed, site-specific information may not be feasible but can be deferred, in many instances, until such time as the lead agency prepares a future environmental document in connection with a project of a more limited geographical scale, as long as deferral does not prevent adequate identification of significant effects of the planning approval at hand.

d) Where an EIR has been prepared and certified for a program, plan, policy, or ordinance consistent with the requirements of this section, any lead agency for a later project pursuant to or consistent with the program, plan, policy, or ordinance should limit the EIR or negative declaration on the later project to effects which:

    1. Were not examined as significant effects on the environment in the prior EIR; or
    2. Are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means.

e) Tiering under this section shall be limited to situations where the project is consistent with the general plan and zoning of the city or county in which the project is located, except that a project requiring a rezone to achieve or maintain conformity with a general plan may be subject to tiering.

f) A later EIR shall be required when the initial study or other analysis finds that the later project may cause significant effects on the environment that were not adequately addressed in the prior EIR. A negative declaration shall be required when the provisions of Section 15070 are met.

1. Where a lead agency determines that a cumulative effect has been adequately addressed in the prior EIR, that effect is not treated as significant for purposes of the later EIR or negative declaration and need not be discussed in detail.
2. When assessing whether there is a new significant cumulative effect, the lead agency shall consider whether the incremental effects of the project would be considerable when viewed in the context of past, present, and probable future projects. At this point, the question is not whether there is a significant cumulative impact, but whether the effects of the project are cumulatively considerable. For a discussion on how to assess whether project impacts are cumulatively considerable, see Section 15064(i).
3. Significant environmental effects have been "adequately addressed" if the lead agency determines that:
   - They have been mitigated or avoided as a result of the prior environmental impact report and findings adopted in connection with that prior environmental report; or
   - They have been examined at a sufficient level of detail in the prior environmental impact report to enable those effects to be mitigated or avoided by site specific revisions, the imposition of conditions, or by other means in connection with the approval of the later project.

g) When tiering is used, the later EIRs or negative declarations shall refer to the prior EIR and state where a copy of the prior EIR may be examined. The later EIR or negative declaration should state that the lead agency is using the tiering concept and that it is being tiered with the earlier EIR.

h) The rules in this section govern tiering generally. Several other methods to streamline the environmental review process exist, which are governed by the more specific rules of those provisions. Where multiple methods may apply, lead agencies have discretion regarding which to use. These other methods include, but are not limited to, the following:

1. General plan EIR (Section 15166)
2. Staged EIR (Section 15167)
3. Program EIR (Section 15168)
4. Master EIR (Section 15175)
5. Multiple-family residential development / residential and commercial or retail mixed-use
6. Development (Section 15179.5)
7. Redevelopment project (Section 15180)
8. Projects consistent with community plan, general plan, or zoning (Section 15183)
9. Infill projects (Section 15183.3)

Note: Authority: Section 21083, Public Resources Code. Reference: Sections 21003, 21061, 21083.3, 21093, 21094, 21100, 21151, 21157, and 21158, Public Resources Code; *Stanislaus Natural Heritage Project, Sierra Club v. County of Stanislaus* (1996) 48 Cal.App.4th 182; *Al*

Larson Boat Shop, Inc. v. Board of Harbor Commissioners (1993) 18 Cal.App. 4th 729; and Sierra Club v. County of Sonoma (1992) 6 Cal.App. 4th 1307.

1.4 - Methodology

The Kings County Dairy Element and Zoning Ordinance includes *Application Guidelines for New or Expanding Dairy Permits.* The *Guideline* is a set of procedures and Exhibit E-1 outlines the requirements with which a proposed project must comply. When an application for a new dairy, or the expansion of an existing dairy, does not or cannot meet all regulations, policies, mitigation requirements, and standards in the Dairy Element, the application will be processed as an application for a conditional use permit (CUP). The review of such a CUP will include CEQA review beyond the Program EIR, which may include tiering of environmental documents as appropriate, and a public hearing before the Kings County Planning Commission.

Exhibit E-1 *Checklist for Dairy Zoning Permit Applications* lists the requirements for a proposed project. Policy 3.1b requires all existing rural residences that are not associated with the application more than one-quarter (¼) mile (1,320 feet) from the proposed Dairy Facility.

The proposed Project is analyzed based on the incremental deviation from the certified Kings County General Plan Dairy Element EIR and the requirements of the Dairy Element Guidelines. The proposed Project intends to construct an anaerobic covered, lined digester approximately 1,194 feet from a residence to the south of the dairy.

Based on this, the lead agency determined that the TEIR should focus on the environmental aspects below.

Air Quality. This topical area addresses potential short and long-term air quality impacts associated with the project.

Biological Resources. The topical area provides information regarding potential impacts on biological resources.

Cultural Resources. The topical area provides information regarding potential impacts on cultural resources.

Energy. This section evaluates the potential effect the project may have on energy.

Greenhouse Gas Emissions. This topical area describes the conditions and operations that produce greenhouse gases.

It was determined that Project would not result of substantial new information that was not known at the time the EIR was certified, are determined to have a more severe adverse impact than discussed in the certified Dairy Element EIR.

1.5 - Organization of the TEIR

CHAPTER 1

Chapter 1 of the EIR briefly describes the proposed project, delineates the procedures and methodology for environmental evaluation of the project, outlines the contents of the project EIR, and lists agency actions and permits required for project implementation.

CHAPTER 2

Chapter 2 of the EIR describes the project in greater detail and summarizes the general characteristics of the project location. The project objectives are presented. The project's environmental setting is briefly described, and the regulatory context within which the project is evaluated or must be approved is outlined.

CHAPTER 3

The sections of the Chapter are organized as outlined below.

Introduction

Each environmental topic is preceded by either a brief description of the topic-related environment or a brief statement of the rationale for addressing the topic.

Impact Evaluation Criteria

Impact Evaluation Criteria are the standards or thresholds by which impacts are measured, with the objective being the determination of whether an impact will be significant.

Setting

This section provides a description of the environment which may be affected by the project, by topic, and may also include a discussion of the regulatory environment that may be applicable to the project.

Impacts

Each impact associated with a subject area is described and listed by number for future reference.

Conclusion

This is a statement identifying whether the impact is significant or less than significant. If found to be significant, the conclusion states whether the impact can be avoided or reduced to an acceptable level through implementation of mitigation measures, or whether the impact is unmitigable, unavoidable, cumulative and/or irreversible.

Mitigation Measures

Each proposed or recommended legal, feasible, and enforceable mitigation measure is described and listed by number.

Effectiveness of Measure

This is a statement that identifies whether the recommended measure will substantially reduce significant environmental impacts, based on the impact evaluation criteria.

Implementation/Monitoring

This is a statement of how the measure will be implemented and monitored.

CHAPTER 4

Chapter 4 describes, ranks, and evaluates alternatives to the proposed project. The proposed project is compared to each alternative, and the environmental ramifications of each are analyzed.

CHAPTER 5

Chapter 5 describes the cumulative effects of the proposed project.

CHAPTER 6

Chapter 6 evaluates or describes CEQA-required subject areas: growth inducement and significant environmental effects that cannot be avoided.

CHAPTER 7

Chapter 7 provides a monitoring and reporting program that summarizes the environmental issues, the recommended mitigation measures, and the agency or agencies responsible for monitoring and reporting on the implementation of the mitigation measures.

APPENDICES

Following the text of this Draft TEIR, separately bound but appended to the text, several appendices and technical studies have been included to facilitate full environmental review of the proposed project.

1.6 - Uses of the EIR and Required Agency Actions and Permits

If the County approves the proposed project, subsequent actions, permits, and approvals may be necessary. This EIR may be used, when certified, for evaluation of such subsequent actions. The construction and operation of the dairy will require:

- The approval by the Kings County Planning Commission of Conditional Use Permit No. 20-08 and Adoption of Resolution;
- Issuance of building permits by the Kings County Building Department;
- Approval of a Storm Water Pollution Prevention (construction) Permit by the Central Valley Regional Water Quality Control Board;
- Issuance of an Authority to Construct and a Permit to Operate by the San Joaquin Valley Air Pollution Control District; and
- Compliance with other federal, State and local district requirements.

CHAPTER 2 - PROJECT DESCRIPTION AND ENVIRONMENTAL SETTING

2.1 - Project Location

The High Roller Dairy (project site) is located at 14782 8th Avenue, approximately two miles southeast of Hanford, California at the intersection of State Route (SR) 43 and Jackson Avenue (Figures 2-1 and 2-2). It is within the Remnoy, California U.S. Geological Survey (USGS) 7.5-minute quadrangle, and within the southwest quarter of the southeast quarter of Section 20, Township 19 South, Range 22 East, Mount Diablo Base and Meridian (Figure 2- 3). The proposed Project will be built on a portion of the southern section of Assessor Parcel Number (APN) 028-040-016.

The site is surrounded by cropland to the north, east, south, and west.

2.2 - Project Objective

It is the objective of the project to operate an economically viable and competitive dairy facility in compliance with applicable laws and regulations, optimally utilizing the available land resource, and mitigating any environmental impacts to the extent feasible and as required by CEQA.

The Project will include the addition of an anaerobic lagoon digester adjacent to the western boundary of the dairy. The objectives of the proposed Project are the following:

- Increase manure management efficiency;
- Improve air quality;
- Protect groundwater quality;
- Reduce nuisance odors;
- Reduce vectors such as flies; and
- Generate 20,749 million BTU/year of renewable electricity, thus reducing dependence on fossil fuels that generate air pollution and greenhouse gases emissions and reduces reliance on fossil-fuel powered electrical energy.

2.3 - Project Setting

Kings County is ranked eighth among California counties in agricultural production with a gross value of all agricultural crops and products produced in 2018 being $2,351,983,000 (Kings County Department of Agriculture, 2018).

Milk has been a leading farm commodity in Kings County in recent years. According to the Kings County Agricultural Commissioner, the value of milk production in 2018 was $676 million (Kings County Department of Agriculture, 2018).

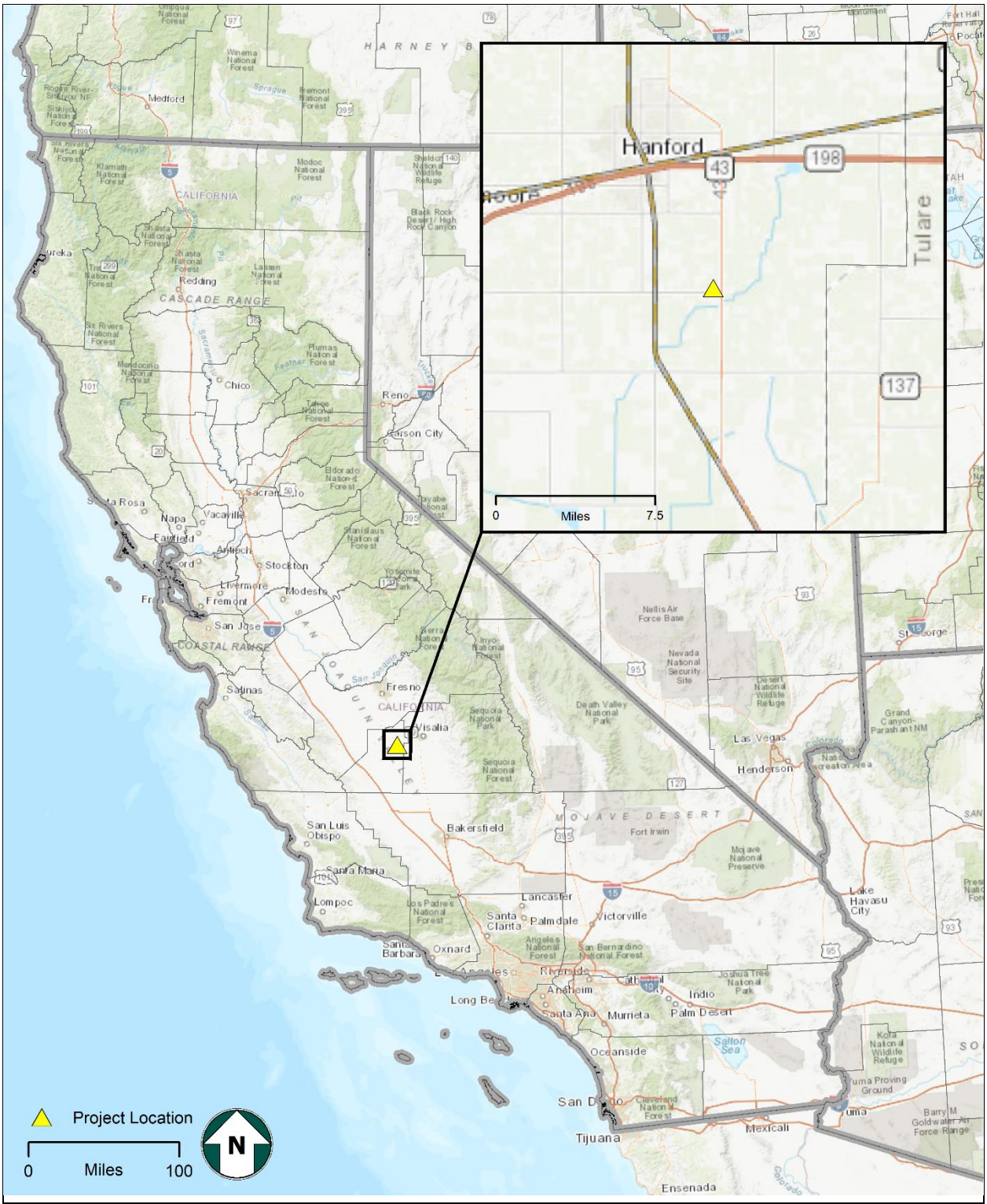

Figure 2-1
Regional Map

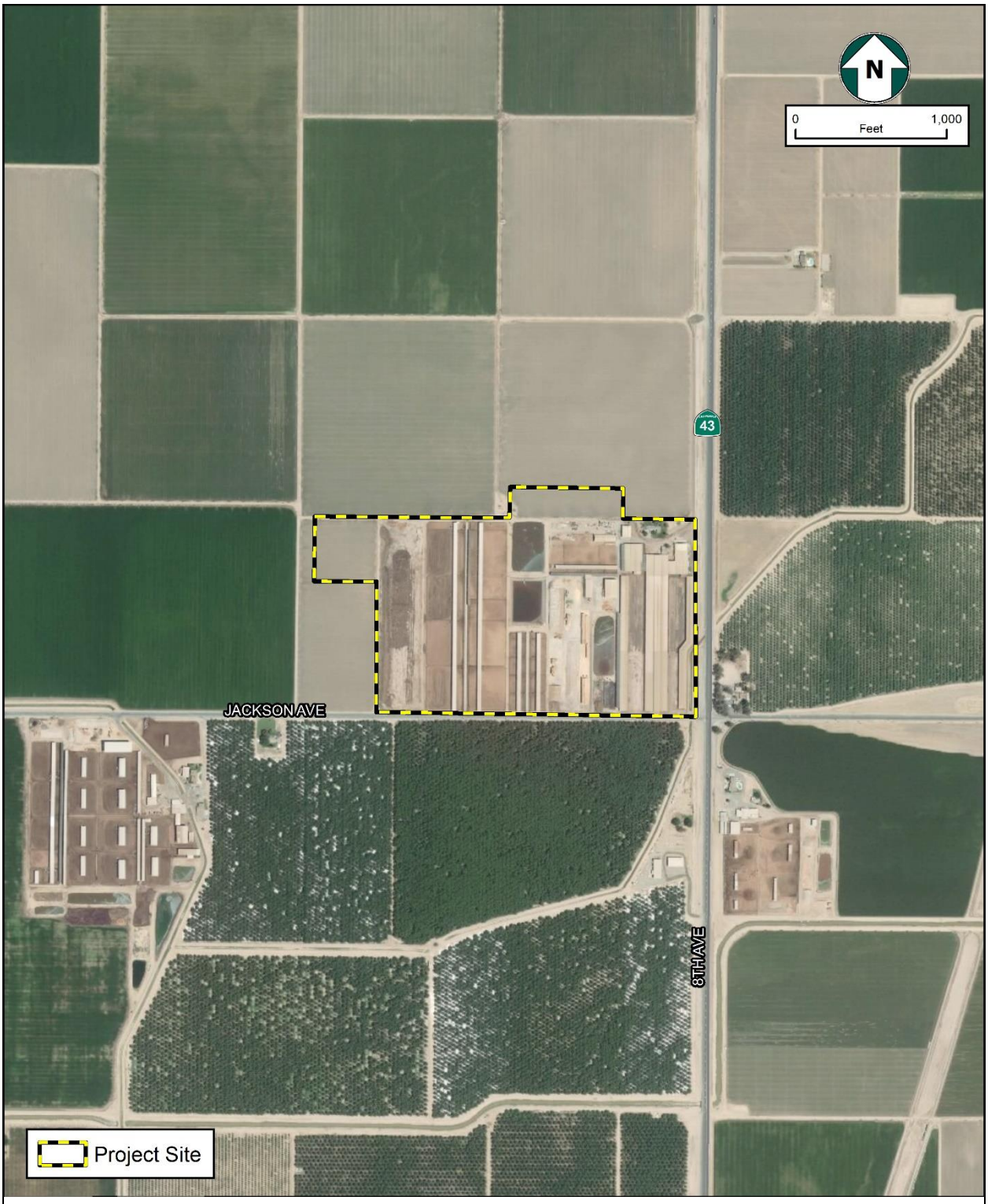

Figure 2-2
Project Location

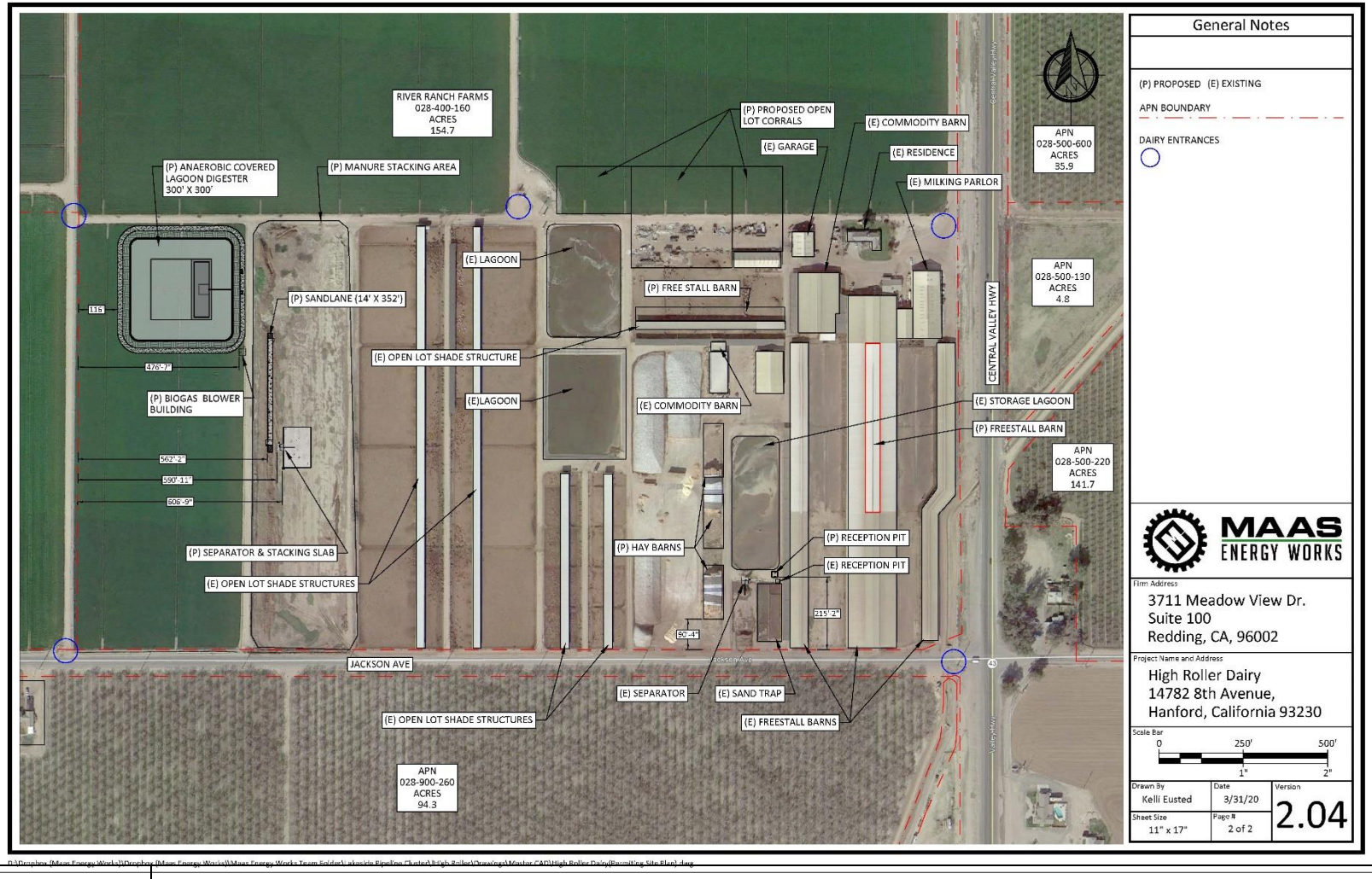

Figure 2-3
Facility Site Plan

A study prepared by the California Milk Advisory Board in 2018 described the dairy industry's impact on California's economy. In 2018, the latest year for which figures are available, California's largest agricultural commodity was responsible for creating a total of 179,000 jobs and $57.7 billion for dairy related economic activity for the state (California Milk Advisory Board, 2019).

2.4 - Description of the Project

The Project includes the addition of an anaerobic lagoon digester and associated infrastructure adjacent to the western boundary of the dairy. The digester is located approximately 1,194 feet from the nearest residence (Figure 2-3). The digester is 300 feet x 264 feet x 32 feet and will hold approximately 10.5 million gallons. Once the digester and biogas infrastructure are operational, the site will generate approximately 20,749 million BTU/year, thus reducing dependence on fossil fuels that generate air pollution and greenhouse gases emissions, meeting the County and State's climate and energy goals to reduce energy usage, increase energy efficiency and increase the use of forms of renewable energy.

In addition, several new dairy-related structures are proposed. The existing High Roller Dairy facility includes 5,333 dairy cows (Animal Units) housed in open lot shade structures and free stall barns. Existing manure travels to an existing storage lagoon in the center of the parcel, and cows are milked in the northeast corner. There is no proposed increase in the number of Animal Units.

The Project proposes to install the following new items:

- Anaerobic Covered Lagoon Digester
- Associated Digester Infrastructure:
  - Biogas Blower/Mechanical Building
  - Separator
  - Sand lane
  - Biogas Pipe
  - Moisture Trap and Pad
  - Stacking Slab
  - Reception pit with rotating pumps and screen bypass pump
- Dairy Structures:
  - Three open lot corrals
  - Two free stall barn
  - Two hay barns
  - Dirt stacking area

2.4.1 - Anaerobic Covered Lagoon Digester Technology and Overview

The anaerobic covered lagoon digesters are a passive addition to the dairy and require minimal oversight. Cameras and automation equipment will be installed at the digester sight to enable remote monitoring. The digester will be suited with an emergency vent as required

by the San Joaquin Valley Air District (SJVAPCD). A small, prefabricated mechanical building (30 feet x30 feet) will be constructed on-site and will house a biogas chiller to remove condensate prior to entering the biogas gathering lines, 8 small carbon media absorber tanks to remove sulfur from the biogas prior to entering the biogas gathering line, and a biogas blower to move the gas from the digester system to the biogas gathering lines as discussed in more detail below.

The digester will be created by excavating and lining a new pond on the western portion of the existing dairy parcel. All digester ponds will meet the Central Valley Regional Water Quality Control Board (CRWQCB) Tier 1 standards, which include the installation of double-layered liners of welded 60 ml HDPE with leak detection to ensure water quality. The digester pond design must be pre-approved by the CRWQCB and the installation is monitored by professional engineers. Once constructed and prior to actual operation of the ponds to treat wastewater, an installation report will be submitted to CRWQCB for their review and approval.

The Project will then cover the newly lined pond with 80 ml flexible HDPE material to create the project's biogas collection system. The lagoon cover will be welded to the liner ensuring a complete seal. A perforated pipe runs above the water line around the entire perimeter of the covered lagoon to ensure uninterrupted gas flow to the outlet. The cover will also include submersible mixers to agitate the manure which will minimize settling, reduce sludge in the digester, and increase biogas production. An HDPE baffle creates a pathway for manure to slowly flow through the digester, ensuring hydraulic retention time and eliminating dead spots. Finally, sludge draw-off pipes are commonly added as a final protection against sludge buildup. This type of covered lagoon technology is highly commercialized and represents 100 percent of the successful digester installations in California since 2014. Engineered site plan and design drawings for the proposed digester have been attached.

The High Roller Dairy is part of the Lakeside Hanford Biogas Cluster Project, which included a biogas upgrading facility and approximately 37 miles of gather pipelines. This project was approved by the lead agency in 2019 (CUP 17-14). Once installed, the pipeline will connect the anaerobic digester facility at High Roller Dairy to the approved biogas upgrading facility. The biogas produced by these anaerobic digesters would be delivered through the proposed pipeline to a blower and a gas-liquid "scrubber" to remove any excess liquid or moisture. This process separates the biomethane from the carbon dioxide and other contaminates. After the gas exits this phase, it is delivered through a meter to monitor production, and gas will leave the facility through the proposed, low pressure gas-gathering lines.

2.4.2 - DIGESTER CONSTRUCTION

Hours and Scope of Construction: During construction, there will be between 5-10 workers during normal business hours ranging from 8:00 am-5:00 pm. The workers will travel to and from the dairy using their personal vehicles. Access to the site will be from Central Valley State Route (SR) 43, and Jackson Avenue. Excavation equipment will be kept on site for the duration of construction, typically 6 to 8 months.

Construction crews and equipment will use the existing dairy for parking and staging. These areas already exist as flat dirt parking areas for vehicles and/or farm equipment.

The project facility is similar in nature to the existing dairy infrastructure and fits into its surroundings. The pipeline will run underground and will not be seen. Noise generated by the project equipment will not be above typical agriculture facility levels. The facility does not include any lights or other sources of glare beyond what is currently used for security at the dairy. Video surveillance will assure the ongoing safety and security of the construction operation and dairy facility. Once operational, the project will not generate fugitive dust. The project will not emit or concentrate any odors, and in fact will reduce odors with the installation of the covered manure lagoons. Vectors such as flies will also be reduced, as the digester lagoon will be covered.

The dairy and construction site will follow exiting safety requirements and per building code will submit fire suppression documentation and undergo required inspections and evacuation requirements.

2.4.3 - WATER CONSTRUCTION

Construction: During the excavation portion of construction, the number varies between 20,000 and 100,000 gallons per day, for up to 6 weeks. Based on an average 5-day work week approximately 1.8-9.2 AF would be required. During the rest of construction (approximately 6 months), usage averages less than 1,000 gallons per day. Based on an average 20 workdays a month, approximately 0.37 AF (120,000 gallons) would be required.

Prior to excavation, the facility engineer will complete a Storm Water Pollution Prevention Plan (SWPPP), which will be submitted to the waterboard as a preventative measure in managing storm water that flows from the dairy. The construction of the digester will assist in capturing this water by expanding the manure management capabilities of the dairy.

2.4.4 - CONSTRUCTION EQUIPMENT

It is anticipated that the following pieces of equipment would be used during construction activities:

- Mini excavator
- Scraper
- Self-propelled compactor
- Grader
- Loader
- Service truck
- Air compressor
- Trencher
- Mobile generator
- HDPE welding machine

2.5 - Operations

2.5.1 - DAIRY FACILITY

The biogas is produced by the digester at ambient temperature and just slightly above atmospheric pressure. From the digester, it's piped through a biogas filter and condensation trap to remove any particulates and condensation. Next, it's pulled through a condenser to lower the temperature of the gas to condense out additional moisture and dry the gas for sending down the gathering pipelines. After condensation, the biogas blower pressurizes the gas to no more than 20 PSI and sends it through a media-based scrubber to lower the H_2S below levels hazardous to human health. After the scrubber, the gas is sent down the gathering pipelines to the cleanup facility. Each blower will be controlled by a central SCADA system that is overseen by operators on a 24/7 basis. Additionally, flow meters will be installed at each digester site and at the upgrading facility to monitor biogas flows.

2.5.2 - GATHERING LINES

The gathering lines move biogas from the High Roller dairy to the central upgrading facility. The lines will range in size from four inches to 20 inches and will be constructed of SDR-21 HDPE. The lines will be buried at least 36 inches below grade and will be marked with tracer wire. Each dairy will have a blower to push gas from that dairy into the gathering lines at pressure of less than 20 psi. Each blower will be controlled by a central SCADA system that is overseen by operators on 24 hour/7 days a week basis. When a blower increases in speed, more biogas is pushed to the upgrading facility, and when it decreases, less biogas is sent. The gathering lines will be pressure monitored via SCADA equipment in real time to detect leaks or major failures. Flow meters at each site and the upgrading facility will monitor flows. Flow meters at each site and the upgrading facility will monitor flows. As noted above, if a leak is detected or if there is an issue with the biogas quality, there is an emergency stop button.

Operational Equipment – Dairy Facility

Description	Motor Size	Type	Oper BHP	Oper Factor	Oper kW
Chiller	30 hp	VFD	30	80%	17.76
Biogas Blower	40 hp	VFD	40	70%	20.72
Hydrogen Sulfide Scrubber	N/A				
SCADA Controls	N/A				
Total Kw					38

SCADA = Supervisory Control and Data Acquisition

2.5.3 - WATER USAGE OPERATIONS

Operational water usage is not anticipated to increase from current levels. Bottled water for employees will be brought to the project site as well.

2.6 - Discretionary Actions Required

CUP 20-08 application was submitted by the owner/operator for the construction and operation of the proposed digester. The Project includes development of new cattle shades, freestalls, corrals and hay barns as shown on Figure 2-3.

The proposed Project is analyzed based on the incremental deviation it represents from the certified Kings County General Plan Dairy Element EIR and the requirements of the Dairy.

2.7 - Cumulative Projects

According to the lead agency, there are no other proposed projects within one mile of the subject Project.

2.8 - Environmental Setting

As set forth in *Section 15125(a) of the State CEQA Guidelines: "An EIR must include a description of the physical environmental conditions in the vicinity of the project. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to provide an understanding of the significant effects of the proposed project and its alternatives."*

Chapter 3, Setting, Impacts and Mitigation Measures contains topic-specific additional information on the environmental setting together with analysis of the project's effect on this setting.

2.9 - Regional Setting

Located in a rural agricultural area in eastern Kings County, the project area is zoned General Agricultural 20 acre Minimum zone district (AG-20). The land surrounding the site is dedicated to field crops. The 2035 Kings County General Plan Land Use Element shows this portion of the County within Agricultural land use (County of Kings, 2010).

Climate during the winter in Kings County is dry and mild with the high temperature ranging from 55 to 65 degrees. Fog is not uncommon during the winter months and may settle for up to two weeks. Summer in Kings County is dry and hot with average daytime July and August temperatures hovering just below 100 degrees. Annual precipitation is approximately ten inches with a majority of the rain falling between November and April (County of Kings, 2010).

The Project area is subject to characteristic seasonal airflows. During the summer, air currents from the Pacific Ocean enter the Valley through the San Francisco Bay and Delta region and are forced down the Valley. These air movements are primarily to the southeast at velocities of six to ten miles per hour. During the winter, cold air flowing off the surrounding mountains results in currents toward the northwest and velocities ranging from zero to five miles per hour. These airflows result in extensive horizontal mixing of air

masses in the Valley. However, vertical dispersion is constrained by temperature inversions, an increase in air temperature in a stable atmospheric layer, which may occur throughout the year.

The Project lies within the Kings County portion of the San Joaquin Valley Air Basin (SJV Air Basin). The air quality of the Valley is directly related to the ability of its atmosphere to dilute and transport pollutants. The climate and meteorology of the Valley are conducive to the creation and entrapment of air pollution. Air pollution within the Valley is, in part, a result of the enclosed air basin, which experiences long periods of inversion, a relatively light wind flow, and a generous amount of sunlight. The San Joaquin Valley Air Basin is comprised of eight counties: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and central and western Kern. The Basin periodically exceeds State and/or federal standards for levels of ozone and fine particulate matter.

The natural vegetation communities of the southern San Joaquin Valley historically supported a diverse assemblage of plant and animal species. The conversion of native and naturalized plant communities by agricultural development, road construction, dam construction, and urbanization has significantly reduced available wildlife and plant habitat. As a result of this conversion, several species of both plants and animals have been extirpated from the southern San Joaquin Valley, and populations of other species have declined significantly.

The topography of the project area is essentially flat with slopes, prior to agricultural land leveling, averaging ten feet to the mile toward the southwest. The Federal Emergency Management Flood Insurance Rate Map shows the site is not within a 100-year flood zone.

The southern San Joaquin Valley, approximately 10,000 square miles, is a broad structural trough bordered by the Sierra Nevadas on the east, the Coastal Ranges on the west and the Transverse Range on the south. The occurrence of groundwater is directly related to the geology and soils in the region. Fresh groundwater is principally contained in the unconsolidated continental deposits of the Pliocene to the Holocene age, which extend to depths ranging from less than 100 to more than 3,000 feet.

The ultimate source of groundwater in the San Joaquin Valley is precipitation on the valley and its tributary drainage basins. Replenishment of the unconfined and semi-confined groundwater bodies can be by seepage from streams and by underflow in permeable materials flooring the river and stream canyons that border the valley.

The groundwater basin in the southern San Joaquin Valley is the Tulare Lake Basin which covers the area south of the San Joaquin River and includes Kings County and the western (valley portions) of Fresno, Tulare and Kern Counties.

The proposed actions for which this Tiered Environmental Impact Report (TEIR) is being prepared include:

- Approval by Kings County of a Conditional Use Permit (CUP 20-08); and

- Issuance of an Authority to Construct (ATC) and Permit to Operate (PTO) by the San Joaquin Valley Air Pollution Control District.

CHAPTER 3 - SETTING, IMPACTS AND MITIGATION MEASURES

Introduction

This section of the EIR addresses topics required by the *California Environmental Quality Act (CEQA)*. Each topic includes a description of existing environmental or regulatory conditions for the proposed project in its Setting subsection. The Impacts and Mitigation Measures subsection for each topic address impacts and mitigation measures related to the project.

Mitigation measures, unless otherwise noted, will be assumed to be sufficient to reduce impacts to a less-than-significant level. When more than one mitigation measure is recommended for a specific impact, all the measures will be required to reduce the impact to less than significance unless the word "or" or "alternatively" appears in the list of measures.

The applicant must comply with the mitigation measures, including all reporting requirements, as a condition of approval of the project. Failure to fully comply with all required mitigation measures is potential cause for enforcement action by the County which may include permit modification or revocation, in accord with procedures set forth by the County of Kings. When monitoring of mitigation measures by the Kings County Community Development Agency is required, the project applicant/operator shall maintain complete performance records on file for Agency review for each such measure.

Each impact is briefly described ("headed") and numbered in bold lettering. Text then follows to provide discussion and analysis. At the end of the impacts discussion, mitigation measures are listed and numbered to correspond to the numbered impact. The summary table in the Executive Summary includes the same text heading and the mitigation measures.

Focus. The EIR and the discussions in this Chapter have been focused in accord with the scoping process provided for in *Public Resources Code 21080.4(a)* and *CEQA Guidelines*. Discussion of *CEQA*-required topics not identified by this process as requiring analysis in depth has not necessarily been eliminated but has been determined by the lead agency as reduced to that essential for any required environmental analysis.

Determination of Significance. Under *CEQA*, a significant impact is defined as a substantial, or potentially substantial, adverse change in the environment *(Public Resources Code 21068)*. The guidelines implementing *CEQA* direct that this determination be based on substantial evidence in light of the whole record. The criteria for determining significance of a particular impact are identified prior to the impact discussion in each topical section, and are consistent with significance criteria set forth in *Appendix A* of the *CEQA Guidelines* criteria and procedures for the evaluation of projects as implemented by the County of Kings. All pertinent subject areas contained in the *Dairy Element of the Kings County General Plan* and the San Joaquin Valley's Air Pollution Control District Guidelines are addressed.

3.1 - Air Quality

3.1.1 - INTRODUCTION

This section describes the impacts of the proposed project on local and regional air quality. It describes existing air quality in the San Joaquin Valley; project related emissions and health effects; the impacts of these emissions at both the project and regional scale (cumulative impacts); and potential mitigation measures which would reduce or eliminate identified significant impacts.

In addition to the criteria set forth in the recommended checklist appended to the State CEQA Guidelines, the San Joaquin Valley Air Pollution Control District (SJVAPCD) has established guidelines as to what it considers significant air quality impacts. For the purposes of this EIR both *CEQA* and SJVAPCD significance criteria will be reviewed.

The analysis in this section is based on the Air Quality Impact Analysis prepared for the Project (Trinity Consultants, 2020), which is included as Appendix A of this TEIR.

3.1.2 - ENVIRONMENTAL SETTING

Air Pollution Climatology

The Project is located in the San Joaquin Valley Air Basin (SJVAB), a continuous inter-mountain air basin. On the east is the Sierra Nevada Range; the Coast Range forms the western boundary; and the Tehachapi Mountains form the southern boundary. The San Joaquin Valley Air Basin is comprised of San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, and Tulare Counties and the valley portion of Kern County; approximately 25,000 square miles.

Under the provisions of the U.S. Clean Air Act, the Kings County portion of the SJVAB has been classified as nonattainment/extreme, nonattainment/severe, nonattainment, attainment/unclassified, attainment, or unclassified under the established NAAQS and CAAQS for various criteria pollutants. Table 3.1-1 provides the SJVAB's designation and classification based on the various criteria pollutants under both NAAQS and CAAQS.

Both the federal government and the State of California have established health-based ambient air quality standards (AAQS) for these air pollutants, commonly referred to as "criteria pollutants". They are called "criteria" pollutants because standards have been established for each of them to meet to protect the public health (primary standards) and welfare (secondary standards).

The U.S. EPA has established National Ambient Air Quality Standards (NAAQS) which apply to all areas throughout the nation. In most cases, NAAQS define the maximum acceptable concentration that may be reached more than once per year.

Table 3.1-1
SJVAB Attainment Status

Pollutant	NAAQS[a]	CAAQS[b]
O_3, 1-hour	No Federal Standard[f]	Nonattainment/Severe
O_3, 8-hour	Nonattainment/Extreme[e]	Nonattainment
PM_{10}	Attainment[c]	Nonattainment
$PM_{2.5}$	Nonattainment[d]	Nonattainment
CO	Attainment/Unclassified	Attainment/Unclassified
NO_2	Attainment/Unclassified	Attainment
SO_2	Attainment/Unclassified	Attainment
Pb (Particulate)	No Designation/Classification	Attainment
H_2S	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing particulates	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

Source: Appendix A

Note:

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 PM_{10} National Ambient Air Quality Standard (NAAQS) and approved the PM_{10} Maintenance Plan.

d. The Valley is designated nonattainment for the 1997 $PM_{2.5}$ NAAQS. EPA designated the Valley as nonattainment for the 2006 $PM_{2.5}$ NAAQS on November 13, 2009 (effective December 14, 2009).

e. Though the Valley was initially classified as serious nonattainment for the 1997 8-hour O_3 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 EPA revoked the federal 1-hour O_3 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 O_3 nonattainment areas continue to apply to the SJVAB.

California has adopted more stringent ambient air quality standards (CAAQS or state standards) for most of the criteria air pollutants. California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

The climate of the project area is typical of inland valleys in California, with hot dry summers and cool, mild winters. Daytime temperatures in the summer often exceed 100 degrees, with lows in the 60s. In winter, daytime temperatures are usually in the 50s, with lows around 35 degrees. Radiation (Tule) fog is common in the winter, and may persist for days. Winds are predominantly up-valley (from the north) in all seasons, but more so in the summer and spring months. Winds in the fall and winter are generally lighter and more variable in direction but generally blow towards the south and southeast.

Because of the Valley's unique physical characteristics, its pollution potential is very high. Surrounding elevated terrain, in conjunction with temperature inversions, frequently restricts lateral and vertical dilution of pollutants. Abundant sunshine and warm

temperatures in summer are ideal conditions for the formation of photochemical oxidants, and the Valley becomes a frequent scene of photochemical pollution.

Air pollution transported from the San Francisco Bay and Sacramento areas is believed to account for 27 percent of measured ozone levels in the northern portion of the SJVAPCD (San Joaquin, Stanislaus, and Merced Counties). The percentage drops to about 11 percent in the mid-valley counties (Fresno, Tulare, Madera and Kings Counties).

Current Air Quality. The estimated population within the San Joaquin Valley Air Basin (SJVAB) is more than 3.6 million people, according to SJVAPCD's Planning Division. The SJVAB has one of the most severe air pollution problems in the State. The surrounding topographic features restrict air movement through and out of the basin and, as a result, impede the dispersion of pollutants from the basin. Inversion layers are formed in the San Joaquin Valley air basin throughout the year. During the summer, the San Joaquin Valley experiences daytime temperature inversions at elevations from 2,000 to 2,500 feet above the valley floor. During the winter months, inversions occur from 500 to 1,000 feet above the valley floor (Cal. Air Resources Board, 2007).

The California Air Resources Board operates a series of monitoring stations, including two monitoring sites in Kings County (Corcoran and Hanford) that are relatively close to the project site. The Hanford site measures ozone, and PM_{10}. The Corcoran site measures PM_{10} and $PM_{2.5}$. A summary of air quality data from the Hanford and Visalia monitoring sites is shown in Table 3.1-2, which provides the background concentrations for O_3, particulate matter of 10 microns (PM_{10}), particulate matter of less than 2.5 microns ($PM_{2.5}$), CO, NO_2, SO_2, and Pb as of June 2020. Information is provided for the Hanford-S Irwin Street and Visalia – N Church Street monitoring stations for 2017 through 2018. No data is available for H_2S, Vinyl Chloride, or other toxic air contaminants in the Kings County or surrounding counties.

Although the San Joaquin Valley Air Basin is often in violation of state and federal ozone ambient air quality standards and PM_{10} thresholds, data collected over the past ten years by the California Air Resources Board shows that air quality in the Valley is, in general, improving. The SJVAPCD has requested and received approval of Federal standard reclassification to 'extreme' nonattainment for ozone, which will delay the attainment date to 2024, but results in extremely strict controls for stationary sources of pollutants. The focus of the current planning effort for the San Joaquin Valley is ozone, but the Valley is also classified as nonattainment for the federal $PM_{2.5}$ standard.

PM_{10} concentrations in this area of the air basin have been trending slowly downward since monitoring began in 1988. The air basin is designated as a attainment area for federal PM_{10} ambient air quality standards.

Table 3.1-2
Existing Air Quality Monitoring Data in Project Area

Pollutant and Monitoring Station Location	Maximum Concentration			Days Exceeding Standard		
	2016	2017	2018	2016	2017	2018
O_3 – 1-hour CAAQS (0.09 ppm)						
Hanford – S Irwin Street	0.097	0.106	0.108	2	7	1
Visalia – N Church Street	0.098	0.109	0.112	1	9	8
O_3 – 8-hour NAAQS & CAAQS (0.070 ppm)						
Hanford – S Irwin Street	0.088	0.094	0.082	49	38	29
Visalia – N Church Street	0.083	0.091	0.094	18	61	53
PM_{10} – 24-hour CAAQS (50 µg/m^3)						
Hanford – S Irwin Street	110.5	148.8	181.1	20	20	19
Visalia – N Church Street	132.5	145.7	159.6	95	131	162
PM_{10} – 24-hour NAAQS (150 µg/m^3)						
Hanford – S Irwin Street	152.2	298.4	174.2	0	2	1
Visalia – N Church Street	137.1	144.8	1513.4	0	0	0
$PM_{2.5}$ - 24-hour CAAQS (35 µg/m^3)						
Hanford – S Irwin Street	59.7	113.4	107.8	*	*	*
Visalia – N Church Street	53.9	89.0	96.2	*	*	*
$PM_{2.5}$ - 24-hour NAAQS (35 µg/m^3)						
Hanford – S Irwin Street	59.7	113.4	107.8	25	33	31
Visalia – N Church Street	48.0	86.1	86.8	7	9	12
NO_2 - 1-Hour CAAQS (0.18 ppm)						
Hanford – S Irwin Street	52	56	56	0	0	0
Visalia – N Church Street	57	58	69	0	0	0
NO_2 - 1-Hour NAAQS (0.10 ppm)						
Hanford – S Irwin Street	52.2	56.9	56.3	0	0	0
Visalia – N Church Street	57.5	58.1	69.2	0	0	0

Source: Appendix A
Notes: ppm= parts per million
* There was no data available to determine the value.

3.1.3 - REGULATORY SETTING

Environmental Protection Agency – Federal Regulation

The Environmental Protection Agency (EPA) is responsible for implementing programs established under the Federal Clean Air Act, such as establishing and reviewing the National Ambient Air Quality Standards (NAAQS) and judging the adequacy of State Implementation Plans (SIPs). The EPA may also delegate authority to implement some federal programs to the states, while retaining oversight authority to ensure that the programs are properly implemented.

The U.S. EPA has established NAAQS which apply to all areas throughout the nation. In most cases, NAAQS define the maximum acceptable concentration that may be reached.

California Air Resources Board – State Regulation

The California Air Resources Board (CARB) is responsible for enforcing the federally required State Implementation Plan (SIP) in an effort to achieve and maintain the national ambient air quality standards. SIPs are prepared by states and submitted to U.S. EPA describing how each federal nonattainment area will attain and maintain national ambient standards. SIPs include the technical foundations for measuring air quality (e.g. emission inventories and air quality monitoring), control measures, strategies and enforcement mechanisms, and the individual nonattainment plans for air quality districts. CARB is responsible for determining air basin attainment designations in California.

California has adopted more stringent ambient air quality standards (CAAQS or state standards) than Federal standards for most of the criteria air pollutants. California has also set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. CARB acts as an oversight agency for activities conducted by air quality management districts, which are organized at the county or regional level. CARB is also responsible for the following:

Regulating Mobile Sources: Establishing tailpipe standards and regulating emissions from mobile sources.

Regulating Toxic Air Contaminants (TAC): Identifying toxic air contaminants and overseeing requirements imposed by the Air Toxics Hot Spot Assessment Act of 1988 (AB2588).

Ambient Air Quality Standards

Both the federal government (EPA) and the State of California (CARB) have established health-based ambient air quality standards (AAQS) for eight air pollutants, commonly referred to as "criteria pollutants". These pollutants are called "criteria" pollutants because standards have been established for each of them to meet to protect the public health (primary standards) and welfare (secondary standards).

The U.S. EPA has established National Ambient Air Quality Standards (NAAQS) which apply to all areas throughout the nation. In most cases, NAAQS define the maximum acceptable concentrations that may be reached more than once per year. These ambient air quality standards are maximum levels of contaminants, which are intended to represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The air quality criteria pollutants under state and federal law include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM_{10}, $PM_{2.5}$, lead, and hydrogen sulfide.

The federal and State ambient air quality standards are summarized in Table 3.1-3. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes are intended to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and PM_{10}.

Table 3.1-3
Federal & California Standards

Pollutant	Averaging Time	NAAQS Concentration	CAAQS Concentration
O_3	8-hour	0.070 ppm (137 µg/m^3)[a]	0.070 ppm (137 µg /m3)
	1-hour		0.09 ppm (180 µg/m^3)
CO	8-hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1-hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
NO_2	Annual Average	53 ppb (100 µg/m^3)	0.030 ppm (57 µg/m^3)
	1-hour	100 ppb (188.68 µg/m^3)	0.18 ppm (339 µg/m^3)
SO_2	3-hour	0.5 ppm (1,300 µg/m^3)	
	24-hour	0.14 ppm (365 µg/m^3)	0.04 ppm (105 µg/m^3)
	1-hour	75 ppb (196 µg/m^3)	0.25 ppm (655 µg/m^3)
Particulate Matter (PM_{10})	Annual Arithmetic Mean		20 µg/m^3
	24-hour	150 µg/m^3	50 µg/m^3
Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3
	24-hour	35 µg/m^3	
Sulfates	24-hour		25 µg/m^3
Pb[4]	Rolling Three-Month Average	0.15 µg/m^3	
H_2S	1-hour		0.03 ppm (42 µg/m^3)
Vinyl Chloride (chloroethene)	24-hour		0.010 ppm (26 µg/m^3)
Visibility Reducing Particles	8 hour (1000 to 1800 PST)		b
ppm = parts per million	mg/m^3 = milligrams per cubic meter		
ppb = parts per billion	µg/m^3= micrograms per cubic meter		

Source: Appendix A

a. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm

b. In 1989, the CARB converted both the general statewide 10-mile visibility standards 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.

The U.S. Environmental Protection Agency in 1997 adopted new national air quality standards for ground-level ozone and for fine Particulate Matter. Both State and federal particulate standards now apply to particulates under 10 microns (PM_{10}) rather than to total suspended particulate, which includes particulates up to 30 microns in diameter. Continuing studies have shown that the smaller-diameter fraction of TSP represents the greatest health hazard posed by the pollutant; therefore, EPA has recently established NAAQS for $PM_{2.5}$. The project area is classified as attainment for PM_{10} and non-attainment for $PM_{2.5}$ for NAAQS. The San Joaquin Valley is nonattainment for both the State and federal $PM_{2.5}$ standards. PM_{10} levels regularly exceeded the CAAQS at the two monitoring stations over the three- year period of 2016 through 2018, but only slightly in 2017 for the NAAQS. Table 3.1-3 shows that

$PM_{2.5}$ NAAQS were exceeded from 2016 through 2018. Similar levels can be expected to occur in the vicinity of the project site.

San Joaquin Valley Air Pollution Control District – Regional Air Quality

The management of air quality in the San Joaquin Valley Air Basin is the responsibility of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The SJVAPCD has the responsibility to develop and implement attainment strategies to ensure that future emissions will be within federal and state standards and to monitor ambient air pollutant concentrations throughout the air basin. In addition to planning responsibilities, SJVAPCD has permitting authority over stationary sources of pollutants such as power plants and manufacturing facilities as well as some area sources such as agricultural operations.

Federal and state air quality laws require identification of areas not meeting the ambient air quality standards. These areas must develop regional air quality plans to eventually attain the standards. Under both the federal and State Clean Air Acts, the San Joaquin Valley Air Basin (SJVAB) is a non-attainment area (standards have not been attained) for ozone and $PM_{2.5}$. The air basin is either attainment or unclassified for other ambient standards.

Regional Air Quality Plans

OZONE PLANS

"The Extreme Ozone Attainment Demonstration Plan, adopted by the SJVAPCD Governing Board October 8, 2004, sets forth measures and emission-reduction strategies designed to attain the federal one-hour ozone standard by November 15, 2010, as well as an emissions inventory, outreach, and rate of progress demonstration. This plan was approved by the USEPA on March 8, 2010; however, the USEPA's approval was subsequently withdrawn effective November 26, 2012, in response to a decision issued by the U.S. Court of Appeals for the Ninth Circuit (Sierra Club v. EPA, 671 F.3d 955) remanding USEPA's approval of these SIP revisions. Concurrent with the USEPA's final rule, CARB withdrew the 2004 plan. The SJVAPCD developed a new plan for the one-hour ozone standard, the 2013 Plan for the Revoked 1-Hour Ozone Standard, which it adopted in September 2013.

The 2007 Ozone Plan, approved by CARB on June 14, 2007, demonstrates how the Air Basin would meet the federal eight-hour ozone standard. The 2007 Ozone Plan includes a comprehensive list of regulatory and incentive-based measures to reduce emissions of ozone and particulate matter precursors throughout the Air Basin. Additionally, this plan calls for major advancements in pollution control technologies for mobile and stationary sources of air pollution, and an increase in State and federal funding for incentive-based measures to create adequate reductions in emissions to bring the entire Air Basin into attainment with the federal eight-hour ozone standard (San Joaquin Valley Air Pollution Control District, 2007).

On April 16, 2009, the SJVAPCD Governing Board adopted the Reasonably Available Control Technology Demonstration for Ozone State Implementation Plans (2009 RACT SIP). In part, the 2009 RACT SIP satisfied the commitment by the SJVAPCD for a new reasonably available

control technology analysis for the one-hour ozone plan and was intended to prevent all sanctions that could be imposed by USEPA for failure to submit a required SIP revision for the one hour ozone standard. With respect to the eight-hour standard, the plan also assesses the SJVAPCD's rules based on the adjusted major source definition of 10 tons per year (due to the Air Basin's designation as an extreme ozone nonattainment area), evaluates SJVAPCD rules against new Control Techniques Guidelines promulgated since August 2006, and reviews additional rules and amendments that had been adopted by the Governing Board since August 17, 2006, for reasonably available control technology consistency.

The 2013 Plan for the Revoked 1-Hour Ozone Standard was approved by the Governing Board on September 19, 2013 (San Joaquin Valley Air Pollution Control District, 2013). Based on implementation of the ongoing control measures, preliminary modeling indicates that the Air Basin will attain the one-hour ozone standard before the final attainment year of 2022 and without relying on long-term measures under the federal CAA Section 182(e)(5) (San Joaquin Valley Air Pollution Control District, 2013).

On June 19, 2014, the Governing Board adopted the 2014 Reasonably Available Control Technology Demonstration for the 8-Hour Ozone State Implementation Plan (SJVAPCD, 2014) that includes a demonstration that the SJVAPCD rules implement RACT. The plan reviews each of the NOx reduction rules and concludes that they satisfy requirements for stringency, applicability, and enforceability, and meet or exceed RACT. The plan's analysis of further ROG reductions through modeling and technical analyses demonstrates that added ROG reductions will not advance the Air Basin's ozone attainment. Each ROG rule evaluated in the 2009 RACT SIP has been subsequently approved by the USEPA as meeting RACT within the last two years. The ozone attainment strategy, therefore, focuses on further NOx reductions.

SJVAPCD adopted the 2016 Ozone Plan for the 2008 8-Hour Ozone Standard in June 2016. This plan satisfies CAA requirements and ensures expeditious attainment of the 75 parts per billion eight-hour ozone standards.

PARTICULATE MATTER PLANS

In June 2007, the SJVAPCD Board adopted the 2007 *PM_{10} Maintenance Plan and Request for Redesignation* (San Joaquin Valley Air Pollution Control District, 2007b). This plan demonstrates how PM_{10} attainment in the Air Basin will be maintained in the future. Effective November 12, 2008, USEPA redesignated the Air Basin to attainment for the PM_{10} NAAQS and approved the *2007 PM_{10} Maintenance Plan* (San Joaquin Valley Air Pollution Control District, 2007)

In April 2008, the Air Basin Board adopted the 2008 $PM_{2.5}$ Plan and approved amendments to Chapter 6 of the 2008 $PM_{2.5}$ Plan on June 17, 2010 (San Joaquin Valley Air Pollution Control District, 2013). This plan was designed to address USEPA's annual $PM_{2.5}$ standard of 15 $\mu g/m^3$, which was established by USEPA in 1997. In December of 2012, the SJVAPCD adopted the 2012 $PM_{2.5}$ Attainment Plan, which addresses USEPA's 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$, which was established by USEPA in 2006. In April 2015, the SJVAPCD Board adopted

the 2015 Plan for the 1997 $PM_{2.5}$ Standard that addresses the USEPA's annual and 24-hour $PM_{2.5}$ standards established in 1997 after the Air Basin experienced higher $PM_{2.5}$ levels in winter 2013–2014 due to the extreme drought, stagnation, strong inversions, and historically dry conditions, and the SJVAPCD was unable to meet the initial attainment date of December 31, 2015.

SJVAPCD adopted the 2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard on September 15, 2016. This plan addresses the USEPA federal annual $PM_{2.5}$ standard of 12 micrograms per cubic meter (µg/m3), established in 2012. This plan includes an attainment impracticability demonstration and request for reclassification of the Valley from Moderate nonattainment to Serious nonattainment.

SJVAPCD adopted the 2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards in November 2018. This plan addresses the USEPA federal 1997 annual $PM_{2.5}$ standard of 15 µg/m3 and the 24-hour $PM_{2.5}$ standard of 65 µg/m3; the 2006 24-hour $PM_{2.5}$ standard of 35 µg/m3; and the 2012 annual $PM_{2.5}$ standard of 12 µg/m3. The plan demonstrates attainment of the federal $PM_{2.5}$ standards as expeditiously as practicable as required under the federal CAA (San Joaquin Valley Air Pollution Control District, 2018)

Criteria Pollutant Emissions

Annual Significance Thresholds. To assess air quality impacts, the Air District has established significance thresholds to assist Lead Agencies in determining whether a project may have a significant air quality impact. The Air District's thresholds of significance for criteria pollutants, which are based on Air District Rule 2201 (New and Modified Stationary Source Review) offset thresholds. According to the Air District's Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), "The District identifies thresholds that separate a project's short-term emissions from its long-term emissions. The short-term emissions are mainly related to the construction phase of a project and are recognized to be short in duration. The long-term emissions are mainly related to the activities that will occur indefinitely as a result of project operations." SJVAPCD has two sets of significance thresholds for each pollutant for operational emissions depending on whether the activities are for permitted equipment and activities or non-permitted equipment and activities. The SJVAPCD GAMAQI thresholds are designed to implement the general criteria for air quality emissions as required in the CEQA Guidelines, Appendix G, Paragraph III (Title 14 of the California Code of Regulations §15064.7) and CEQA (California Public Resources Code Sections 21000 et. al). SJVAPCD's specific CEQA air quality thresholds are presented in Table 3.1-4.

SJVAPCD – Rules and Regulations Applicable to Dairies

The SJVAPCD is responsible for establishing and enforcing local air quality rules and regulations that address requirements of federal and state air pollution laws. The proposed project may include equipment and activities subject to regulatory requirements imposed under the following rules and regulations.

Table 3.1-4
SJVAPCD Air Quality Significance Thresholds – Criteria Pollutants

Criteria Pollutant	Significance Level	
	Construction	Operations
CO	100 tons/yr	100 tons/yr
NOx	10 tons/yr	10 tons/yr
ROG	10 tons/yr	10 tons/yr
SOx	27 tons/yr	27 tons/yr
PM_{10}	15 tons/yr	15 tons/yr
$PM_{2.5}$	15 tons/yr	15 tons/yr

Source: Appendix A

RULE 2010

Rule 2010 requires that an Authority to Construct (ATC) permit (a "new source review" permit) and a Permit to Operate (PTO) be obtained prior to constructing, altering, replacing or operating any device which emits or may emit air contaminants.

RULE 2020

This rule specifies criteria that emission units must meet in order to be exempt from District permit requirements. The rule also specifies the recordkeeping requirements to verify the exemption and outlines the compliance schedule for emission units that lose the exemption after installation. This rule applies to any source that emits or may emit air contaminants.

RULE 2070

This rule sets forth the standards that must be met in order for a permit to be issued by the Air District. The rule applies to any activity required to obtain a permit according to Rule 2010 (Permits Required).

RULE 2201

The stated purpose of Rule 2201 is to provide for the review of new and modified stationary sources of air pollution and to provide mechanisms including emission trade-offs by which authority to construct such sources may be granted without interfering with the attainment or maintenance of ambient air quality standards. The SJVAPCD new source review rule (NSR) applies to all new stationary sources and all modifications to existing stationary sources which are subject to District permit requirements. The rule generally requires that new or modified equipment include best available control technology (BACT) and the emission increase above specified thresholds be offset.

RULE 3190

The purpose of this rule is to recover the District's costs for the review and management of Conservation Management Practices (CMP) Applications and Plans required by Rule 4550 (Conservation Management Practices).

RULE 4101

This rule prohibits the emissions of visible air contaminants to the atmosphere. The rule applies to any source operation which emits or may emit air contaminants.

RULE 4102

The rule applies to any source operation which emits or may emit air contaminants or other materials. It prohibits the discharge from any source whatsoever emissions of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public; or which endanger the comfort, repose, health or safety of any such person or the public; or which cause or have a natural tendency to cause injury or damage to business or property.

RULE 4201

This rule establishes a particulate matter emission standard. It applies to any source operation which emits or may emit dust, fumes, or total suspended particulate matter. The rule prohibits the release or discharge into the atmosphere from any single source operation, dust, fumes, or total suspended particulate matter emissions in excess of 0.1 grain per cubic foot of gas at dry standard conditions.

RULE 4311

The purpose of this rule is to limit the emissions of volatile organic compounds (VOC) and oxides of nitrogen (NOx) from the operation of flares. This rule sets forth design, operational and test requirements for flares.

Note: This rule would be applicable if digesters are required and excess biogas is flared. The proposed Project does not intend to flare the biogas. Gases are being captured, cleaned and used for electrical energy production.

RULE 4550

The purpose of this rule is to limit fugitive dust emissions from agricultural operation sites. It applies to agricultural operation sites located within the San Joaquin Valley Air Basin.

RULE 4565

The provisions of this rule apply to all facilities whose throughput consists entirely or in part of biosolids, animal manure, or poultry litter and the operator who landfills, land applies, composts, or co-composts these materials.

Note: This project is exempt from Rule 4565 as per Rule 4565, Section 4.0 Exemptions, 4.1 - Facilities subject to Rule 4570 or facilities that are specifically exempt under Section 4.0 of Rule 4570.

RULE 4570

The purpose of this rule is to limit emissions of volatile organic compounds (VOC) from Confined Animal Facilities (CAF).

RULE 4623

The purpose of this rule is to limit emissions of volatile organic compounds (VOC) from the storage of organic liquids.

RULE 4641

This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

RULE 8011

The purpose of this rule is to reduce ambient concentrations of particulate matter (PM_{10}) by requiring actions to prevent, reduce or mitigate fugitive dust emissions. The rules contained in Rule 8011 have been developed pursuant to United States Environmental Protection Agency guidance for serious PM_{10} nonattainment areas. The rules are applicable to specified anthropogenic fugitive dust sources.

RULE 8021

This rule limits fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities. This rule applies to any such activity and other earthmoving activities, including, but not limited to, land clearing, grubbing, scraping, travel on site, and travel on access roads to and from the site. Prior to the start of construction activities at the dairy facility site, the owner/operator will be required to file a Dust Control Plan with the SJVAPCD in accordance with Section 6.3 of Rule 8021.

RULE 8031

The rule applies to the outdoor handling, storage, and transport of any bulk material.

RULE 8041

This rule limits fugitive dust emissions from carryout and trackout. The rule applies to all sites that are subject to any of the following rules where carryout or trackout has occurred or may occur on paved public roads or the paved shoulders of a paved public road: Rules 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities), 8031 (Bulk Materials), 8061 (Paved and Unpaved Roads), and 8071 (Unpaved Vehicle and Equipment Traffic Areas).

RULE 8051

The purpose of this rule is to limit fugitive dust emissions from open areas. This rule applies to any open area having 0.5 acres or more within urban areas, or 3.0 acres or more within rural areas; and contains at least 1,000 square feet of disturbed surface area.

RULE 8061

This rule limits fugitive dust emissions from paved and unpaved roads by implementing control measures and design criteria. This rule applies to any new or existing public or private paved or unpaved road, road construction project, or road modification project.

RULE 8071

The purpose of this rule is to limit fugitive dust emissions from unpaved vehicle and equipment traffic areas. This rule applies to any unpaved vehicle/equipment traffic area.

RULE 8081

The purpose of this rule is to limit fugitive dust emissions from agricultural sources. This rule applies to off-field agricultural sources.

Thresholds for Ambient Air Quality Impacts

CEQA Guidelines – Appendix G (Environmental Checklist) states that a project that would "violate any air quality standard or contribute substantially to an existing or projected air quality violation" would be considered to create significant impacts on air quality. Therefore, an AQIA should determine whether the emissions from a project would cause or contribute significantly to violations of the NAAQS or CAAQS (presented above in Table 3.1-2) when added to existing ambient concentrations.

The EPA has established the federal Prevention of Significant Deterioration (PSD) program to determine what comprises "significant impact levels" (SIL) to NAAQS attainment areas. A project's impacts are considered less than significant if emissions are below PSD SIL for a particular pollutant. When a SIL is exceeded, an additional "increment analysis" is required. As the Project would not include modification to the stationary source under NSR, it would not be subject to either PSD or NSR review. The PSD SIL thresholds are used with ambient air quality modeling for a CEQA project to address whether the Project would "violate any

air quality standard or contribute substantially to an existing or projected air quality violation." Ambient air quality emissions estimates below the PSD SIL thresholds would result in less than significant ambient air quality impacts on both a project and cumulative CEQA impact analysis. The SJVAB is classified as non-attainment for the O_3 NAAQS and, as such, is subject to "non-attainment new source review" (NSR). PSD SILs and increments are more stringent than the CAAQS or NAAQS and represent the most stringent thresholds of significance.

Thresholds for Hazardous Air Pollutants

The SJVAPCD's GAMAQI states, "From a health risk perspective there are basically two types of land use projects that have the potential to cause long-term public health risk impacts:

- Type A Projects: Land use projects that will place new toxic sources in the vicinity of existing receptors, and
- Type B Projects: Land use projects that will place new receptors in the vicinity of existing toxics sources" (Appendix A).

Table 3.1-5 presents the thresholds of significance uses with toxic air contaminants when evaluating hazardous air pollutants (HAPs).

Table 3.1-5
Federal & California Standards

Agency	Level	Description
Significance Thresholds Adopted for the Evaluation of Impacts Under CEQA		
SJVAPCD	Carcinogens	Maximally Exposed Individual risk **equals or exceeds** 20 in one million.
	Non-Carcinogens	**Acute**: Hazard Index **equals or exceeds** 1 for the Maximally Exposed Individual. **Chronic**: Hazard Index **equals or exceeds** 1 for the Maximally Exposed Individual.

Source: Appendix A

Both the state of California and the federal government have established ambient air quality standards for several different criteria air pollutants, a summary of which is shown in Table 3.1-6. For some pollutants, separate standards have been set for different time periods. Most standards have been set to protect public health. For other pollutants, standards have been based on some other value (such as protection of crops, protection of materials, or avoidance of nuisance conditions).

Table 3.1-6
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	National Standards[a]	California Standards[b]
Ozone (O_3)	8 Hours	0.070 ppm (137 µg/m^3)[c]	0.070 ppm (137 µg/m^3)
	1 Hour	--[d]	0.09 ppm (180 µg/m^3)
Carbon Monoxide (CO)	8 Hours	9 ppm (10 mg/m^3)	9.0 ppm (10 mg/m^3)
	1 Hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO_2)	Annual Average	0.053 ppm (100 µg/m^3)	0.030 ppm (56 µg/m^3)
	1 Hour	100 ppb (188.68 µg/m^3)	0.18 ppm (338 µg/m^3)
Sulfur Dioxide (SO_2)	3 Hour	0.5 ppm (1,300 µg/m^3)	--
	24 Hours	0.14 ppm (365 µg/m^3)	0.04 ppm (105 µg/m^3)
	1 Hour	75 ppb (196 µg/m^3)	0.25 ppm (655 µg/m^3)
Particulate Matter (PM_{10})	Annual Arithmetic Mean	--[e]	20 µg/m^3
	24 Hours	150 µg/m^3	50 µg/m^3
Particulate Matter—Fine ($PM_{2.5}$)	Annual Arithmetic Mean	12.0 µg/m^3	12 µg/m^3
	24 Hours	35 µg/m^3	--
Sulfates (SO_4)	24 Hours	--	25 µg/m^3
Lead[f] (Pb)	Rolling Three Month Average	0.15 µg/m^3	--
	30-day Average	--	1.5 µg/m^3
Hydrogen Sulfide (H_2S)	1 Hour	--	0.03 ppm (42 µg/m^3)
Vinyl Chloride (chloroethene)	24 Hours	--	0.01 ppm (26 µg/m^3)
Visibility-Reducing Particles (VRPs)	8 Hours	--	--[g]

ppm = parts per million; ppb = parts per billion; mg/m^3 = milligrams per cubic meter; µg/m^3= micrograms per cubic meter.
[a] The National Ambient Air Quality Standards (NAAQS), other than O_3 and those based on annual averages, are not to be exceeded more than once a year. The O_3 standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than 1. The National Primary Standards, which reflect the levels of air quality necessary, with an adequate margin of safety to protect the public health, are presented.
[b] The California Ambient Air Quality Standards (CAAQS) for O_3, CO, SO_2 (1-hour and 24-hour standards), NO_2, PM_{10}, and $PM_{2.5}$ are values not to be exceeded. All other California standards shown are values not to be equaled or exceeded.

3.1.4 - PROJECT RELATED EMISSIONS AND HEALTH EFFECTS

Project impacts will be evaluated both on the basis of CEQA criteria and SJVAPCD significance criteria. The impacts to be evaluated will be those involving construction and operational emissions of pollutants: particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$); nitrogen oxides (NOx) and volatile organic compounds (VOCs), both precursors to ozone; methane; ammonia and hydrogen sulfide, (odors); carbon monoxide; greenhouse gases; and cumulative air quality impacts.

Criteria Pollutants

California is a diverse state with many sources of air pollution. Sources of air pollutants include stationary sources (facilities), area-wide sources, mobile sources, and natural sources. Emissions from area-wide sources may be either from small individual sources, such as residential fireplaces, or from widely distributed sources that cannot be tied to a single location, such as consumer products and dust from unpaved roads. Mobile sources

include on-road cars, trucks, and buses and other sources such as boats, off-road recreational vehicles, aircraft, and trains. Natural sources include geogenic and biogenic hydrocarbon emissions, natural wind-blown dust, and wildfires. The general characteristics and health effects of air pollutants emitted by project equipment and pollutants known to exist in the project area are summarized below.

OZONE (O_3)

The most severe air quality problem in the San Joaquin Valley is high concentrations of O_3. High levels of O_3 cause eye irritation and can impair respiratory functions. High levels of O_3 can also affect plants and materials. Grapes, lettuce, spinach, and many types of garden flowers and shrubs are particularly vulnerable to O_3 damage. O_3 is not emitted directly into the atmosphere but is a secondary pollutant produced through photochemical reactions involving hydrocarbons and nitrogen oxides (NOx). Significant O_3 generation requires about one to three hours in a stable atmosphere with strong sunlight. For this reason, the months of April through October comprise the "ozone season." O_3 is a regional pollutant because O_3 precursors are transported and diffused by wind concurrently with the reaction process.

Health Effects: Ozone exposure may cause eye irritation and damage to lung tissue in humans. Ozone also harms vegetation, reduces crop yields, and accelerates deterioration of paints, finishes, rubber products, plastics, and fabrics. Documented the adverse health effects of ozone with respect to respiratory disease, and the increase in such effects with respect to asthmatics, children and the elderly.

SUSPENDED PARTICULATE MATTER (PM_{10} AND $PM_{2.5}$)

Both State and federal particulate standards now apply to particulates under 10 microns (PM_{10}) rather than to total suspended particulate, which includes particulates up to 30 microns in diameter. Continuing studies have shown that the smaller-diameter fraction of TSP represents the greatest health hazard posed by the pollutant; therefore, EPA has recently established NAAQS for $PM_{2.5}$. The project area is classified as attainment for PM_{10} and non-attainment for $PM_{2.5}$ for NAAQS.

Particulate matter consists of particles in the atmosphere resulting from many kinds of dust and fume-producing industrial and agricultural operations, from combustion, and from atmospheric photochemical reactions. Natural activities also increase the level of particulates in the atmosphere; wind-raised dust and ocean spray are two sources of naturally occurring particulates. The largest sources of PM_{10} and $PM_{2.5}$ in Kings County are vehicle movement over paved and unpaved roads, demolition and construction activities, farming operations, and unplanned fires. PM_{10} and $PM_{2.5}$ are considered regional pollutants with elevated levels typically occurring over a wide geographic area. Concentrations tend to be highest in the winter, during periods of high atmospheric stability and low wind speed. In the respiratory tract, very small particles of certain substances may produce injury by themselves or may contain absorbed gases that are injurious. Particulates of aerosol size suspended in the air can both scatter and absorb sunlight, producing haze and reducing visibility. They can also cause a wide range of damage to materials.

Health Effects: Respirable Particulate Matter (PM_{10}) is inhaled into, and lodges in, the deepest parts of the lung, evading the respiratory system's natural defenses. In high concentrations effects on humans include aggravation of chronic disease and heart/lung disease symptoms. Non-health effects include reduced visibility and soiling of surfaces.

Recent epidemiologic studies have contributed to understanding the size specificity of health effects, and have increasingly implicated the gases and smaller particles as the more relevant components of hazardous particulate exposure.

Fine Particulate Matter ($PM_{2.5}$) health effects are similar to those of PM_{10}; they can impair proper lung function and may contribute to the development of chronic bronchitis. They are a health concern because they easily reach the deepest recesses of the lungs. Scientific studies have linked particulate matter (alone or in combination with other air pollutants) with a series of health problems, including premature death, respiratory related hospital admissions or emergency room visits, aggravated asthma, chronic bronchitis, decrease in lung functions, and work and school absences. Those who are most at risk are the elderly, individuals with preexisting heart and lung disease, children, and people with asthma.

CARBON MONOXIDE (CO)

Ambient CO concentrations normally correspond closely to the spatial and temporal distributions of vehicular traffic. Relatively high concentrations of CO would be expected along heavily traveled roads and near busy intersections. Wind speed and atmospheric mixing also influence CO concentrations; however, under inversion conditions prevalent in the San Joaquin Valley, CO concentrations may be more uniformly distributed over a broad area.

Internal combustion engines, principally in vehicles, produce CO due to incomplete fuel combustion. Various industrial processes also produce CO emissions through incomplete combustion. Gasoline-powered motor vehicles are typically the major source of this contaminant. CO does not irritate the respiratory tract but passes through the lungs directly into the blood stream, and by interfering with the transfer of fresh oxygen to the blood, deprives sensitive tissues of oxygen, thereby aggravating cardiovascular disease, causing fatigue, headaches, and dizziness. CO is not known to have adverse effects on vegetation, visibility, or materials

Health Effects: Carbon monoxide's (CO) health effects are related to its affinity for hemoglobin in the blood. At high concentrations, carbon monoxide reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity and impaired mental abilities.

NITROGEN OXIDES (NOX INCLUDES NO_2) AND HYDROCARBONS

Kings County has been designated as an attainment area for the NAAQS for NO_2. NO_2 is the "whiskey brown" colored gas readily visible during periods of heavy air pollution. Mobile sources and oil and gas production account for nearly all of the county's NOx emissions, most of which is emitted as NO_2. Combustion in motor vehicle engines, power plants, refineries,

and other industrial operations are the primary sources in the region. Railroads and aircraft are other potentially significant sources of combustion air contaminants. Oxides of nitrogen are direct participants in photochemical smog reactions. The emitted compound, nitric oxide, combines with oxygen in the atmosphere in the presence of hydrocarbons and sunlight to form NO_2 and O_3. NO_2, the most significant of these pollutants, can color the atmosphere at concentrations as low as 0.5 ppm on days of 10-mile visibility. NOx is an important air pollutant in the region because it is a primary receptor of ultraviolet light, which initiates the reactions producing photochemical smog. It also reacts in the air to form nitrate particulates.

Motor vehicles are the major source of reactive hydrocarbons in the basin. Other sources include evaporation of organic solvents and petroleum production and refining operations. Certain hydrocarbons can damage plants by inhibiting growth and by causing flowers and leaves to fall.

Health Effects: Nitrogen oxides increase risk of acute and chronic respiratory disease. Short-term exposures (e.g., less than 3 hours) to low levels of NO_2 may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory illnesses. Long-term exposures to NO_2 may lead to increased susceptibility to respiratory infection and may cause irreversible alterations in lung structure. These exposures may also increase respiratory illnesses in children.

Levels of hydrocarbons currently measured in urban areas are not known to cause adverse effects in humans. However, certain members of this contaminant group are important components in the reactions, which produce photochemical oxidants.

LEAD (PB) AND SUSPENDED SULFATE

Ambient Pb levels have dropped dramatically due to the increase in the percentage of motor vehicles that run exclusively on unleaded fuel. Ambient Pb levels in Fresno are well below the ambient standard and are expected to continue to decline. Suspended sulfate levels have stabilized to the point where no excesses of the State standard are expected in any given year.

Health Effects: Lead enters the body through contaminated inhalation, soil, water, dust, paint, and food. Lead particles small enough to be inhaled into the lungs are easily absorbed into the blood and circulated throughout the body. The most important target is the brain. Even low levels of lead exposure can increase blood pressure and permanently lower children's IQ. Higher levels can cause anemia.

HYDROGEN SULFIDE (H_2S)

Hydrogen sulfide is a colorless, irritating gas with a “rotten egg” smell and is generated by the anaerobic decomposition of manure. It is naturally emitted in geothermal areas and is also associated with certain industrial processes such as oil refineries, sewage treatment plants, and confined animal facilities. There is a State ambient air quality standard for

hydrogen sulfide but no corresponding national standard. Concentrations of this pollutant are not monitored within the San Joaquin Valley Air Basin.

Health Effects: Hydrogen sulfide (H_2S) has a distinct odor and can cause dizziness, nausea, irritation of eyes, nose, or throat, and headaches at low concentrations. Exposure to higher concentrations (above 100 parts per million [ppm]), can cause olfactory fatigue, respiratory paralysis, and death. Brief exposures to high concentrations of hydrogen sulfide (greater than 500 ppm) can cause a loss of consciousness. In most cases, the person appears to regain consciousness without any other effects. No health effects have been found in humans exposed to typical environmental concentrations of hydrogen sulfide (0.00011 – 0.00033 ppm).

SULFUR DIOXIDE (SO_2)

Kings County has been designated as an attainment area for the NAAQS for SO_2. SO_2 is the primary combustion product of sulfur or sulfur containing fuels. Fuel combustion is the major source of this pollutant, while chemical plants, sulfur recovery plants, and metal processing facilities are minor contributors. Gaseous fuels (natural gas, propane, etc.) typically have lower percentages of sulfur containing compounds than liquid fuels such as diesel or crude oil. SO_2 levels are generally higher in the winter months. Decreasing levels of SO_2 in the atmosphere reflect the use of natural gas in power plants and boilers.

Health Effects: High concentrations of SO_2 can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposures of asthmatic individuals to elevated SO_2 levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of SO_2, in conjunction with high levels of PM, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO_2 also is a major precursor to $PM_{2.5}$, which is a significant health concern, and a main contributor to poor visibility (see also the discussion of health effects of particulate matter).

SULFATES (SO_4)

Sulfates are the fully oxidized ionic form of sulfur. They occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide (SO_2) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

Health Effects: Contributes to respiratory illness, particularly in children and the elderly and aggravates existing heart and lung diseases.

Other Air Pollutants

VOLATILE ORGANIC COMPOUNDS (VOC)

These volatile gases, also known as reactive organic gases, are hydrocarbon leftovers emitted into the air when fossil fuels don't burn completely. VOCs are emitted by vehicles, manufacturing and consumer products including hair sprays, engine degreasers, anti-perspirants and deodorants, air fresheners, windshield washer fluids, charcoal light fluid, and household cleaners. In California, consumer products account for new emissions equal to 20 million new cars driving 10,000 miles each year (Clean Air Primer, SVJAPCD, 2007). In the atmosphere, when sunlight, VOCs, nitrogen oxides and oxygen are mixed together, a new chemical combination is formed, ozone, which is the major ingredient of smog. At dairies, VOCs are emitted from the degradation of organic matter in manure.

Health Effects: As a component of ozone, the health effects are the same.

METHANE (CH_4)

Methane is an odorless greenhouse gas that absorbs and reflects terrestrial radiation back to the earth. The recent phenomenon of rising temperatures reportedly related to greenhouse gases is known popularly as global warming. Methane is emitted into the environment from various sources including ruminant livestock and manure decomposition. Methane released from domesticated ruminant livestock accounts for about 30 percent (about 80 million metric tons per year) of the anthropogenic methane generated in the United States (U.S. EPA, Final Report on U.S. Methane Emissions 1990-2020: Inventories, Projections, and Opportunities for Reduction, EPA 430-R-99-013, September 1999). It is highly flammable and may form explosive mixtures with air.

Methane generation from ruminant animals is influenced by feed quality, essential nutrients in the feed, quantitative feeding level and feed schedule and animal health. Methane is released through the animal's mouth, nostrils and digestive system (approximately 70 percent per Inventory of U.S. Greenhouse Gas Emissions and Sinks - 1990-2006) and from anaerobic decomposition of livestock manure, (approximately 23 percent ibid). Of the major greenhouse gases, methane has a relatively short lifespan in the atmosphere. Removal from the atmosphere occurs due to chemical reactions in the atmosphere, as well as from microbial uptake by soils.

There are no state or national ambient air quality standards for methane, and it is not considered a precursor of any other pollutant. Regulatory requirements for the reduction of control of methane emissions have not been established on the Federal, State, or local levels. However, EPA prepares methane emission source inventories as required by the CAA amendments. The five major anthropogenic sources of methane in the United States have been identified to be (in order of contribution): landfills, domesticated livestock, natural gas and oil production, coal mining, and livestock manure (Appendix A). Methane has been determined to be the second most significant greenhouse gas that reportedly contributes to global warming, the first being CO_2.

Health Effects: Methane is not toxic. It may displace oxygen in an enclosed space and asphyxia may result if the oxygen concentration is reduced below 19.5 percent.

CARBON DIOXIDE (CO_2)

Carbon dioxide is an odorless, colorless gas. Natural sources include: decomposition of dead organic matter; respiration of humans, bacteria, plants, animals and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (human caused) sources included burning coal, oil, natural gas and wood. It has been identified as a potential greenhouse gas. No emissions criteria have been established to date.

Health Effects: When inhaled at high concentrations, CO_2 produces a sour taste in the mouth and a stinging sensation in the nose and throat. If inhaled at high concentrations, it can cause asphyxiation.

Toxic Air Contaminants (TAC)

Toxic air contaminants are defined as air pollutants which may cause or contribute to an increase in mortality or serious illness, or which may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air. However, high toxicity may pose a threat to public health even at very low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts may not be expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the State and federal governments have set ambient air quality standards.

The CARB maintains the California Toxics Inventory (CTI) which provides emission estimates by stationary source, area source, mobile source and natural sources for 33 toxic compounds. The compounds included in the inventory were selected based on a list of air toxics used by the United States Environmental Protection Agency (EPA) in conducting the National Air Toxics Assessment (NATA). In developing the NATA list, the EPA considered a number of factors, including toxicity-weighted emissions, monitoring data, past air quality modeling analysis, and review of existing risk assessment literature.

Sensitive Receptors

One of the criteria for significance includes potential impacts on sensitive receptors. The SJVAPCD GAMAQI, defines a sensitive receptor as a location where human populations, especially children, seniors, and sick persons are present and where there is a reasonable expectation of continuous human exposure to pollutants. Sensitive receptors normally refer to land uses with heightened sensitivity to localized pollutants. Examples include emissions of criteria or toxic air pollutants that have health effects and to a lesser extent odors or odorous compounds such as ammonia and H_2S.

The term "sensitive receptor" does not have a distance associated with it; its "sensitivity" is a function of the land use and not necessarily the presence or lack of nearby sources.

SJVAPCD CEQA guidance does offer some "screening" distances between various sources and sensitive receptors, but these are useful only for determining when no analysis is required, not for determining significance of impacts. For example, the SJVAPCD "screening" distance for a dairy is given as one mile; beyond that distance further study per Section 5 of GAMAQI need not be undertaken.

An expansion of an existing dairy in Kings County can be accomplished through the site plan review (SPR) process as long as the expanded portion of the dairy is consistent with the standards adopted in the *Dairy Element* concerning design, operation monitoring and reporting. One of the design standards for a dairy expansion is *Policy DE 3.1c:*

> *When nearby rural residences that are not associated with the dairy are within one-quarter (1/4) mile of a proposed expansion of an existing Dairy Facility, the new improvements of the Dairy Facility shall be located so that the existing separation shall not be reduced.*

The High Roller Dairy owner/operator proposes to expand a portion of the dairy facility to include a covered, lined anaerobic lagoon digester that is approximately 1,194 feet from the nearest non-dairy associated residence. Figure 2-3 shows the dairy facility site and the locations of the proposed digester and other structures.

3.1.5 - IMPACT EVALUATION CRITERIA

CEQA criteria for evaluating adverse impacts on air quality are:

Would the project:

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?*

Agricultural operations can result in emissions of materials that are defined as pollutants. For this reason, the SJVAPCD's standards for determining when a proposed source's project-level emissions are "significant" for the purposes of *CEQA* is used, although these standards are generally not associated with agricultural sources and estimates of emissions levels from agricultural sources vary widely.

The SJVAPCD's standards of significance for use in *CEQA* documents are contained in *Guide for Assessing and Mitigating Air Quality Impacts*, (Sections 4.3.1 and 4.3.2, pages 24 to 28) (San Joaquin Valley Air Pollution Control District, 2015).

The California Supreme Court's most recent CEQA decision on the Newhall Ranch development case, Center for Biological v. California Department of Fish and Wildlife

(November 30, 2015, Case No. 217763), determined that the project's Environmental Impact Report (EIR) did not substantiate the conclusion that the GHG cumulative impacts would be less than significant. The EIR determined that the Newhall Ranch development project would reduce GHG emissions by 31 percent from business as usual (BAU). This reduction was compared to the California's target of reducing GHG emissions statewide by 29 percent from business as usual. The Court determined that "the EIR's deficiency stems from taking a quantitative comparison method developed by the Scoping Plan as a measure of the greenhouse gas reduction effort required by the state as a whole, and attempting to use that method, without adjustments, for a purpose very different from its original design." In the Court's final ruling it offered suggestions that were deemed appropriate use of the BAU methodology:

- Lead agencies can use the comparison to BAU methodology if they determine what reduction a particular project must achieve in order to comply with statewide goals;
- Project design features that comply with regulations to reduce emissions may demonstrate that those components of emissions are less that significant; and
- Lead agencies could also demonstrate compliance with locally adopted climate plans, or could apply specific numerical thresholds developed by some local agencies.

As discussed, the SJVAPCD, a CEQA Trustee Agency for this Project, has developed thresholds to determine significance of a proposed project – either implement Best Performance Standards or achieve a 29 percent reduction from BAU (a specific numerical threshold). Therefore the 29 percent reduction from BAU is applied to the subject Project in order to determine significance. Therefore, the GHG analysis for this Project follows the suggestions from the Court's ruling on the Newhall Ranch development project in order to determine significance using the project design features.

DISCUSSION

Impact #3.1a – Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The proposed Project includes the construction of a lined and covered anaerobic lagoon digester, ancillary infrastructure and additional corrals, barns and stalls. No increase in the number of cows is proposed. Short-term emissions are primarily from the construction phase of a project and would have temporary impacts on air quality. The Project construction emissions were based on the construction equipment listed in the Project description as well as similar projects consisting of digesters and large animal shelters such as barns and stalls. The use of CalEEMod default equipment lists were also used accordingly for the proposed Project's land use type and development intensity. Applying Project assumptions and model defaults, construction emissions were estimated based on the estimated construction schedule.

The digestor construction is expected to last approximately six months and the animal housing structures construction is expected to last two months. Construction is expected to

occur simultaneously. All estimated emission totals are conservative and a reasonable and legally sufficient estimate of potential impacts.

SJVAPCD's required measures for all projects were also applied:

- Water exposed area 3 times per day; and
- Reduce vehicle speed to less than 15 miles per hour.

Table 3.1-7 presents the Project's short-term emissions based on the anticipated construction period.

Table 3.1-7
SJVAPCD Air Quality Significance Thresholds – Criteria Pollutants

Emissions Source	Pollutant (tons/year)					
	ROG	NOx	CO	SO_2	PM_{10}	$PM_{2.5}$
Unmitigated						
2020	0.0972	0.2985	0.7760	0.0015	0.0584	0.0478
Mitigated						
2020	0.0972	0.2985	0.7760	0.0015	0.0578	0.0475
Significance Threshold	**10**	**10**	**100**	**27**	**15**	**15**
Is Threshold Exceeded For a Single Year After Mitigation?	No	No	No	No	No	No

Source: Appendix A

As calculated with CalEEMod, the estimated short-term construction-related emissions would not exceed SJVAPCD significance threshold levels during a given year and would therefore be *less than significant*.

Long-term emissions are caused by operational mobile, area, and stationary sources. There are no proposed increases the herd size, employees, equipment or truck trips at the proposed Project site. Since the Project is not proposing a change in operational conditions other than operating the new digestor, the Project operations would not generate any additional criteria pollutant emissions or GHG emissions greater than current activities. The digestor will actually reduce VOC emissions from the Project site since the biogas will be collected and transported off-site via pipeline to generate electricity. Therefore, operational emissions are not required to be evaluated further and are also considered to be a less than significant impact.

CONCLUSION

The Project will generate minimal emissions during short term construction activities. Once operational, the Project would reduce the number of VOCs and odors. Therefore, the Project is consistent with the applicable Air Quality Plans. The Project will not have a more severe adverse impact than discussed in the prior certified EIR.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant.*

Impact #3.1b – 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?

As noted in Response to Impact #3.1a, above, during construction the Project would generate minimal emissions that are well below adopted thresholds. Once operational, the Project would not generate either $PM_{2.5}$ or PM_{10} emissions beyond what is considered baseline. Impacts of the proposed Project are less than significant.

CONCLUSION

As documented in the AQIA prepared for the Project, construction related construction vehicle exhaust emissions are negligible and well under adopted SJVAPCD thresholds. The Project would comply with all applicable SJVPACD rules and regulations. Once operational, the dairy will continue to operate under baseline conditions. No new sources of criteria pollutants, including fugitive dust are anticipated. The Project will not have a more severe adverse impact than discussed in the prior certified EIR.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant.*

Impact #3.1c– Would the Project expose sensitive receptors to substantial pollutant concentrations?

See also, response to Impact #3.1a. Site preparation and facilities construction activity emissions have been estimated based on typical construction equipment, construction employment, and construction duration. The results of this calculation are shown in Table 3.1-7, expressed in tons per year. Impacts related to emissions of criterial pollutants are less than significant.

Health Risks

HAPS

GAMAQI recommends that Project that may introduce a new or modified source of hazardous air pollutants (HAPs) is proposed for a location near an existing residential area or other sensitive receptor when evaluating potential impacts related to HAPs. HAPs and toxic air contaminants generated from long term exposure are considered; short term emissions are not considered health risks. Typical sources of HAPs include diesel trucks or permitted sources such as engines, boilers or storage tanks. There will no increase in operational HAP emissions at the Project site, therefore, no further analysis is required to determine the HAPs impacts from this project and potential risk to the population attributable to emissions of HAPs from the proposed Project would be *less than significant*.

AIRBORNE FUNGUS (VALLEY FEVER)

Coccidioidomycosis, often referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever most commonly affects people who live in hot dry areas with alkaline soil and varies with the season. This disease, which affects both humans and animals, is caused by inhalation of arthroconidia (spores) of the fungus *Coccidioides immitis* (CI). CI spores are found in the top few inches of soil and the existence of the fungus in most soil areas is temporary. The cocci fungus lives as a saprophyte in dry, alkaline soil. The CI fungal spores are often found in the soil around rodent burrows, Indian ruins, and burial grounds. The spores become airborne when the soil is disturbed by winds, construction, farming and soil disturbing activities.

The Project would be required to comply with Rule 8021 Section 6.3, which requires applicants to develop, prepare, submit, obtain approval of, and implement a Dust Control Plan, which would reduce fugitive dust impacts to less than significant for all construction phases of the Project. Compliance with this rule would also control the release of the *Coccidioides immitis* fungus from construction activities.

CONCLUSION

The Project does not include long term activities that would generate HAPs or other The Project would comply with all applicable Kings County Dairy Element Policies and requirements, and SJVPACD rules and regulations, including those that reduce fugitive dust emissions during construction. The Project is not anticipated to introduce new source of health risks. The Project will not have a more severe adverse impact than discussed in the prior certified EIR.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant.*

Impact #3.1d – Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Because offensive odors rarely cause any physical harm and no requirements for their control are included in State or federal air quality regulations, the SJVAPCD has no rules or standards related to odor emissions, other than its nuisance rule.

Section 4.2 of the Dairy Element EIR notes that when the EIR was prepared there were no anaerobic digesters in Kings County (County of Kings, 2002). However, the EIR noted that the use of dairy digester provided an efficient and effective way to deal with the volatile solids found in manure, and the gaseous compounds generated during decomposition of those solids. The release of methane, reactive organic gases, hydrogen sulfide, and ammonia and ammonium compounds generated by anaerobic bacteria is minimized. Therefore, the emission of these gases would be significantly reduced if the treatment of manure results in complete oxidation of manure and process water (i.e., aerobic treatment) or if the gases generated during anaerobic decomposition are collected and combusted (i.e., controlled anaerobic digestion).

The type of anaerobic digester unit also affects the VS removal efficiency. A covered anaerobic lagoon digester system generally exhibits greater VS removal efficiency compared to other types of digester systems (i.e., plug flow, complete mix) primarily because lagoons also allow for the partitioning and settling of VS contained in the manure. Therefore, the level of VS in manure treated in anaerobic lagoons is reduced by two processes: bacteria consumption and partitioning and settling (County of Kings, 2002).

The Project includes the construction and operation of a covered, lined anaerobic lagoon digester, ancillary infrastructure and the construction of several new hay barns, corrals and free stall. No new Animal Units is proposed. The newly lined pond will be covered with 80 ml flexible HDPE material to create the Project's biogas collection system. The lagoon cover will be welded to the liner ensuring a complete seal. As noted in the AQIA, the digestor will actually reduce VOC emissions from the Project site since the biogas will be collected and transported off-site via pipeline (Appendix A of this TEIR). Therefore, operational emissions are considered a less than significant impact.

Additionally, the High Roller Dairy has an approved Odor Control and Management Plan that reduces, or controls odors generated from livestock handling, manure collection, treatment, storage, and land application.

The SJVAPCD's GAMAQI states "An analysis of potential odor impacts should be conducted for both of the following two situations:

1. Generators – projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate; and
2. Receivers – residential or other sensitive receptor projects or other projects built for the intent of attracting people locating near existing odor sources." (See Appendix A.)

The High Roller Dairy currently have several open manure lagoons on site. The Project proposes to construct a covered and lined digester that would significantly decrease odors emanating from the lagoon. Furthermore, there does not appear to be any significant source of objectionable odors in close proximity that may adversely impact the project site when it is in operation. Additionally, the Project emission estimates indicate that the proposed Project would not be expected to adversely impact surrounding receptors. As such, the proposed Project would not be a source of any odorous compounds nor would it likely be impacted by any odorous source. Impacts of the proposed Project are less than significant.

CONCLUSION

Based on the provisions of the SJVAPCD's GAMAQI, the proposed Project would not exceed any screening trigger levels to be considered a source of objectionable odors or odorous compounds (Appendix A). Furthermore, there does not appear to be any significant source of objectionable odors in close proximity that may adversely impact the Project site when it is in operation. Additionally, the Project emission estimates indicate that the proposed Project would not be expected to adversely impact surrounding receptors. As such, the proposed Project would not be a source of any odorous compounds nor would it likely be impacted by any odorous source. The Project will not have a more severe adverse impact than discussed in the prior certified EIR.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be ***less than significant.***

3.2 - Biological Resources

3.2.1 - INTRODUCTION

This section evaluates the potential effect the project may have on biological resources. Discussion is based on findings from the Biological Analysis Report (QK, 2020a), which is included as Appendix B of this TEIR.

3.2.2 - ENVIRONMENTAL SETTING

This section identifies the regional and local environmental setting of the Project and describes existing baseline conditions. The environmental setting of the BSA was obtained from various sources of literature, databases, and aerial photographs.

The BSA is located approximately 1.7 miles northwest of the City of Hanford, California. The BSA includes a dairy cattle production facility, orchards and crop lands; the region in general supports similar agricultural activities with little to no undeveloped parcels. The Project site is within the cattle production facility and a portion of adjacent crop land (see Figure 2-1). Representative photographs of the BSA are included in Appendix B.

Topography

The BSA is on the eastern floor of the Central Valley in the northeastern portion of Kings County. The topography of the BSA is relatively flat with an elevation of about 230 feet above mean sea level. There are earthen spoil piles, haystacks, and other dairy related materials stored throughout the Project site providing some topographic variation amongst relatively flat terrain (Appendix B, Photographs 5 and 10).

Climate

The BSA is within an area that has a Mediterranean climate of hot summers and mild, wet winters. Average high temperatures range from 54.7°F in January to 96.1°F in July, with daily temperatures often exceeding 100°F several days in the summer (WWRC 2020). Average low temperatures range from 34.6°F in December to 62.5°F in July. Precipitation occurs primarily as rain, most of which falls from November to April, with an average of 8.38 inches of rainfall per year. Precipitation may also occur as a dense fog during the winter known as Tule fog. Rain rarely falls during the summer months.

Land Use

Most of the BSA is on an active dairy cattle production facility with some portions the BSA extending into adjacent cropland (see Figure 2-1). Historical imagery shows that the land has been used for agricultural purposes since 1994 (Google LLC 2020, Netronline 2020). The region in general supports similar agricultural activities with little to no undeveloped lands.

The Project site is bounded to its east by SR43 and to the west is Jackson Avenue. Land use beyond these roads consist of orchards, croplands and a food market. Land west and north of the site are similarly used for cropland.

Soils

The BSA is underlain by four soil types: Kimberlina fine sandy loam and Excelsior sandy loam Wasco sandy loam and Cajon sandy loam.

3.2.3 - Regulatory Setting

Federal

Federal Endangered Species Act of 1973 (USC, Title 16, Sections 1531–1543)

The Federal Endangered Species Act (FESA) and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. The FESA defines species as threatened or endangered and provides regulatory protection for listed species. The FESA provides a program for the conservation and recovery of threatened and endangered species as well as the protection of designated critical habitat that USFWS determines is required for the survival and recovery of listed species.

Section 9 lists actions that are prohibited under the FESA. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of "harm" includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. "Harass" is defined as actions that create the likelihood of injury to listed species by disrupting normal behavioral patterns related to breeding, feeding, and shelter significantly.

Section 7 of the FESA requires federal agencies, in consultation with and assistance from the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction of adverse modification of critical habitat for these species. The USFWS and National Marine Fisheries Service (NMFS) share responsibilities for administering the FESA. Regulations governing interagency cooperation under Section 7 are found in California Code of Regulations (CCR) Title 50, Part 402. If an activity could result in "take" of a listed species as an incident of an otherwise lawful activity, then a biological opinion can be issued with an incidental take statement that exempts the activity from FESA's take prohibitions.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found at CFR Title 50, Sections 13 and 17 for species under the jurisdiction of USFWS and CFR, Title 50, Sections 217, 220, and 222 for species under the jurisdiction of NMFS. Section

10 would apply to the Project if take of a species (as defined in Section 9) were determined to occur.

Section 4(a)(3) and (b)(2) of the FESA requires the designation of critical habitat to the maximum extent possible and prudent based on the best available scientific data and after considering the economic impacts of any designations. Critical habitat is defined in section 3(5)(A) of the FESA: 1) areas within the geographic range of a species that are occupied by individuals of that species and contain the primary constituent elements (physical and biological features) essential to the conservation of the species, thus warranting special management consideration or protection; and 2) areas outside of the geographic range of a species at the time of listing but that are considered essential to the conservation of the species.

MIGRATORY BIRD TREATY ACT (USC, TITLE 16, SECTIONS 703–711)

The MBTA, first enacted in 1918, is a series of treaties that the United State has with Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird" (U.S. Code Title 16, Section 703). The MBTA currently includes several hundred species and includes all native birds.

BALD AND GOLDEN EAGLE PROTECTION ACT OF 1940 (USC, TITLE 16, SECTION 668)

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 protects bald eagles (*Haliaeetus leucoephalus*) and golden eagle (*Aquila chrysaetos*) by prohibiting the taking, possession, and commerce of these species and established civil penalties for violation of this act. Take of bald and golden eagles includes to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." To disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially inferring with normal breeding, feeding, or sheltering behavior (Federal Register [FR], volume 72, page 31132; 50 CFR 22.3).

FEDERAL CLEAN WATER ACT (USC, TITLE 33, SECTIONS 1521–1376)

The Federal Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires that a Project applicant that is pursuing a federal license or permit allowing a discharge to waters of the U.S. to obtain State Certification of Water Quality, thereby ensuring that the discharge will comply with provisions of the CWA. The Regional Water Quality Control Board (RWQCB) administers the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S. Section 404 establishes a permit program administered by the United

States Army Corps of Engineers (USACE) that regulates the discharge of the dredged or fill material into waters of the U.S., including wetlands. The USACA implementing regulations are found in CFR, Title 33, Sections 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the United States Environmental Protection Agency (EPA) in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

State

California Environmental Quality Act (California Public Resources Code, Sections 21000–21178, and Title 14 CCR, Section 753, and Chapter 3, Sections 15000–15387)

The California Environmental Quality Act (CEQA) is California's broadest environmental law. CEQA helps guide the issuance of permits and approval of projects. Courts have interpreted CEQA to afford the fullest protection of the environment within the reasonable scope of the statutes. CEQA applies to all discretionary projects proposed to be conducted or approved by a State, County, or City agency, including private projects requiring discretionary government approval.

The purpose of CEQA is to disclose to the public the significant environmental effects of a proposed discretionary project; prevent or minimize damage to the environment through development of project alternatives, mitigation measures, and mitigation monitoring; disclose to the public the agency decision making process to approve discretionary projects; enhance public participation in the environmental review process; and improve interagency coordination.

State CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or State list of protected species nonetheless may be considered rare or endangered for purposed of CEQA if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals.

California Endangered Species Act (California Fish and Game Code Section 2050 et seq.)

The California Endangered Species Act (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve Projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For Projects that would result in take of a species listed under the CESA, a project proponent would need to obtain a take permit under Section 2081(b). Alternatively, the CDFW has the option of issuing a Consistency Determination (Section 2080.1) for Projects that would affect a species listed under both the

CESA and the FESA, as long as compliance with the FESA would satisfy the "fully mitigate" standard of CESA, and other applicable conditions.

PORTER-COLOGNE WATER QUALITY CONTROL ACT

Under Section 401 of the CWA, the RWQCB must certify that actions receiving authorization under Section 404 of the CWA also meet State water quality standards. The RWQCB regulates waters of the State under the authority of the Porter-Cologne Water Quality Control Act (Porter Cologne Act). The RWQCB requires Projects to avoid impacts to wetlands whenever feasible and requires that Projects do not result in a net loss of wetland acreage or a net loss of wetland function and values. The RWQCB typically requires compensatory mitigation for impacts to wetlands and/or waters of the State. The RWQCB has jurisdiction over waters deemed 'isolated' or not subject to Section 404 jurisdiction under the Solid Waste Agency of Northern Cook County (SWANCC) decision. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste into waters of the State, and such discharges are authorized through an Order of Waste Discharge (or waiver of discharge) from the RWQCB.

VARIOUS SECTIONS OF THE CALIFORNIA STATE FISH AND GAME CODE

Section 460 and Sections 4000–4003

Chapter 5 of the California Fish and Game Code (FGC) describes regulations concerning the take of furbearing mammals, including defining methods of take, seasons of take, bag and possession limits, and areas of the State where take is allowed. Section 4000-4003 defines furbearing mammals, and the issuance of permits by the Department. Sections 460 and 4000 identifies fisher, marten, river otter, desert kit fox and red fox as furbearing mammals, and Section 460 prohibits take of these species at any time. This section of the California Fish and Game Code (FGC) has historically been interpreted to apply to restriction on furbearer trapping permit but has recently been expanded by CDFW to apply to any forms of take and treated as if these species were listed under CESA.

Sections 1600–1616

Under these sections of the FGC, a Project operator is required to notify CDFW prior to any Project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the California Code of Regulations, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports of has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events. Preliminary notification and Project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable Project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement.

Sections 3511, 4700, 5050, and 5515

The protection of fully protected species are described in Sections 3511, 4700, 5050, and 5515 of the FGC. These statues prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species, except as allowed for in an approved Natural Communities Conservation Plan (NCCP), or through direct legislative action.

Sections 1900–1913 Native Plant Protection Act

California's Native Plant Protection Act (NPPA) requires all State agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provision of the NPPA prohibit that taking of listed plants from the wild and require notification of CDFW at least ten days in advance of any change in land use. This allows CDFW to salvage listed plant species that otherwise would be destroyed. A Project proponent is required to conduct botanical inventories and consult with CDFW during Project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

Local and Regional Laws, Regulations, and Policies

KINGS COUNTY GENERAL PLAN

Table A-1
Resource Conservation Element
Kings County General Plan

Goal	
Goal D1:	Preserve land that contains important natural plant and animal habitats.
Goal D2:	Maintain the quality of existing natural wetland areas as required by the California Department of Fish and Game, the United States Fish and Wildlife Service and the United States Army Corp of Engineers.
Goal D3:	Protect and manage riparian environments as valuable resources.
Goal E1:	Balance the protection of the County's diverse plant and animal communities with the County's economic needs.
Policies	
Policy D1.1.1:	Evaluate all discretionary land use applications in accordance with the screening procedures contained in the Biological Resources Survey located in Appendix C. If the results of the project screening indicates the potential for important biological resources to exist on the site a biological evaluation (consistent with Appendix C) shall be performed by a qualified biologist. If the evaluation indicates that the project could have a significant adverse impact, mitigation shall be

Goal	
	required or the project will be redesigned to avoid such impacts. Mitigation shall be provided consistent with the California Environmental Quality Act (CEQA), and applicable state and federal guidelines as appropriate. Mitigation may include habitat improvement or protection, acquisition of other habitat, or payment to an appropriate agency to purchase, improve, or protect such habitat.
Policy D1.1.2:	Require project applicants to consult with the California Department of Fish and Game and the United States Fish and Wildlife Service and to obtain appropriate authority for any such take pursuant to Endangered Species Act requirements if new development or other actions are likely to result in incidental take of any threatened or endangered species.
Policy D2.1.1:	Follow state and federal guidelines for the protection of natural wetlands. Require developers to obtain authorization from the appropriate local, state, or federal agency prior to commencement of any wetland fill activities.
Policy D2.1.2	Use the California Environmental Quality Act (CEQA) process to assess wetland resources, and require mitigation measures for development which could adversely impact a designated wetland.
Policy D2.1.3	"Prior Converted Croplands" as defined by state and federal regulations shall be exempt from consideration as wetlands under the County planning process.
Policy D3.1.1	Designate the Kings River as a resource conservation area, implemented by use of the Natural Resource Conservation overlay zone district.
Policy D3.1.2	Encourage the Kings River Conservation District to avoid substantial alteration of the Kings River channel and its riparian vegetation, consistent with their flood control responsibilities.
Policy D3.1.3	Evaluate the potential impact on the riparian environment of proposed development adjacent to the Kings River, beyond the boundaries of the designated floodway. Conservation of fish and wildlife habitat and protection of scenic qualities should be the guiding principle.
Policy D3.1.4	Prohibit development within riparian environments over which the County has jurisdiction. However, allow or consider for approval if it is determined that significant disturbance of the riparian environment would not occur, the following passive uses or activities: • Streamside maintenance and repair for mandated flood control or water delivery purposes, facilities, and equipment;

Goal	
	• Road and utility line crossings; • Grazing and similar agricultural production activities not involving structures or cultivation; • Vegetation removal for integrated pest management programs under guidelines; • Passive recreational uses such as riverside parks and bikeways.
Policy D3.1.5	Refer all discretionary permit applications for projects along the Kings River and Cross Creek to the appropriate local, state, and federal agencies for review and approval.
Policy D3.1.6	Evaluate Fish and Game approved conservation plans and wildlife corridor studies prepared by government or private non-profit biological resource entities that analyze Kings County's wildlife and riparian habitat, and where feasible, accommodate implementation of wildlife corridor plans.
Policy E1.1.1	Complete the inquiry process outlined in Appendix C in the initial project review for development permits to determine whether the project is likely to have a significant adverse impact on any threatened or endangered species habitat locations, and to assure appropriate consideration of habitat preservation by development. Maintain current copies of California Department of Fish and Game and United States Fish and Wildlife Service maps showing locations of known threatened and endangered species habitat. If shown to be necessary, require the developer to consult with the California Department of Fish and Game, the United States Fish and Wildlife Service, and the United States Army Corps of Engineers as to potential impacts, appropriate mitigation measures, and required permits.
Policy E1.1.2	Require as a primary objective in the review of development projects the preservation of healthy native oaks and other healthy native trees.
Policy E1.1.3	Maintain to the maximum extent practical the natural plant communities utilized as habitat by threatened and endangered species (see Appendix C for a listing and map of these plant communities).

Source: (Kings County, 2010)

3.2.4 - IMPACT EVALUATION CRITERIA

Criteria for evaluating adverse effects on biological resources are:

Would the project:

a) *Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*
b) *Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*
c) *Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*
d) *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*
e) *Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*
f) *Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

DISCUSSION

Impact #3.2a – Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

A reconnaissance survey of the Project, which consisted of the Project site (footprint) and a 500-foot buffer surrounding the Project site, also known as the Biological Study Area (BSA) was conducted on March 12, 2020 by qualified biologists (see Appendix B). The majority of the BSA is on an active dairy cattle production facility with some portions the BSA extending into adjacent cropland. No special-status plant species have potential to occur within the BSA because of existing dairy operations, habitat and soil conditions. No impacts to special-status plant species will occur.

Five special-status wildlife species have potential to occur within the BSA: western burrowing owl, Swainson's hawk, American badger San Joaquin kit fox and tricolored blackbird.

Western Burrowing Owl

There is no evidence that the western burrowing owl is present within the BSA. There were only a few potential small mammal burrows present, indicating a low potential for nesting. The agricultural and urban habitat types provide some foraging habitat but there is no evidence that those areas are used for foraging. However, because the species is present in the region year-round it is possible for a transient burrowing owl to occur on-site at any time. Direct impacts to burrowing owl could occur if there is an active burrow or transient

individual within the BSA during the period of construction activities. Construction activities could result in crushing or destroying a burrow with a burrowing owl inside. Noise and vibration from the Project construction activities could alter the daily behaviors of individual owls and effect foraging activities or rearing of young. Implementation of Measures BIO-1 through BIO-4 and BIO-7, listed below, would reduce any impacts to the species to a less than significant level.

Swainson's Hawk

The Project site does not contain suitable nesting habitat for Swainson's hawk and only a small amount of foraging habitat exits. The BSA outside the Project site boundary contains more suitable nesting and foraging habitat. The southeast corner of the BSA outside the Project site boundary contains large eucalyptus trees that can be used for nesting and crop fields that can be used for foraging exist within and around the BSA. There is no evidence that these areas are being used for nesting or foraging. The high level of vehicle and foot traffic within those areas accompanied by the daily activities at the dairy facility may decrease the likelihood of Swainson's hawk nesting activity on the BSA. If nesting Swainson's hawks are present in the vicinity of the Project during construction, then noise and vibration and the presence of construction workers, could alter normal behaviors and possibly lead to nest failure. Implementation of Measures BIO-4 through BIO-7 would reduce any impacts to the species to below significant levels.

American Badger

There is no positive evidence that the American badger is present within the BSA, but potential denning and foraging habitat exists outside the Project site boundary. Because this species is highly mobile, this species may be present on the site as a transient forager. Direct impacts could include injury or death of individuals, entrapment in trenches or pipes, and loss of foraging and denning habitat. Construction activities could result in crushing or destroying a den with a badger inside. Noise, vibration, and the presence of construction workers could alter normal behaviors if badgers are present, which could affect reproductive success. Increased human presence at the new residential homes following Project activities could indirectly impact American badgers by deterring them from denning or foraging in the vicinity of the Project. Implementation of Measures BIO-1 through BIO-3 and BIO-7 would reduce any impacts to the species to below significant levels.

San Joaquin Kit Fox

There is no evidence that the San Joaquin kit fox is present within the BSA. The BSA and surrounding land are highly developed and provide minimal denning and foraging habitat, but the species is known to inhabit the region and is adaptable to urban environments. Because this species is highly mobile, it may be present from time to time on the BSA as a transient forager or part-time resident. Direct impacts resulting in injury, death, or entrapment in trenches or pipes could occur if a fox travels into the construction area. Construction activities could result in crushing or destroying a den with a kit fox inside. Noise, vibration, and the presence of construction workers may alter normal behaviors,

which could affect reproductive success. Implementation of Measures BIO-1 through BIO-3 and BIO-7 would reduce impacts to the species to a less than significant level.

Nesting Birds

The BSA contains suitable habitat for a wide variety of nesting native bird species, including the Tricolored blackbird. There is no evidence that the Tricolor blackbirds are present within the BSA. Within the Project site urban habitat and irrigated grain crop habitat would support birds that nest in trees, shrubs, grasses and herbs and man-made structures. However, irrigated grain crop habitat does not provide substantial breeding habitat because grains are usually harvested prior to fledging. Also, demolition of existing structures is not anticipated. There were no nests observed on the Project site during the survey. If birds were to nest on the Project site, construction-related vibration, noise, and dust production, and human presence could alter the normal behaviors of nesting birds in the vicinity of the Project and lead to nest failure. Implementation of Measures BIO-4 and BIO-7 would reduce potential impacts to these species to below significant levels.

The irrigated grain crop habitat within the BSA and surrounding area provides suitable foraging habitat and potential nesting habitat for tricolored blackbird, but there is no evidence that these areas are being used as such. The Project site contains 7.5-acres of irrigated grain crop habitat. However, this habitat does not provide substantial breeding habitat because grains are usually harvested prior to fledging. Construction activities will not take place in areas of cropland that have not been harvested. Additionally, the high level of vehicle and foot traffic within those areas accompanied by the daily activities at the dairy facility may decrease the likelihood of tricolored blackbird or other bird nesting or foraging in the BSA. Implementation of Mitigation Measure BIO-4 would reduce any impacts to the species to below significant levels.

MITIGATION MEASURE(S)

MM BIO-1: Within 14 days of the start of Project activities, a pre-activity survey shall be conducted by a qualified biologist knowledgeable in the identification of these species. The pre-activity survey shall include walking transects to identify presence of burrowing owls and their burrows, American badgers and their dens, and San Joaquin kit foxes and their dens. The transects should be spaced at no greater than 30-foot intervals in order to obtain a 100 percent coverage of the Project site and a 250-foot buffer. Areas devoid of habitat incapable of supporting these species would not require surveys. If no evidence of these special-status species is detected, no further action is required.

MM BIO-2: If dens or burrows that could support these species are discovered during the pre-activity survey conducted under Measure BIO-1, avoidance buffers outlined below should be established. No work should occur within these buffers unless a qualified biologist approves and monitors the activity.

Burrowing Owl (active burrows)

- Non-breeding season: September 1 – January 31 – 160 feet
- Breeding season: February 1 – August 31 – 250 feet

American Badger and San Joaquin Kit Fox

- Potential or Atypical den – 50 feet
- Known den – 100 feet
- Natal or pupping den – Contact agencies for further guidance

Any ESA buffer established shall remain in place until the species has left on its own. Once the species has left, the burrow shall be monitored using trail cameras or tracking medium such as diatomaceous earth. If no species are detected for a minimum of three consecutive days/nights, the burrow shall hand excavated under the direct supervision of a qualified biologist. All burrow tunnels shall be hand excavated to their terminus or examined before backfilling to ensure no burrowing owls, kit foxes, or other animals are hiding inside.

Alternatively, burrowing owls shall be passively excluded from a non-nest burrow through the installation of one-way doors. Prior to engaging in such passive exclusion activities, an Exclusion Plan shall be prepared following the guidance outlined in the CDFW's Staff Report on Burrowing Owl Mitigation (CDFG 2012). The Exclusion Plan shall be submitted to the CDFW for review and approval prior to implementation. Once approved, one-way doors shall be installed at non-nest burrows. The doors shall be monitored for a minimum of three days to ensure burrowing owls have left the burrow. The burrow shall then be excavated as described above. If at any time during excavation a burrowing owl is detected within the burrow, excavation activities shall immediately cease, and the one-way door reinstalled and monitored until the owl has left the burrow. Hand excavation may then resume. Exclusion efforts shall be documented.

MM BIO-3: The following avoidance and minimization measures shall be implemented during all phases of the Project to reduce the potential for impact from the Project. They are modified from the U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011). The standard measures for the protection of the San Joaquin kit fox are provided in full in Appendix E of the Biological Analysis Report.

1. Project-related vehicles shall observe a daytime speed limit of 20-mph throughout the site in all Project areas, except on County roads and State and federal highways.
2. All Project activities shall occur during daylight hours, but if work must be conducted at night then a night-time construction speed limit of 10-mph shall be established.
3. Off-road traffic outside of designated Project areas shall be prohibited.
4. To prevent inadvertent entrapment of kit foxes or other animals during construction of the Project, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials. If

the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed.

5. Before holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the USFWS and the CDFW shall be contacted before proceeding with the work.
6. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the USFWS and CDFW shall be contacted for guidance.
7. All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes and burrowing owls before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.
8. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from a construction or Project site.
9. No pets, such as dogs or cats, shall be permitted on the Project site.
10. Project-related use of rodenticides and herbicides shall be restricted.
11. A representative shall be appointed by the Project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative shall be identified during the employee education program and their name and telephone number shall be provided to the USFWS and CDFW.
12. Upon completion of the Project, all areas subject to temporary ground disturbances (including storage and staging areas, temporary roads, pipeline corridors, etc.) shall be recontoured if necessary, and revegetated to promote restoration of the area to pre-Project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the Project, but after Project completion will not be subject to further disturbance and has the potential to be revegetated.
13. Any Project personnel who are responsible for inadvertently killing or injuring one of these species shall immediately report the incident to their representative. This representative shall contact the CDFW (and USFWS in the case of San Joaquin kit fox) immediately in the case of a dead, injured or entrapped San Joaquin kit fox, American badger, or western burrowing owl.
14. The Sacramento Fish and Wildlife office and CDFW Region 4 office shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during Project related activities. The CDFW shall be notified in the case of accidental death to an American badger or western burrowing owl. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information.
15. New sightings of San Joaquin kit fox, American badger, or western burrowing owl shall be reported to the CNDDB. A copy of the reporting form and a topographic map

clearly marked with the location of where a San Joaquin kit fox was observed shall also be provided to the USFWS.

MM BIO-4: If Project activities must occur during the nesting season (February 1 to September 15), pre-activity nesting bird surveys shall be conducted within seven days prior to the start of construction at the construction site plus a 250-foot buffer for songbirds and a 500-foot buffer for raptors (other than Swainson's hawk). If no active nests are found, no further action is required. However, existing nests may become active and new nests may be built at any time prior to and throughout the nesting season, including when construction activities are in progress. If active nests are found during the survey or at any time during construction of the Project, an avoidance buffer ranging from 50 feet to 500 feet may be required, with the avoidance buffer from any specific nest being determined by a qualified biologist. The avoidance buffer will remain in place until the biologist has determined that the young are no longer reliant on the adults or the nest. Work may occur within the avoidance buffer under the approval and guidance of the biologist, but full-time monitoring may be required. The biologist shall have the ability to stop construction if nesting adults show any sign of distress.

MM BIO-5: If Project activities must occur during the nesting season (February 15 to August 31), pre-activity surveys shall be conducted for Swainson's hawk nests in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley, Swainson's Hawk Technical Advisory Committee (CDFG 2000). The surveys would be conducted on the Project site plus a 0.5-mile buffer. To meet the minimum level of protection for the species, surveys shall be conducted during at least two survey periods.

If no Swainson's hawk nests are found, no further action is required.

MM BIO-6: If an active Swainson's hawk nest is discovered at any time within 0.5-mile of active construction, a qualified biologist shall complete an assessment of the potential for current construction activities to impact the nest. The assessment would consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this Project. Based on this assessment, the biologist will determine if construction activities can proceed and the level of nest monitoring required. Construction activities shall not occur within 500 feet of an active nest but depending upon conditions at the site this distance may be reduced. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist shall have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist.

MM BIO-7: Prior to the initiation of construction activities, all personnel shall attend a Worker Environmental Awareness Training program developed by a qualified biologist. The program shall include information on the life histories of special-status species with

potential to occur on the Project, their legal status, course of action shall these species be encountered on-site, and avoidance and minimization measures to protect these species.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant impact with mitigation incorporated.*

Impact #3.2b – Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

The BSA does not overlap critical habitat and there are no sensitive natural communities present. Therefore, the Project would have no impacts to sensitive natural communities and no measures are warranted.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact.*

Impact #3.2c – 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?

There are five water features within the BSA, one stream feature and four manmade basins (Appendix B). The stream feature is designated as a canal/ditch and is described as R5UBFx according to the Cowardin classification system (Appendix B). The feature lacked any significant vegetative cover and appears to be well maintained. The bed is sandy, and the banks do not contain any riprap. While it was not inundated at the time of the survey, historic aerials show evidence of intermittent water flow. Water in this unnamed feature originates from the East Branch Peoples Ditch northeast of the BSA before flowing southwest into the eastern half of the BSA. After leaving the BSA, the feature flows southwest and eventually connects to another unnamed stream feature.

Three basins are designated as freshwater ponds and are described as PUBFx (Appendix B). Three of the manmade basins are located within the dairy cattle production facility. Two are currently used as lagoons for storage/treatment of dairy waste and the third is used as an anaerobic covered lagoon digester. No vegetation was documented at these basins that were inundated at the time of the survey. The fourth basin occurs in the northeast portion of the BSA, outside the dairy facility on the eastern side of the SR 43. That basin appears to be used as water storage for the adjacent orchard lands. At the time of the survey, the basin was dry, and evidence of recent maintenance was documented. There was no vegetation documented at the fourth basin.

The United States Army Corps of Engineers (USACE) has regulatory authority over the Clean Water Act (CWA), as provided for by the EPA. The USACE has established specific criteria for the determination of wetlands based upon the presence of wetland hydrology, hydric soils, and hydrophilic vegetation. There are no federally protected wetlands or vernal pools that occur within the Project site.

Wetlands, streams, reservoirs, sloughs, and ponds typically meet the criteria for federal jurisdiction under Section 404 of the CWA and State regulatory authority under the Porter-Cologne Water Quality Control Act. Streams and ponds typically meet the criteria for State regulatory authority under Section 1602 of the California Fish and Game Code. There are no features on the Project site that would meet the criteria for either federal jurisdiction or State regulatory authority. There would be no impact to federally protected wetlands or waterways or State wetlands or waters.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.2d – 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?

The Project is not located within a wildlife movement corridor or linkage and there are no features on-site that specifically lend themselves to wildlife movement. The Project does not serve as a connector between any patches of valuable wildlife habitat. The Project will not restrict, eliminate, or significantly alter a wildlife movement corridor, wildlife core area, or Essential Habitat Connectivity area, either during construction or after the Project has been constructed. Project construction will not substantially interfere with wildlife movements or reduce breeding opportunities.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.2e – Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The proposed Project does not conflict with the Kings County General Plan. There are no impacts with respect to local policies and ordinances and no measures are warranted.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be ***no impact***.

Impact #3.2f – 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?

The Project is located within an area covered by the PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan (HCP). This HCP applies only to PG&E's activities and does not apply to this Project.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be ***no impact***.

3.3 - Cultural and Tribal Resources

3.3.1 - INTRODUCTION

This section evaluates the potential effect the project may have on historical resources.

The analysis in this section is based on the Cultural Resources Technical Memo prepared for the Project (QK, 2020b) ,which can be found in Appendix C of this TEIR and other available data.

3.3.2 - ENVIRONMENTAL SETTING

Prehistory

The project site is located in the southern San Joaquin Valley in an area known to have been the home of the Tachi tribe of the Yokuts. The Tachi Yokuts lived north of Tulare Lake and westward to the hills near Coalinga. Archaeological evidence indicates that the historic Native American people were "the last in a series of hunting or hunting-gathering populations" to live in the Tulare Lake region (Wallace, 1991). Artifacts collected from archaeological sites in the vicinity of the lake, primarily along a former (lower) lake shoreline, include over 325 Clovis-type lithic projectile points (Stepp, 1997). Clovis points are typically considered index fossils of an early North American stone tool technology developed 11,000 to 13,000 years ago. Therefore, human occupation of the Tulare Lake margin probably began more than 10,000 years ago.

Significant Tulare Lake archaeological sites include the Witt site in southern Kings County (near Dudley Ridge) and the Creighton Ranch site in western Tulare County. Fossilized human bone from the Witt site has been radiometrically dated as being 11,380 to 15,800 years old. The bones of Pleistocene mammals from that site are similarly dated. Several sites have also been identified south and west of Hanford (including three mound sites that were leveled in the 1940s). Other sites have been recorded in the area of Stratford, the area south and west of Lemoore, and in the area surrounding Alpaugh in southwest Tulare County and southeastern Kings County (Wallace, 1993). The CHRIS records indicate that 90 recorded cultural resource sites have been identified in Kings County.

Most of the archaeological resources are located in the upper three feet of the subsurface. Throughout most of the valley floor portion of the County, intensive agricultural production has disturbed surface soils to below this depth. Therefore, it is likely that agricultural activities have disturbed most of the archaeological resources. In addition, ardent collection of artifacts by local residents and other collectors has complicated systematic, scientific evaluation of the Tulare Lake archaeological resources.

Historic Period

The Kings County General Plan identifies four sites in the County that are listed on the National Register of Historic Places, and three additional sites that have been designated as

California Historical Landmarks. Three of the sites on the National Register are in Hanford: the Taoist Temple; the old County Courthouse; and the Carnegie Library. The fourth site is the Witt archaeological site near Dudley Ridge. The three California Historical Landmarks are the Mussel Slough Tragedy site south of Hardwick; the Kingston Town site north of Hardwick; and the El Adobe de los Robles Rancho west of Lemoore.

The County General Plan also identifies thirteen historic sites of local importance. The sites include seven cemeteries and two churches located in Corcoran, Lemoore, Grangeville, and other rural areas in the northern County. Additional sites include the original site of Lemoore; the Avenal Ranch; Kettleman Hills fossil beds; and First High School on the Kings River.

3.3.3 - REGULATORY SETTING

Federal

SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT (NHPA)

Archaeological resources are protected through the National Historic Preservation Act (NHPA) of 1966, as amended (54 USC 300101 et seq.); and its implementing regulation, Protection of Historic Properties (36 CFR Part 800), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. The NHPA authorized the expansion and maintenance of the National Register of Historic Places (NRHP), established the position of State Historic Preservation Officer (SHPO), and provided for the designation of State Review Boards, set up a mechanism to certify local governments to carry out the purposes of the NHPA, assisted Native American tribes to preserve their cultural heritage, and created the Advisory Council on Historic Preservation (ACHP). Prior to implementing an "undertaking" (e.g., issuing a federal permit), Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties and to afford the ACHP and the SHPO a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register of Historic Places (NRHP). As indicated in Section 101(d)(6)(A) of the NHPA, properties of traditional religious and cultural importance to a tribe are eligible for inclusion in the NRHP. Under the NHPA, a resource is considered significant if it meets the NRHP listing criteria at 36 Code of Federal Regulations (CFR) 60.4.

NATIONAL REGISTER OF HISTORIC PLACES (NRHP)

The NRHP was established by the NHPA of 1966, as "an authoritative guide to be used by federal, State, and local governments, private groups, and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (CFR 36 Section 60.2). The NRHP recognizes both historic-period and prehistoric archaeological properties that are significant at the national, State, and local levels.

To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. A property (districts, sites, buildings, structures, and objects of potential significance) is eligible for the NRHP if it is significant under one or more of the following four established criteria:

- Criterion A: It is associated with events that have made a significant contribution to the broad patterns of our history;
- Criterion B: It is associated with the lives of persons who are significant in our past;
- Criterion C: It embodies the distinctive characteristics of a type, period, or method of construction; represents the work of a master; possesses high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction; and
- Criterion D: It has yielded, or may be likely to yield, information important in prehistory or history.

Cemeteries, birthplaces, or graves of historic figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; and properties that are primarily commemorative in nature are not considered eligible for the NRHP unless they satisfy certain conditions. In general, a resource must be at least 50 years of age to be considered for the NRHP, unless it satisfies a standard of exceptional importance.

In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance." The NRHP recognizes seven qualities that, in various combinations, define integrity. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association.

NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT OF 1990

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from federal and tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects. It requires any federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency and to provide a summary to any Native American tribe claiming affiliation.

State

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

CEQA is the principal statute governing environmental review of projects occurring in the State and is codified at Public Resources Code (PRC) Section 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or archaeological resources.

Under CEQA (PRC Section 21084.1), a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. The CEQA Guidelines (14 California Code of Regulations [CCR] 15064.4) recognizes that historical resources include:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR;
- A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be a historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 of CEQA and 14 CCR 15064.4 of the CEQA Guidelines apply. If a project may cause a substantial adverse change (defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired) in the significance of a historical resource, the lead agency must identify potentially feasible measures to mitigate these effects (14 CCR 15064.4(b)(1), 15064.4(b)(4)).

If an archaeological site does not meet the historical resource criteria contained in the CEQA Guidelines, then the site may be treated as a unique archaeological resource in accordance with the provisions of PRC Section 21083. As defined in PRC Section 21083.2 of CEQA, a unique archaeological resource is an archaeological artifact, object, or site for which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;

- 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.

If an archaeological site meets the criteria for a unique archaeological resource as defined in PRC Section 21083.2, then the site is to be treated in accordance with the provisions of PRC Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (PRC Section 21083.1(a)). If preservation in place is not feasible, mitigation measures shall be required.

The CEQA Guidelines note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (14 CCR 15064.4(c)(4)).

CALIFORNIA REGISTER OF HISTORICAL RESOURCES (CRHR)

Created in 1992 and implemented in 1998, the California Register of Historical Resources (CRHR) as "an authoritative guide in California to be used by State and local agencies, private groups, and citizens to identify the State's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change." Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest Program, identified as significant in historical resources surveys or designated by local landmarks programs, may be nominated for inclusion in the CRHR. A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission (SHRC) determines that it meets one or more of the following criteria, which are modeled on NRHP criteria:

- Criterion 1. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Criterion 2. It is associated with the lives of persons important in our past;
- Criterion 3. It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values; and/or
- Criterion 4. It has yielded, or may be likely to yield, information important in history or prehistory.

Furthermore, under PRC 5024.1, 14 CCR, Section 4852(c), a cultural resource must retain integrity to be considered eligible for the CRHR. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting, materials, workmanship, feeling, and association. Cultural sites that have been

affected by ground-disturbing activities, such as grazing and off-road vehicle use (both of which occur within the project site), often lack integrity because they have been directly damaged or removed from their original location, among other changes.

Typically, a prehistoric archaeological site in California is recommended eligible for listing in the CRHR based on its potential to yield information important in prehistory or history (Criterion 4). Important information includes chronological markers such as projectile point styles or obsidian artifacts that can be subjected to dating methods or undisturbed deposits that retain their stratigraphic integrity. Sites such as these have the ability to address research questions.

CALIFORNIA HISTORICAL LANDMARKS (CHLS)

California Historical Landmarks (CHLs) are buildings, structures, sites, or places that have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value and that have been determined to have statewide historical significance by meeting at least one of the criteria listed below. The resource also must be approved for designation by the county board of supervisors (or the city or town council in whose jurisdiction it is located); be recommended by the SHRC; and be officially designated by the Director of California State Parks. The specific standards now in use were first applied in the designation of CHL #770. CHLs #770 and above are automatically listed in the CRHR.

To be eligible for designation as a landmark, a resource must meet at least one of the following criteria:

- It is the first, last, only, or most significant of its type in the State or within a large geographic region (Northern, Central, or Southern California);
- It is associated with an individual or group having a profound influence on the history of California; or
- It is 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.

CALIFORNIA POINTS OF HISTORICAL INTEREST

California Points of Historical Interest are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. Points of historical interest designated after December 1997 and recommended by the SHRC are also listed in the CRHR. No historic resource may be designated as both a landmark and a point. If a point is later granted status as a landmark, the point designation will be retired. In practice, the point designation program is most often used in localities that do not have a locally enacted cultural heritage or preservation ordinance.

To be eligible for designation as a point of historical interest, a resource must meet at least one of the following criteria:

- It is the first, last, only, or most significant of its type within the local geographic region (city or county);
- It is associated with an individual or group having a profound influence on the history of the local area; or
- It is 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 the local region of a pioneer architect, designer, or master builder.

NATIVE AMERICAN HERITAGE COMMISSION (NAHC)

PRC Section 5097.91 established the Native American Heritage Commission (NAHC), the duties of which include inventorying of places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. PRC Section 5097.98 specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

CALIFORNIA PUBLIC RECORDS ACT

Sections 6254(r) and 6254.10 of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public relating to "Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission." Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports, maintained by, or in the possession of the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the NAHC, another State agency, or a local agency, including the records that the agency obtains through a consultation process between a Native American tribe and a State or local agency."

CALIFORNIA HEALTH AND SAFETY CODE, SECTIONS 7050 AND 7052

Health and Safety Code, Section 7050.5, declares that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease and the county coroner must be notified. Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

CALIFORNIA PENAL CODE, SECTION 622.5

The California Penal Code, Section 622.5, provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands, but specifically excludes the landowner.

PUBLIC RESOURCES CODE, SECTION 5097.5

PRC Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

ASSEMBLY BILL (AB) 52

Assembly Bill (AB) 52, which went into effect on July 1, 2015, requires CEQA lead agencies to engage in early consultation with California Native American tribes on all projects. AB 52 creates a new CEQA resource: Tribal Cultural Resources, which include sites, features, places, cultural landscapes, sacred place, objects, or archeological resources with cultural value to a California Native American tribe that is listed or eligible for listing in the national, California or local registers.

AB 52 requires lead agencies to consider whether a project may cause a substantial adverse change in the significance of a Tribal Cultural Resource and to consider a tribe's cultural values when determining the appropriate environmental assessment, impacts and mitigation. AB 52 can draw upon SB 18's Guidelines and can be completed in tandem.

AB 52 applies to projects with a Notice of Preparation (NOP) or notice of a Negative Declaration or Mitigated Negative Declaration issued on or after July 1, 2015. The California Office of Planning and Research (OPR) must propose and California Natural Resources Agency (CNRA) must adopt revisions to the CEQA Guidelines by July 1, 2016 in order to: (1) separate the consideration of paleontological resources from Tribal Cultural Resources and update the relevant sample questions and (2) add consideration of Tribal Cultural Resources with relevant sample questions. The NOP for this project was issued on April 1, 2014; therefore, AB 52 does not apply to this project.

Local

KINGS COUNTY GENERAL PLAN DAIRY ELEMENT

Relevant Goals, Objectives, and Policies

Objective DE 3.1 of the Draft Dairy Element (Element) requires that potential environmental effects be considered during the review and evaluation of applications for new or expanded dairies. Policy DE 3.1d specifically requires that known cultural and archaeological resources be considered for general dairy siting criteria during the dairy development review process.

Policy DE 3.1e addresses the potential for disturbance of unknown cultural and paleontological resources during construction of individual dairy projects.

3.3.4 - IMPACT EVALUATION CRITERIA

Criteria for evaluating adverse effects on cultural resources are:

Would the project:

a) *Cause a substantial adverse change in the significance of an historical resource as defined in 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?*

DISCUSSION

Impact #3.3a – Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?

It is also possible that excavation for dairy structures and manure management facilities could encounter as-yet undetected (i.e., buried) resources. Such finds may meet the definition of a "unique archaeological resource" as specified in Section 21083.2 of the Public Resources Code. It is also possible that human remains could be encountered during construction activities.

Most of the archaeological resources are located in the upper three feet of the subsurface. Throughout most of the valley floor portion of the County, intensive agricultural production has disturbed surface soils to below this depth. Therefore, it is likely that agricultural activities have disturbed most of the archaeological resources (County of Kings, 2002).

As required Policies DE 3.1d of the Dairy Element, a cultural resources records search (RS #20-121) was conducted at the Southern San Joaquin Valley Information Center, California State University- Bakersfield for the Project. The records search covered an area within one-half mile of the project and included a review of the *National Register of Historic Places*, *California Points of Historical Interest*, *California Registry of Historic Resources, California Historical Landmarks, California State Historic Resources Inventory*, and a review of cultural resource reports on file.

The records search indicated that the subject property had never been surveyed for cultural resources. No cultural resources have been recorded on the property and it is not known if any exist there. However, no cultural resource studies have been conducted within a half mile of the property. Based on the results of cultural records search findings and the lack of historical or archaeological resources previously identified within a half mile radius of the proposed Project, the potential to encounter subsurface cultural resources is minimal.

The Project construction would be conducted within the partially developed and previously disturbed parcel. The potential to uncover subsurface historical or archaeological deposits is would be considered unlikely. Although there is no record evidence of archaeological sites on the project site, the possibility remains that resources exist there and, as such, further investigation may be warranted.

The provisions of Policy DE 3.1e require that, if archaeological resources are encountered during dairy development, work is to be suspended pending evaluation of the resources by a qualified archaeologist. The evaluation must be conducted in accordance with State and Federal guidelines (including Section 15064.5 of the CEQA Guidelines). Implementation of Policy DE 3.1d will ensure that known cultural resources are identified and managed during consideration of dairy development applications. The potential for disturbance of unknown (i.e., buried) cultural and paleontological resources is mitigated in conformance with CEQA requirements by Policy DE 3.1e.

The recommended mitigation measures will assure that appropriate procedures are followed with respect to prehistoric or historic-era cultural materials, unidentified skeletal remains or Native American burial grounds that may be found during project construction or operation. The measures will assure that any Native American cultural resources or burial sites encountered are avoided, treated in accordance with the recommendations of the most likely descendant (for Native American remains), or relocated. These measures will also assure that any historical or cultural resources are properly evaluated and will reduce this impact to a less than significant level

MITIGATION MEASURE(S)

MM 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 the proposed 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 both construction and decommissioning. 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.*

MM 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 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.*

Impact #3.3b – Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

See discussion of Impact #3.3a, above.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures MM CUL-1 and MM CUL-2.

LEVEL OF SIGNIFICANCE

Impacts would be ***less than significant with mitigation incorporated***.

Impact #3.3c – Would the Project disturb any human remains, including those interred outside of formal cemeteries?

See discussion for Impact # 3.3a.

Although unlikely, subsurface construction activities, such as trenching and grading, associated with the proposed Project could potentially disturb previously undiscovered human burial sites. Accordingly, this is a potentially significant impact. Although considered unlikely subsurface construction activities could cause a potentially significant impact to previously undiscovered human burial sites. The records searches did not indicate the presence of human remains, burials, or cemeteries within the Project site. No human remains have been discovered at the Project site, and no burials or cemeteries are known to occur within the area of the site. However, construction would involve earth-disturbing activities, and it is still possible that human remains may be discovered, possibly in association with archaeological sites. Implementation of the below mitigation measure would ensure that the proposed Project would not directly or indirectly destroy previously unknown human remains. The proposed Project would not disturb any known human remains, including those interred outside of formal cemeteries. Therefore, the Project would have a less-than-significant impact with incorporation of Mitigation Measure CUL-2.

LEVEL OF SIGNIFICANCE

Impact would be ***less than significant with mitigation incorporated***.

Impact #3.3d – The project would not cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 that is listed or eligible for listing in the CRHR, or in a local register of historical resource defined in PRC Section 5020.1(k).

See also response to Impact #3.3a through #3.3c, above.

The County's government-to-government consultation efforts with interested Native American groups are conducted pursuant to AB 52. The cultural resources records search at the Information Center and the SLF search conducted by the NAHC did not indicate the presence of tribal cultural resources within or immediately adjacent to the Project site.

In the unlikely event tribal cultural resources are discovered during construction within or immediately adjacent to the Project site, implementation of Mitigation Measures MM CUL-1 and MM CUL-2 would reduce potential impacts of the Project to tribal cultural resources to less than significant levels.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures MM CUL-1 and MM CUL-2.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

Impact #3.3e – The project would not cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 that is 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

See responses to Impacts #3.3a through #3.3d, above.

MITIGATION MEASURE(S)

Implementation of Mitigation Measures MM CUL-1 and MM CUL-2.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant with mitigation incorporated*.

3.4 - Energy

3.4.1 - Introduction

This section evaluates the potential effect the project may have on energy. Responses to this section were provided by the Energy Technical Memorandum (QK, 2020c), and the Air Quality Impact Analysis (Trinity Consultants, 2020), which can be found in Appendix E and Appendix A, respectively, of this TEIR.

3.4.2 - Environmental Setting

The Project is located in Kings County, approximately two miles southeast of Hanford, California at the intersection of State Route (SR) 43 and Jackson Avenue miles from the City of Hanford. The area is predominantly agricultural and rural in nature. Surrounding lands are under crop cultivation and a number of active dairies in the vicinity.

3.4.3 - Regulatory Setting

Federal

Energy Policy and Conservation Act

The Energy Policy and Conservation Act (EPCA) of 1975 was enacted for the purpose of serving the nation's energy demands and promoting conservation methods when feasibly obtainable. Since being enacted on December 22, 1975, EPCA has been amended to:

- Grant specific authority to the President to fulfill obligations of the United States under the international energy program;
- Provide for the creation of a Strategic Petroleum Reserve capable of reducing the impact of severe energy supply interruptions;
- Conserve energy supplies through energy conservation programs, and the regulation of certain energy uses;
- Provide for improved energy efficiency of motor vehicles, major appliances, and certain other consumer products;
- Provide a means for verification of energy data to assure the reliability of energy data; and
- Conserve water by improving the water efficiency of certain plumbing products and appliances.

National Energy Act of 1978

The National Energy Act of 1978 includes the following statutes: Public Utilities Regulatory Policies Act of 1978 (PURPA; Public Law 95-617), Energy Tax Act, National Energy Conservation Policy Act (NECPA), Power Plant and Industrial Fuel Use Act, and the National Gas Policy Act. The Power Plant and Industrial Fuel Use Act restricted the fuel used in power plants; however, these restrictions were lifted in 1987. The Energy Tax Act was superseded

by the Energy Policy Acts of 1992 (EPACT92) and 2005. The National Gas Policy Act gave the Federal Energy Regulatory Commission authority over natural gas production and established pricing guidelines. NECPA set minimum energy performance standards, which replaced those in EPCA and the federal standards preempted those set by the state. NECPA was amended by the EPCA Amendments of 1985. Due to its relevance to electricity considerations, PURPA is discussed in more depth below.

PURPA

The Public Utility Regulatory Policies Act (PURPA) was established in response to the unstable energy climate of the late 1970s. PURPA sought to promote conservation of electric energy. Additionally, PURPA created a new class of non-utility generators, small power producers, from which, along with qualified co-generators, utilities are required to buy power.

PURPA was in part intended to augment electric utility generation with more efficiently produced electricity and to provide equitable rates to electric consumers. Utility companies are required to buy all electricity from a qualifying facility (QF). PURPA expanded participation of non-utility generators in the electricity market and demonstrated that electricity from non-utility generators could successfully be integrated with a utility's own supply. PURPA requires utilities to buy whatever power is produced by QFs (usually cogeneration or renewable energy). The Fuel Use Act of 1978 (FUA) (repealed in 1987) also helped QFs become established. Under the FUA, utilities were not allowed to use natural gas to fuel new generating technologies, but QFs, which were by definition not utilities, were able to take advantage of abundant natural gas and abundant new technologies (such as combined-cycle).

EPACT92

EPACT92 is comprised of 27 titles. It was passed by Congress and set goals, created mandates, and amended utility laws to increase clean energy use and improve overall energy efficiency in the United States. EPACT92 was amended as part of the Energy Conservation and Reauthorization Act of 1998.

ENERGY POLICY ACT OF 2005

The Energy Policy Act of 2005 addresses energy efficiency; renewable energy requirements; oil, natural gas and coal; alternative-fuel use; tribal energy, nuclear security; vehicles and vehicle fuels; hydropower and geothermal energy; and climate change technology. The act provides revised annual energy reduction goals (two percent per year beginning in 2006), revised renewable energy purchase goals, federal procurement of Energy Star or Federal Energy Management Program designated products, federal green building standards, and fuel cell vehicle and hydrogen energy system research and demonstration.

ENERGY INDEPENDENCE AND SECURITY ACT OF 2007 (EISA)

EISA was signed into law on December 19, 2007. The objectives for EISA are to move the United States toward greater energy independence and security, increase the production of clean renewable fuels, protect consumers, increase product, building and vehicle efficiency, promote greenhouse gas (GHG) research, improve the energy efficiency of the federal government, and improve vehicle fuel economy. The renewable fuel standard in EISA established appliance energy efficiency standards for boilers, dehumidifiers, dishwashers, clothes washers, external power supplies, commercial walk-in coolers and freezers; federal buildings; lighting energy efficiency standards for general service incandescent lighting in 2012; and standards for industrial electric motor efficiency.

State

CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS: TITLE 24

California established statewide building energy efficiency standards following legislative action. The legislation required the standards to be cost-effective based on building life cycle and to include both prescriptive and performance-based approaches. The 2005 Building Energy Efficiency Standards were first adopted in November 2003 and took effect October 1, 2005. Subsequently the standards have undergone various updates including 2013, 2016 2019 and now 2020.

The 2013 Building Energy Efficiency Standards went into effect on July 1, 2014. The 2016 standards, which went into effect on January 1, 2017 and will continue to improve upon the current 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 Building Energy Efficiency Standards improve upon the 2016 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. Buildings permitted on or after January 1, 2020, must comply with the 2019 Standards. The California Energy Commission updates the standards every three years.

The 2022 Building Energy Efficiency Standards (Energy Code) will improve upon the 2019 Energy Code for new construction of, and additions and alterations to, residential and nonresidential buildings.

SB 1368 – GHG EMISSIONS PERFORMANCE STANDARDS FOR MAJOR POWER PLANT INVESTMENTS

SB 1368 was passed in September 2006 and requires the CEC to develop and adopt a GHG emissions performance standard for long-term procurement of electricity by local publicly owned utilities. The CPUC and CEC had adopted specific regulations regarding GHG emissions performance standards for electricity service providers. Compliance with these standards is expected to improve fuel efficiency.

RENEWABLES PORTFOLIO STANDARD (RPS)

California's RPS requires retail sellers of electricity to increase their procurement of eligible renewable energy resources by at least one percent per year so that 20 percent of their retail sales are procured from eligible renewable energy resources by 2017. If a seller falls short in a given year, they must procure more renewables in succeeding years to make up the shortfall. Once a retail seller reaches 20 percent renewable resources, they need not increase their procurement in succeeding years. RPS was enacted through SB 1078 – The Renewable Portfolio Standard, signed in September 2002. The CEC and the CPUC are jointly implementing the standard. In 2006, RPS was modified by SB 107 to require retail sellers of electricity to reach the 20 percent renewables goal by 2010. In 2011, RPS was further modified by SB 2 to require retailers to reach 33 percent renewable energy by 2020.

SB 350

SB 350 was approved on October 7, 2015. SB 350 will: (1) increase the standards of the California RPS program by requiring that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030; (2) require the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030; (3) provide for the evolution of the Independent System Operator into a regional organization; and (4) require the state to reimburse local agencies and school districts for certain costs mandated by the state through procedures established by statutory provisions. Among other objectives, the legislature intends to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

EXECUTIVE ORDER (EO) B-18-12

EO B-18-12 was signed into law on April 25, 2012 and directed state agencies to reduce their grid- based energy purchases by at least 20 percent by 2018, as compared to a 2003 baseline. Pursuant to EO B-18- 12, all new state buildings and major renovations beginning design after 2025 shall be constructed as Zero Net Energy facilities with an interim target for 50 percent of new facilities beginning design after 2020 to be Zero Net Energy. State agencies shall also take measures toward achieving Zero Net Energy for 50 percent of the square footage of existing state-owned building area by 2025 and reduce water usage by 20 percent by 2020. Additionally, the following measures relevant to energy are required:

- Any proposed new or major renovation of state buildings larger than 10,000 square feet shall use clean, on-site power generation, such as solar photovoltaic, solar thermal and wind power generation, and clean back-up power supplies, if economically feasible;

- New or major renovated state buildings and build-to-suit leases larger than 10,000 square feet shall obtain a Leadership in Energy and Environmental Design (LEED) "Silver" certification or higher using the applicable version of LEED;
- New and existing buildings shall incorporate building commissioning to facilitate improved and efficient building operation; and
- State agencies shall identify and pursue opportunities to provide electric vehicle charging stations and accommodate future charging infrastructure demand, at employee parking facilities in new and existing buildings.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

Appendix F of the CEQA Guidelines describes the types of information and analyses related to energy conservation that are to be included in Environmental Impact Reports that are prepared pursuant to CEQA. Energy conservation is described in Appendix F of the CEQA Guidelines in terms of decreased per capita energy consumption, decreased reliance on natural gas and oil, and increased reliance on renewable energy sources. To assure that energy implications are considered in project decisions, EIRs must include a discussion of the potentially significant energy impacts of proposed projects, with emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

Projects have long relied on existing energy-reduction requirements in building codes, and on the beneficial side effects of reducing greenhouse gases, to demonstrate that a project's energy use will not be wasteful or inefficient. That approach is no longer sufficient under CEQA, however, without an express assessment (based on facts) of the "before" and "after" energy requirements of proposed projects for construction and operational impacts from all sources (stationary, mobile and area).

Local

KINGS COUNTY 2035 GENERAL PLAN – RESOURCE CONSERVATION ELEMENT

The County's mild climate and agricultural economy make solar heating and waste-to-energy projects viable alternatives to traditional fossil fuel production sources. Sources of biomass, or raw material suitable for conversion to energy, include manure from dairy operations and municipal waste at landfill sites. To improve air quality and achieve greenhouse gas emissions reductions mandated by recent State legislation (AB 32), sustainable and renewable alternative energy sources including wind, solar, hydroelectric and biomass energy can be promoted, and energy conservation measures encouraged. The construction of commercial solar farms in agriculturally zoned land is a conditional use in Kings County and should be directed to lower priority farmland. Future consideration should explore standards to streamline permitting under the site plan review process.

- RC OBJECTIVE G1.2 - Promote the development of sustainable and renewable alternative energy sources, including wind, solar, hydroelectric and biomass energy.

- RC Policy G1.2.1 - Review proposed biomass energy projects through the conditional use permit process of the County Zoning Ordinance and ensure that such projects meet all air quality requirements.
- RC Policy G1.2.2 - Encourage and support efforts to develop commercial alternative energy sources in lower priority agricultural lands within Kings County, when appropriately sited.
- RC Policy G1.2.3 - Support the development and use of small-scale alternative energy sources that provide energy for individual homeowners and businesses.

3.4.4 - IMPACT EVALUATION CRITERIA

Criteria for evaluating adverse effects on energy are:

Would the project:

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?

DISCUSSION

Impact #3.4a – Would the Project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?

The Project includes the construction of an anaerobic lagoon digester and associated infrastructure adjacent to the western boundary of the dairy. The Project does not propose to increase either the dairy herd or employees.

The digester is 300 feet x 264 feet x 32 feet and will hold approximately 10.5 million gallons. In addition, several new dairy-related structures are proposed, including barns, corrals and free stalls. Once the digester and biogas infrastructure are operational, the site will generate approximately 20,749 million BTU/year, thus reducing dependence on fossil fuels that generate air pollution and greenhouse gases emissions, meeting the County and State's climate and energy goals to reduce energy usage, increase energy efficiency and increase the use of forms of renewable energy.

Short-term Construction Energy Usage

Energy usage for construction was developed using the California Emissions Estimator Model (CalEEMod) output files. Project energy consumption levels were estimated for the construction scenario and include: 1) fuel use for construction off-road equipment and construction on-road vehicles; and 2) fuel use from vehicle trips generated by the Project operations during construction.

Table 3.4-1
Land Use

Land Use	Area
General Light Industry	38,750 sq ft

Estimates of average daily traffic (ADT) volumes generated by the proposed dairy expansion are presented in the tables below. Estimates of additional heavy trucks and employees attributable to the expansion were provided by the applicant. Both the heavy truck and employee ADT estimates account for incoming and outgoing trips.

The estimates supplied were the anticipated trucks per month and year for each category. It was assumed from the information that the trips would be evenly spread through the month and therefore, would be a maximum of one additional truck per day for each category. This would equate to two trips (inbound and outbound) for each category of delivery.

Table 3.4-2
Heavy Truck ADT

Load Type	Additional Trucks		ADT
	Monthly	Yearly	
Commodity	11	--	2
Seasonal Forage	--	207	2
Milk	15	--	2
Total			**6**

Based on the ADT estimates above, Table 3.4-3 presents the anticipated fuel usage during Project construction.

Table 3.4-3
Construction Fuel Usage Estimates

Construction Phase	Number of Days	Off Road Equipment Hours[1]	Daily ADT[2]	Total Fuel Usage
Site Preparation	5	40	12	568
Grading	5	40	14	608
Building Construction	42	336	14	28,432
Total Fuel Usage				**29,608 gallons**

1. Off road equipment are conservatively estimated to use 2 gallons per hour operating in place and medium duty diesel trucks are conservatively estimated to use 8 gallons per mile (rounded).
2. Heavy duty trucks are conservatively estimated to use 20 gallons per day, and employee vehicles use 2 gallons per day.

Long-term Operational Energy Usage

Energy usage for operations was developed using the California Emissions Estimator Model (CalEEMod) output files. Project energy consumption levels were estimated for operations and include: (1) fuel use from vehicle trips generated by the Project operations; (2) operational natural gas estimates; and 3) operational electricity estimates.

Table 3.4-4
Land Use

Land Use	Area
General Light Industry	38,750 sq ft

Source: (Trinity Consultants, 2020)

Based on the land use assumptions and the default energy consumption factors for operations included in CalEEMod, Table 3.4-5 presents the estimated annual fuel use, and Table 3.4-6 illustrates operational electricity and natural gas consumption. Since the Project does not propose to increase operational activities, there is no anticipated increase in current energy usage, which would be considered baseline.

Table 3.4-5
Annual Operational Fuel Usage Estimates

Land Use	Annual ADT	Annual Fuel Consumption
General Light Industry	3,650	7,300 gallons

Table 3.4-6
Table 3.4-5 – Annual Operational Energy Consumption Estimates

Land Use	Area	Operational Natural Gas (kBTU/year) (unmitigated)	Operational Electricity (kWh/yr)
General Light Industry	38,750 sq ft	808,712	341,775

Based on the Project gas and electricity consumption estimates summarized in the Tables above, Table 3.4-7 summarizes relative Project energy impacts compared to Kings County 2019 usage. The proposed Project would generate substantially less than one percent of the County's usage.

The Project's relative consumption would be minimal, and less than one percent of the County's usage, which is considered *de minimis*. The proposed Project would not require any increase in annual consumption rates of fuel, electricity and gas. Therefore, natural gas and electricity providers would not need to extend distribution networks and support facilities to serve the proposed Project.

Table 3.4-7
Summary of Project's Operational Energy Consumption

	Operational Natural Gas (kBTU/year) (unmitigated)	Operational Electricity Generated (kWh/yr)
Project Total	808,712	341,775
County Total	34,200,000	37,700,000
Percent	0.023	0.009

The Project's relative consumption would be minimal, and less than one percent of the County's usage, which is considered *de minimis*. The proposed Project would not require any increase in annual consumption rates of fuel, electricity and gas. Therefore, natural gas and electricity providers would not need to extend distribution networks and support facilities to serve the proposed Project.

However, once the digester and biogas infrastructure are operational, the site will generate approximately 20,749 million BTU/year, thus reducing dependence on fossil fuels that generate air pollution and greenhouse gases emissions, meeting the County and State's climate and energy goals to reduce energy usage, increase energy efficiency and increase the use of forms of renewable energy.

Construction equipment and vehicles would use diesel fuel and gasoline. However, use of these resources in this manner is not considered a wasteful use of energy resources. Construction activities would be a necessary component of the project, and a one-time expenditure of non-renewable energy in order to achieve a new source of renewable energy. Additionally, the relatively small increases in electricity consumption during construction of the proposed Project would not create any significant negative impacts on local or regional energy supplies and would not create a significant effect on either peak or baseload energy demand. Thus, construction of the Project would create less than significant impacts on local and regional energy supplies.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be ***less than significant.***

Impact #3.4b – Would the Project conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

The Project will fulfill these Objectives and Policies of the Kings County 2035 General Plan – Resource Conservation Element.

- RC OBJECTIVE G1.2 - Promote the development of sustainable and renewable alternative energy sources, including wind, solar, hydroelectric and biomass energy.
- RC Policy G1.2.2 - Encourage and support efforts to develop commercial alternative energy sources in lower priority agricultural lands within Kings County, when appropriately sited.
- RC Policy G1.2.3 - Support the development and use of small-scale alternative energy sources that provide energy for individual homeowners and businesses.

A proposed change to CEQA Guidelines Section 15064.7 provides that lead agencies may use regulatory standards as thresholds of significance. In order to serve as a threshold, the standard must: (1) be adopted by some formal mechanism; (2) be adopted for environmental protection; (3) govern the impact at issue; and (4) govern the project type. In the case of Energy Impacts Assessment in Kings County, there is not yet a specific threshold of significance.

Typically, there would be a significant energy impact if the increase in demand for electricity or gas would impact the current capacities of the electric and natural gas utilities. However, as stated in Impact #3.4a, above, the Project's relative consumption would be minimal, and less than one percent of the County's usage, which is considered *de minimis*. Therefore, the Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be ***less than significant.***

3.5 - Greenhouse Gases

3.5.1 - INTRODUCTION

This section evaluates the potential effect the project may have on greenhouse gas emissions. Responses to this section were provided by the Air Quality Impact Analysis (Trinity Consultants, 2020), which can be found in Appendix A of this TEIR.

3.5.2 - ENVIRONMENTAL SETTING

Kings County is located in the southern San Joaquin Valley (Figure 2-1). The County is comprised of 1,391 square miles (890,513 acres) of land, predominantly dedicated to agricultural production. The central and eastern portions of the County occupy the relatively flat valley floor; the southwestern portion is characterized by the low hills and intervening valleys of the Kettleman Hills. The 2000 census identified 129,461 people in all of Kings County. In the cities of Avenal, Corcoran, Hanford, and Lemoore, there were approximately 96,907 people, including the 17,874 inmates at the Avenal and Corcoran State Prisons. Another 14,024 people live in the rural communities of Armona, Home Garden, Kettleman City, Lemoore NAS, Santa Rosa Rancheria, and Stratford. The remaining 18,530 people live in the agricultural areas. Irrigated agricultural crop production is the dominant land use on the valley floor and grazing and dry farming predominate in the southwest portion. Kings County is ranked as the 12th leading agricultural county in California (25th in the nation) and is in the top 15 milk producing counties in the nation. Kings County shares boundaries with the top four agricultural counties in the state, Fresno, Tulare, Monterey, and Kern.

3.5.3 - REGULATORY SETTING

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United Nations Framework Convention on Climate Change (UNFCCC) established an agreement with the goal of controlling GHG emissions, including CH_4. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs. Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere (chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform) were phased out by 2000 (methyl chloroform was phased out by 2005).

Global warming and climate change have received substantial public attention for more than 20 years. For example, the United States Global Change Research Program was established by the Global Change Research Act of 1990 to enhance the understanding of natural and human-induced changes in the earth's global environmental system, to monitor, understand and predict global change, and to provide a sound scientific basis for national and international decision making. Even so, analytical tools have not been developed to determine the effect on worldwide global warming from a particular increase in GHG

emissions, or the resulting effects on climate change in a particular locale. The scientific tools needed to evaluate the impacts that a specific project may have on the environment are even farther in the future.

To date, no national standards have been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

Federal

CLEAN AIR ACT

The Federal Clean Air Act (FCAA) does not specifically regulate GHG emissions; however, on April 2, 2007 the U.S. Supreme Court in *Massachusetts v. U.S. Environmental Protection Agency*, determined that GHGs are pollutants that can be regulated under the FCAA. The EPA adopted an endangerment finding and cause or contribute finding for GHGs on December 7, 2009. Under the endangerment finding, the Administrator found that the current and projected atmospheric concentrations of the six, key, well-mixed GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) threaten the public health and welfare of current and future generations. Under the cause or contribute finding, the Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

Based on these findings, on April 1, 2010, the EPA finalized the light-duty vehicle rule controlling GHG emissions. This rule confirmed that January 2, 2011, is the earliest date that a 2012 model year vehicle meeting these rule requirements may be sold in the United States. On May 13, 2010, the EPA issued the final GHG Tailoring Rule. This rule set thresholds for GHG emissions that define when permits under the Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. Implementation of the federal rules is expected to reduce the level of emissions from new motor vehicles and large stationary sources.

ENERGY INDEPENDENCE AND SECURITY ACT OF 2007

The Energy Independence and Security Act of 2007 (December 2007), among other key measures, requires the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020, and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks; and

- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

FEDERAL VEHICLE STANDARDS

In response to the U.S. Supreme Court ruling discussed above, the George W. Bush Administration issued Executive Order 13432 in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Barack Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by six to 23 percent over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program.

CLEAN POWER PLAN AND NEW SOURCE PERFORMANCE STANDARDS FOR ELECTRIC GENERATING UNITS

On October 23, 2015, the EPA published a final rule (effective December 22, 2015) establishing the carbon pollution emission guidelines for existing stationary sources: electric utility generating units (80 FR 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units and (2) stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing standards of performance for GHG emissions from new, modified, and reconstructed stationary sources: electric utility generating units (80 FR 64661–65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the Clean Power Plan pending resolution of several lawsuits. Additionally, in March 2017, President Trump directed the EPA Administrator to review the Clean Power Plan in order to determine whether it is consistent with current executive policies concerning GHG emissions, climate change, and energy.

PRESIDENTIAL EXECUTIVE ORDER 13693

Presidential Executive Order 13693, Planning for Federal Sustainability in the Next Decade, signed in 2015, seeks to maintain federal leadership in sustainability and greenhouse gas emission reductions. Its goal is to reduce agency Scope 1 and 2 GHG emissions by at least 40 percent by 2025, foster innovation, reduce spending, and strengthen communities through increased efficiency and improved environmental performance. Sustainability goals are set for building efficiency and management, energy portfolio, water use efficiency, fleet efficiency, sustainable acquisition and supply chain greenhouse gas management, pollution prevention, and electronic stewardship.

PRESIDENTIAL EXECUTIVE ORDER 13783

Presidential Executive Order 13783, Promoting Energy Independence and Economic Growth (March 28, 2017), orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of carbon, nitrous oxide, and methane.

State

CALIFORNIA AIR RESOURCES BOARD

CARB is responsible for the coordination and oversight of State and local air pollution control programs in California. The CAAQS were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the NAAQS, are generally more stringent and

apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility-reducing particulates, hydrogen sulfide and sulfates.

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation, such as the landmark AB 32 California Global Warming Solutions Act of 2006, was specifically enacted to address GHG emissions. Other legislation, such as Title 24 building efficiency standards and Title 20 appliance energy standards, were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation.

CARB Scoping Plan

CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that would be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as "business-as-usual"). The Scoping Plan evaluates opportunities for sector-specific reductions; integrates early actions by CARB and the State's Climate Action Team and additional GHG reduction measures by both entities; identifies additional measures to be pursued as regulations; and outlines the adopted role of a cap-and-trade program. Additional development of these measures and adoption of the appropriate regulations occurred through the end of 2013. Key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent by 2020;
- Developing a California cap-and-trade program that links with other programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions (adopted in 2011);
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets (several Sustainable Communities Strategies have been adopted);
- Adopting and implementing measures pursuant to existing State laws and policies, including California's Clean Car Standards, heavy-duty truck measures, the Low Carbon Fuel Standard (amendments to the Pavley Standard adopted 2009; Advanced Clean Car Standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (adopted 2009); and
- Creating targeted fees, including a public goods charge on water use, fees on gasses with high global warming potential, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation (CARB, 2008)

In 2012, CARB released revised estimates of the expected 2020 emissions reductions. The revised analysis relied on emissions projections updated in light of current economic forecasts that accounted for the economic downturn since 2008, reduction measures already

approved and put in place relating to future fuel and energy demand, and other factors. This update reduced the projected 2020 emissions from 596 million metric tons of CO_2e ($MMTCO_2e$) to 545 $MMTCO_2e$. The reduction in forecasted 2020 emissions means that the revised business-as-usual reduction necessary to achieve AB 32's goal of reaching 1990 levels by 2020 is now 21.7 percent, down from 29 percent. CARB also provided a lower 2020 inventory forecast that incorporated State-led GHG emissions reduction measures already in place. When this lower forecast is considered, the necessary reduction from business-as-usual needed to achieve the goals of AB 32 is approximately 16 percent.

CARB adopted the first major update to the Scoping Plan on May 22, 2014. The updated Scoping Plan summarizes the most recent science related to climate change, including anticipated impacts to California and the levels of GHG emissions reductions necessary to likely avoid risking irreparable damage. It identifies the actions California has already taken to reduce GHG emissions and focuses on areas where further reductions could be achieved to help meet the 2020 target established by AB 32.

In 2016, the legislature passed SB 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the legislature passed companion legislation, AB 197, which provides additional direction for developing the Scoping Plan. On December 14, 2017 CARB adopted a second update to the Scoping Plan. The 2017 Scoping Plan details how the State will reduce GHG emissions to meet the 2030 target set by Executive Order B-30-15 and codified by SB 32. Other objectives listed in the 2017 Scoping Plan are to provide direct GHG emissions reductions; support climate investment in disadvantaged communities; and, support the Clean Power Plan and other federal actions.

ASSEMBLY BILL 32 (CALIFORNIA GLOBAL WARMING SOLUTIONS ACT)

Assembly Bill (AB) 32 instructs CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. AB 32 directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. It set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

SENATE BILL 32 (CALIFORNIA GLOBAL WARMING SOLUTIONS ACT OF 2006: EMISSIONS LIMIT)

Signed into law in September 2016, Senate Bill (SB) 32 codifies the 2030 GHG reduction target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

SB 375 (THE SUSTAINABLE COMMUNITIES AND CLIMATE PROTECTION ACT OF 2008)

Signed into law on September 30, 2008, SB 375 provides a process to coordinate land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction goals established by AB 32. SB 375 requires metropolitan planning organizations to include sustainable community strategies in their regional transportation

plans for reducing GHG emissions, aligns planning for transportation and housing, and creates specified incentives for the implementation of the strategies.

AB 1493 (Pavley Regulations and Fuel Efficiency Standards)

California AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the U.S. EPA's denial of an implementation waiver. The U.S. EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011. The regulations establish one set of emission standards for model years 2009–2016 and a second set of emissions standards for model years 2017 to 2025. By 2025, when all rules will be fully implemented, new automobiles will emit 34 percent fewer CO_2e emissions and 75 percent fewer smog-forming emissions.

SB 1368 (Emission Performance Standards)

SB 1368 is the companion bill of AB 32, which directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 limits carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than five years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. The new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The California Public Utilities Commission adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 lbs. CO_2 per megawatt-hour (MWh).

SB 1078 and SBX1-2 (Renewable Electricity Standards)

SB 1078 requires California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Executive Order S-21-09 also directed CARB to adopt a regulation by July 31, 2010, requiring the State's load serving entities to meet a 33 percent renewable energy target by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. SBX1-2, which codified the 33 percent by 2020 goal.

SB 350 (Clean Energy and Pollution Reduction Act of 2015)

Signed into law on October 7, 2015, SB 350 implements the goals of Executive Order B-30-15. The objectives of SB 350 are to increase the procurement of electricity from renewable sources from 33 percent to 50 percent (with interim targets of 40 percent by 2024, and 25

percent by 2027) and to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation. SB 350 also reorganizes the Independent System Operator (ISO) to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.

Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs through the use of executive orders. Although not regulatory, they set the tone for the State and guide the actions of State agencies.

EXECUTIVE ORDER S-3-05

Executive Order S-3-05 was issued on June 1, 2005, which established the following GHG emissions reduction targets:

- By 2010, reduce greenhouse gas emissions to 2000 levels;
- By 2020, reduce greenhouse gas emissions to 1990 levels; and
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

EXECUTIVE ORDER S-01-07

Issued on January 18, 2007, Executive Order S-01-07 mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. CARB adopted the Low Carbon Fuel Standard on April 23, 2009.

EXECUTIVE ORDER S-13-08

Issued on November 14, 2008, Executive Order S-13-08 facilitated the California Natural Resources Agency development of the 2009 California Climate Adaptation Strategy. Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

EXECUTIVE ORDER S-14-08

Issued on November 17, 2008, Executive Order S-14-08 expands the State's Renewable Energy Standard to 33 percent renewable power by 2020. Additionally, Executive Order S-

21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring 33 percent of electricity sold in the State come from renewable energy by 2020. CARB adopted the "Renewable Electricity Standard" on September 23, 2010, which requires 33 percent renewable energy by 2020 for most publicly owned electricity retailers.

EXECUTIVE ORDER S-21-09

Issued on July 17, 2009, Executive Order S-21-09 directs CARB to adopt regulations to increase California's Renewable Portfolio Standard (RPS) to 33 percent by 2020. This builds upon SB 1078 (2002), which established the California RPS Program, requiring 20 percent renewable energy by 2017, and SB 107 (2006), which advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II.

EXECUTIVE ORDER B-30-15

Issued on April 29, 2015, Executive Order B-30-15 established a California GHG reduction target of 40 percent below 1990 levels by 2030 and directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of $MMCO_2e$. The 2030 target acts as an interim goal on the way to achieving reductions of 80 percent below 1990 levels by 2050, a goal set by Executive Order S-3-05. The executive order also requires the State's Climate Adaptation Plan to be updated every three years and for the State to continue its climate change research program, among other provisions. With the enactment of SB 32 in 2016, the legislature codified the goal of reducing GHG emissions by 2030 to 40 percent below 1990 levels.

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

TITLE 20 APPLIANCE EFFICIENCY REGULATIONS

The appliance efficiency regulations (California Code of Regulations Title 20, Sections 1601-1608) include standards for new appliances. Twenty-three categories of appliances are included in the scope of these regulations. These standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances.

TITLE 24 BUILDING ENERGY EFFICIENCY STANDARDS

California's Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations Title 24, Part 6), was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore,

increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2016 Building Energy Efficiency Standards approved on January 19, 2016 went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and take effect on January 1, 2020. Under the 2019 standards, homes will use about 53 percent less energy and nonresidential buildings will use about 30 percent less energy than buildings under the 2016 standards.

TITLE 24 CALIFORNIA GREEN BUILDING STANDARDS CODE

The California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) commonly referred to as the CALGreen Code, is a statewide mandatory construction code developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and commercial buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code went into effect January 1, 2017.

Local

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT

San Joaquin Valley Air Pollution Control District (SJVAPCD) is the primary agency responsible for addressing air quality concerns in Fresno County—its role is discussed further in Section 4.3, *Air Quality.* SJVAPCD recommends methods for analyzing project generated GHGs in CEQA analyses and offers multiple potential GHG reduction measures for land use development projects. SJVAPCD has developed thresholds of significance to provide a uniform scale to measure the significance of GHG emissions from land use and stationary source projects in compliance with CEQA and AB 32. SJVAPCD's goals in developing GHG thresholds include ease of implementation; use of standard analysis tools; and emissions mitigation consistent with AB 32.

KINGS COUNTY GENERAL PLAN

The Air Quality Element establishes a central place for goals, objectives and policies to guide and address the wide range of air quality issues facing Kings County. These goals, objectives and policies are consistent with other General Plan Elements, the four Community Plans described therein, and the Kings County Association of Governments (KCAG) Regional Transportation Plan.

- AQ GOAL C1 - Use Air Quality Assessment and Mitigation programs and resources of the SJVAPCD and other agencies to minimize air pollution, related public health effects, and potential climate change impacts within the County.

- AQ Policy C1.1.2 - Assess and mitigate project greenhouse gas/climate change impacts using analysis methods and significance thresholds as defined or recommended by the SJVAPCD, KCAG or California Air Resources Board (ARB) depending on the type of project involved.
- AQ GOAL G1 - Reduce Kings County's proportionate contribution of greenhouse gas emissions and the potential impact that may result on climate change from internal governmental operations and land use activities within its authority. AQ OBJECTIVE G1.1 Identify and achieve greenhouse gas emission reduction targets consistent with the County's proportionate fair share as may be allocated by ARB and KCAG.
- AQ Policy G1.1.1 - As recommended in ARB's Climate Change Adopted Scoping Plan (December 2008), the County establishes an initial goal of reducing greenhouse gas emissions from its internal governmental operations and land use activities within its authority to be consistent with ARB's adopted reduction.

Kings County General Plan Dairy Element

- AQ - 31 targets for the year 2020. The County will also work with KCAG to ensure that it achieves its proportionate fair share reduction in greenhouse gas emissions as may be identified under the provisions of SB 375 (2008 Chapter 728) for any projects or activities requiring approval from KCAG.
- AQ Policy G1.1.2 - Progress in meeting the goals specified in AQ Policy G1.1.1 will be monitored and reported to the Board of Supervisors in the Annual Progress Report required by Government Code Section 65400(a)(2). Should the Board determine that sufficient progress is not being made to achieve the identified goals, or that proposed measures are ineffective or insufficient in meeting the goals, additional measures will be adopted as necessary.
- AQ Policy G1.1.3 - County staff should explore opportunities to utilize the net emission reductions identified through the confined animal feeding operation approval process to offset greenhouse gas emissions on a regional basis.

3.5.4 - IMPACT EVALUATION CRITERIA

Criteria for evaluating adverse effects related to greenhouse gases are:

Would the project:

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

DISCUSSION

Global climate change refers to changes in average climatic conditions on earth as a whole, including temperature, wind patterns, precipitation and storms. Global warming, a related

concept, is the observed increase in the average temperature of the earth's surface and atmosphere, which in turn can cause other climatic changes, such as a shift in the frequency and intensity of rainfall or hurricanes. Global warming does not necessarily imply that all locations will be warmer. Some specific, unique, locations may be cooler even though the world, on average, is warmer.

While global warming can be caused by natural processes, there is a general scientific consensus that most current global warming is the result of human activity on the planet. This man-made, or anthropogenic, warming is primarily caused by increased emissions of greenhouse gases ("GHGs") that keep the earth's surface warm. This is called "the greenhouse effect." The greenhouse effect and the role GHGs play in it are described below.

The Greenhouse Effect

Gases that trap heat in the atmosphere are called GHGs, analogous to the way a greenhouse retains heat. The accumulation of GHGs in the atmosphere regulates the earth's temperature. The GHGs absorb longwave radiant energy reflected by the earth, which warms the atmosphere. GHG also radiate longwave energy both upward to space and back down toward the surface of the earth. The downward part of this longwave radiation that is absorbed in the atmosphere is known as the "greenhouse effect." Without the natural heat trapping effect of GHG, the earth's surface would be cooler by about 34 degrees Centigrade (°C). It is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gasses in the atmosphere beyond the level of naturally occurring concentrations. Some studies indicate that the potential effects of global climate change may include rising surface temperatures, loss in snow pack, rise of sea levels, more extreme heat days per year, and more drought years

The six major GHGs identified by the Kyoto Protocol are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), haloalkanes (HFCs), and perfluorocarbons (PFCs). The effect each of these gases has on global warming is a combination of the volume of their emissions and their global warming potential (GWP). The global warming potential (GWP) is the potential of a gas or aerosol to trap heat in the atmosphere. Individual GHG species have varying GWP and atmospheric lifetimes.

The most important CHG in human-induced global warming is CO_2. While many gases have much higher GWPs than the naturally occurring GHGs, CO_2 is emitted in such vastly higher quantities than other GHGs that it accounts for 85 percent of the GWP of all GHGs emitted by the United States. CO_2 is an odorless, colorless gas, which has both natural and anthropogenic sources. Natural sources include the following: respiration of bacteria, plants, animals, and fungus; evaporation from oceans; decomposition of dead organic matter; and volcanic outgassing. Anthropogenic sources of CO_2 are from burning coal, oil, natural gas, and wood. In addition to the sheer increase in the volume of its emissions, CO_2 is a major factor in human-induced global warming because of its lifespan in the atmosphere of 50 to 200 years.

CH_4 is a flammable gas and is the main component of natural gas and of the biogas from this project. When one molecule of CH_4 is burned in the presence of oxygen, one molecule of CO_2

and two molecules of water are released. A natural source of CH_4 is from the anaerobic decay of organic matter. Geologic deposits, known as natural gas fields, also contain CH_4, which is extracted for fuel. Other sources are from rice production, gas mining, landfills, fermentation of manure, and cattle. CH_4 has a relatively short atmospheric lifespan of only 12 years, but has a higher GWP than CO_2.

N_2O, also known as laughing gas, is a colorless greenhouse gas. Higher concentrations of N_2O can cause euphoria, dizziness, and slight hallucinations. N_2O is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (nitric acid production, nylon production, fossil fuel-fired power plants, and vehicle emissions) also contribute to its atmospheric load. It is used in racecars, rocket engines, and as an aerosol spay propellant. Nitrous oxide's 120-year atmospheric lifespan increases its role in global warming.

Other contributing GHGs have little or no relationship to this project.

Significance Criteria

To determine whether a proposed Project could create a potential CEQA impact, local, State, and federal agencies have developed various means by which a project's impacts may be measured and evaluated. Such means can generally be categorized as follows:

- Thresholds of significance adopted by air quality agencies to guide lead agencies in their evaluation of air quality impacts under the CEQA;
- Regulations established by air districts, CARB, and EPA for the evaluation of stationary sources when applying for Authorities to Construct, Permits to Operate, and other permit program requirements (e.g., New Source Review);
- Thresholds utilized to determine if a project would cause or contribute significantly to violations of the ambient air quality standards or other concentration-based limits; and
- Regulations applied in areas where severe air quality problems exist.

Global Climate Change Thresholds of Significance

On December 17, 2009, SJVAPCD adopted Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (San Joaquin Valley Air Pollution Control District, 2009), which outlined the SJVAPCD's methodology for assessing a project's significance for GHGs under CEQA. The following criteria was outlined in the document to determine whether a project could have a significant impact:

- Projects determined to be exempt from the requirements of CEQA would be determined to have a less than significant individual and cumulative impact for GHG emissions and would not require further environmental review, including analysis of project specific GHG emissions. Projects exempt under CEQA would be evaluated

consistent with established rules and regulations governing project approval and would not be required to implement Best Performance Standards (BPS);

- Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement BPS;
- Projects implementing Best Performance Standards would not require quantification of project specific GHG emissions. Consistent with CEQA Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions;
- Projects not implementing Best Performance Standards would require quantification of project specific GHG emissions and demonstration that project specific GHG emissions would be reduced or mitigated by at least 29 percent, compared to Business-as-Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period. Projects achieving at least a 29 percent GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG; and
- Notwithstanding any of the above provisions, projects requiring preparation of an Environmental Impact Report for any other reason would require quantification of project specific GHG emissions. Projects implementing BPS or achieving at least a 29 percent GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.

Impact #3.5a – Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impacts to Greenhouse Gases and Climate Change

The proposed Project's construction and operational GHG emissions were estimated using the CalEEMod program (version 2016.3.2). These emissions are summarized in Table 3.5-1.

The Project will not result in the emissions of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), or sulfur hexafluoride (SF6), the other gases identified as GHG in AB 32. The proposed Project will be subject to any regulations developed under AB 32 as determined by CARB. In order for the Project to be considered less than significant, it would need to conform with the goals of AB 32.

Table 3.5-1
Estimated Annual GHG Emissions (MT/Year)

Source	CO_2	CH_4	N_2O	CO_2e
Construction Emissions				
2020 Construction Emissions	132.57	0.040	0.000	133.56
Operational Emissions				
Mobile Emissions	0.000	0.000	0.000	0.000
Stationary Source Emissions	0.000	0.000	0.000	0.000
Energy Emissions	0.000	0.000	0.000	0.000
Total Project Operational Emissions	0.000	0.000	0.000	0.000
Annualized Construction Emissions*	4.42	0.001	0.000	4.45
Project Emissions	4.42	0.001	0.000	4.45

Note: 0.000 could represent <0.000
* Per South Coast AQMD's Methodology

Annualized GHG emissions from the Project's construction are minimal and temporary. Once operational, the Project would not generate any new GHG emissions. As noted in Section 3.1 Air Quality, the installation of the lined, covered digester lagoon would reduce the criteria pollutants, VOCs and odors. Therefore, consistent with SJVAPCD Policies APR 2005 and APR 2025, the GHG emissions increases associated with this Project would have a *less than significant* individual and cumulative impact on global climate change and the environment.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be ***less than significant***.

Impact #3.5b – Would the Project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Global Climate Change Regulatory Issues

In 1988, the United Nations established the Intergovernmental Panel on Climate Change to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United Nations Framework Convention on Climate Change established an agreement with the goal of controlling GHG emissions, including methane. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs. Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete O_3 in the stratosphere

(chlorofluorocarbons [CFCs], halons, carbon tetrachloride, and methyl chloroform) were phased out by 2000 (methyl chloroform was phased out by 2005).

On September 27, 2006, Assembly Bill 32 (AB32), the California Global Warming Solutions Act of 2006 (the Act) was enacted by the State of California. The legislature stated, "global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." The Act caps California's GHG emissions at 1990 levels by 2020. The Act defines GHG emissions as all of the following gases: carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. This agreement represents the first enforceable statewide program in the U.S. to cap all GHG emissions from major industries that includes penalties for non-compliance. While acknowledging that national and international actions will be necessary to fully address the issue of global warming, AB 32 lays out a program to inventory and reduce GHG emissions in California and from power generation facilities located outside the state that serve California residents and businesses.

AB32 charges CARB with responsibility to monitor and regulate sources of GHG emissions in order to reduce those emissions. CARB has adopted a list of discrete early action measures that can be implemented to reduce GHG emissions. CARB has defined the 1990 baseline emissions for California and has adopted that baseline as the 2020 statewide emissions cap. CARB is conducting rulemaking for reducing GHG emissions to achieve the emissions cap by 2020. In designing emission reduction measures, CARB must aim to minimize costs, maximize benefits, improve and modernize California's energy infrastructure, maintain electric system reliability, maximize additional environmental and economic co-benefits for California, and complement the state's efforts to improve air quality.

Global warming and climate change have received substantial public attention for more than 20 years. For example, the United States Global Change Research Program was established by the Global Change Research Act of 1990 to enhance the understanding of natural and human-induced changes in the Earth's global environmental system, to monitor, understand and predict global change, and to provide a sound scientific basis for national and international decision-making. Even so, the analytical tools have not been developed to determine the effect on worldwide global warming from a particular increase in GHG emissions, or the resulting effects on climate change in a particular locale. The scientific tools needed to evaluate the impacts that a specific project may have on the environment are even farther in the future.

The California Supreme Court's most recent CEQA decision on the Newhall Ranch development case, Center for Biological v. California Department of Fish and Wildlife (November 30, 2015, Case No. 217763), determined that the project's Environmental Impact Report (EIR) did not substantiate the conclusion that the GHG cumulative impacts would be less than significant. The EIR determined that the Newhall Ranch development project would reduce GHG emissions by 31 percent from business as usual (BAU). This reduction was compared to the California's target of reducing GHG emissions statewide by 29 percent from business as usual. The Court determined that "the EIR's deficiency stems from taking a quantitative comparison method developed by the Scoping Plan as a measure of the

greenhouse gas reduction effort required by the state as a whole, and attempting to use that method, without adjustments, for a purpose very different from its original design." In the Court's final ruling it offered suggestions that were deemed appropriate use of the BAU methodology:

- Lead agencies can use the comparison to BAU methodology if they determine what reduction a particular project must achieve in order to comply with statewide goals;
- Project design features that comply with regulations to reduce emissions may demonstrate that those components of emissions are less that significant; and
- Lead agencies could also demonstrate compliance with locally adopted climate plans or could apply specific numerical thresholds developed by some local agencies.

As discussed in Impact #3.5a, Significance Criteria, the SJVAPCD has developed thresholds to determine significance of a proposed project – either implement Best Performance Standards or achieve a 29 percent reduction from BAU (a specific numerical threshold). Therefore the 29 percent reduction from BAU is applied to the subject Project in order to determine significance. The GHG analysis for this Project follows the suggestions from the Court's ruling on the Newhall Ranch development project in order to determine significance using the project design features.

Feasible and Reasonable Mitigation Relative to Global Warming

CEQA requires that all feasible and reasonable mitigation be applied to the project to reduce the impacts from construction and operations on air quality. The SJVAPCD's "Non-Residential On-Site Mitigation Checklist" was utilized in preparing the mitigation measures and evaluating the projects features. These measures include using controls that limit the exhaust from construction equipment and using alternatives to diesel when possible.

Additional reductions would be achieved through the regulatory process of the air district and CARB as required changes to diesel engines are implemented, which would affect the product delivery trucks and limits on idling.

While it is not possible to determine whether the Project individually would have a significant impact on global warming or climate change, the Project would potentially contribute to cumulative GHG emissions in California as well as to related health effects. The Project emissions would only be a very small fraction of the statewide GHG emissions. However, without the necessary science and analytical tools, it is not possible to assess, with certainty, whether the Project's contribution would be cumulatively considerable, within the meaning of CEQA Guidelines Sections 15065(a)(3) and 15130.

CEQA, however, does note that the more severe environmental problems, the lower the thresholds for treating a project's contribution to cumulative impacts as significant. Given the position of the legislature in AB 32, which states that global warming poses serious detrimental effects, and the requirements of CEQA for the lead agency to determine that a project not have a cumulatively considerable contribution, the effect of the Project's CO_2 contribution may be considered cumulatively considerable. This determination is

"speculative," given the lack of clear scientific evidence or other criteria for determining the significance of the Project's contribution of GHG to the air quality in the SJVAB.

The strategies currently being implemented by CARB may help in reducing the Project's GHG emissions and are summarized in the table below.

Not all of these measures are currently appropriate or applicable to the proposed Project. While future legislation could further reduce the Project's GHG footprint, the analysis of this is speculative and in accordance with CEQA Guidelines Section 15145, will not be further evaluated in this AQIA.

Table 3.5-2
Select CARB GHG Emission Reduction Strategies

Strategy	Description of Strategy
Vehicle Climate Change Standards	AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by CARB in Sept. 2004.
Diesel Anti-Idling	In July 2004, CARB adopted a measure to limit diesel-fueled retail motor vehicle idling.
Other Light-Duty Vehicle Technology	New standards would be adopted to phase in beginning in the 2017 model year.
Alternative Fuels: Biodiesel Blends	CARB would develop regulations to require the use of 1% to 4% Biodiesel displacement of California diesel fuel.
Alternative Fuels: Ethanol	Increased use of ethanol fuel.
Heavy-Duty Vehicle Emission Reduction Measures	Increased efficiency in the design of heavy-duty vehicles and an educational program for the heavy-duty vehicle sector.

CEQA Guidelines Section 15130 notes that sometimes the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis. Global climate change is this type of issue. The causes and effects may not be just regional or statewide, they may also be worldwide. Given the uncertainties in identifying, let alone quantifying the impact of any single project on global warming and climate change, and the efforts made to reduce emissions of GHGs from the Project through design, in accordance with CEQA Section 15130, any further feasible emissions reductions would be accomplished through CARB regulations adopted pursuant to AB 32.

Annualized GHG emissions from the Project's construction operations are minimal and temporary. Therefore, consistent with SJVAPCD Policies APR 2005 and APR 2025, the GHG emissions increases associated with this Project would have a *less than significant* individual and cumulative impact on global climate change, and would not conflict with any applicable

plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be *less than significant*.

3.6 - Transportation

3.6.1 - INTRODUCTION

This section evaluates the potential effect the project may have on traffic circulation. The analysis in this section is based on a Traffic Investigation and VMT Evaluation prepared for the Project (Ruettgers & Schuler, 2020), which can be found in Appendix E of this TEIR.

It should be noted that the study overestimates the average daily traffic (ADT) volumes generated by the proposed Project. The analysis was based on an anticipated expansion of the dairy herd and number of employees. However, subsequent to the completion of the analysis, the Project was modified to eliminate both the increase in the herd and employees. Therefore, the Project's potential impacts to transportation and traffic have been overestimated in the study and in this TEIR.

3.6.2 - ENVIRONMENTAL SETTING

The transportation system for Kings County is composed of one interstate highway, several State highways, and numerous county and city roads. More than two-thirds (69 percent) of the 1,412 miles of maintained roadways are under the jurisdiction of Kings County. The State of California Department of Transportation (Caltrans) maintains the one interstate freeway, Interstate 5, that traverses the western part of Kings County, plus portions of six State highways. The cities of Hanford, Lemoore, Corcoran, and Avenal maintain the portions of local roads within their city limits.

The 2018 Kings County Regional Transportation Plan (RTP) identifies two sets of key transportation facilities: the Countywide Regional System of the most heavily used County and State rural roads; and Regionally Significant Roads in Urban Areas, which include busy roads that transect urban areas (Kings County Association of Governments, 2018).

Included in this system are 157.3 miles of State-maintained regional routes, including Interstate 5. These are among the most important roads in this area because they serve most of the travel between Kings and surrounding counties and carry a significant portion of intra-county traffic. The regionally significant, County-maintained roadway system satisfies the majority of the remaining intercounty demand.

3.6.3 - REGULATORY SETTING

Regional

2018 REGIONAL TRANSPORTATION PLAN AND SUSTAINABLE COMMUNITIES STRATEGY FOR KINGS COUNTY

The 2018 RTP/SCS Update was adopted in 2018 (Kings County Association of Governments, 2018). A comprehensive program environmental impact report was prepared for the 2014 RTP/SCS pursuant to CEQA. The 2018 RTP/SCS update lists roadway projects to improve the

transportation system during the 2018- 2042 planning period. Although a number of projects from the 2014 RTP/SCS have been completed, many have not and have been incorporated into the 2018 RTP/SCS.

State

State requirements for long-range transportation plans are similar to the federal regulations. However, key additional requirements described in Government Code Section 65080 include:

- Compliance with CEQA;
- Consistency with State Transportation Improvement Program;
- Use of program level performance measures that include goals and objectives; and
- RTPs must include a policy element, an action element, and a financial element.

Plans must also include a Sustainable Communities Strategy (SCS), pursuant to Senate Bill (SB) 375 (see SB 375 discussion below).

STATE REGIONAL TRANSPORTATION PLAN REQUIREMENTS

Government Code Sections 65080 et seq. state that MPOs must prepare and adopt a long-range transportation plan, such as a RTP or Metropolitan Transportation Plan (MTP), directed at achieving a coordinated and balanced regional transportation system, including, but not limited to, mass transportation, highway, railroad, maritime, bicycle, pedestrian, goods movement and aviation facilities and services. The plan must be action-oriented and pragmatic, considering both the short-term and long-term future, and shall present clear, concise policy guidance to local and state officials. The transportation plan must consider factors specified in the FAST Act metropolitan transportation planning rules (23 CFR Part 450 and 49 CFR Part 613), and each transportation planning agency must consider and incorporate, as appropriate, the transportation plans of cities, counties, districts, private organizations and state and federal agencies. KCAG is the designated MPO for Kings County.

Pursuant to Government Code Section 65080(d), MPOs, such as KCAG, that are located in nonattainment and monitoring areas must update their long-range transportation plans at least every four years. If the current long-range transportation plan is determined to be adequate such that an update is not warranted, the MPO may re-adopt the current plan.

The California Transportation Commission (CTC) has developed guidelines to assist MPOs with developing their RTPs so that they are consistent with federal and State transportation planning requirements. The guidelines are updated and adopted periodically, as needed. For the first time, two separate guidelines were adopted in January 2017 to guide RTP development in MPOs and regional transportation planning agencies (RTPA). Both documents incorporate new legislation and the associated goals, particularly related to reducing GHG emissions and improving air quality. Both the 2017 RTP Guidelines for MPOs (California Transportation Commission, 2017a) and the 2017 RTP Guidelines for RTPAs (California Transportation Commission, 2017b) specify that the requirements outlined in

the documents apply to all RTP updates begun following adoption. Since the 2018 RTP/SCS was started after the January 2017 adoption date of the 2017 RTP Guidelines, the 2017 RTP Guidelines are applicable to the 2018. RTP/SCS.

The 2017 RTP Guidelines include guidelines for regional travel demand modeling. The regional travel demand model guidelines are "scaled" to different sizes of MPOs. The guidelines also describe the methods for projecting of future travel demand, as well as the key assumptions typical of transportation demand models. Additionally, the guidelines describe the consultation and coordination process, which are designed to foster involvement by all interested parties including air quality agencies, discuss the environmental considerations of an RTP, and list the general contents of an RTP document. Senate Bill 375. The Sustainable Communities Strategy and Climate Protection Act, SB 375 (codified at CAL.GOVT CODE §§ 14522.1, 14522.2, 65080.01, 65080, 65400, 65583, 65584.01, 65584.02, 65584.04, 65587, 65588; CAL. PUB. RES. CODE §§2161.3, 21155, 21159.28), is a law passed in 2008 by the California legislature that requires each MPO to demonstrate, through the development of an SCS, how its region will integrate transportation, housing, and land use planning to meet the greenhouse gas (GHG) reduction targets set by the State. In addition to creating requirements for MPOs, it also creates requirements for the CTC and California Air Resources Board (CARB).

Local

KINGS COUNTY GENERAL PLAN DAIRY ELEMENT

Policy DE 3.1f: All applications for new dairies or expansions of existing dairies shall continue to be submitted to the Kings County Public Works Department and Caltrans for a determination as to whether encroachment permits or other site-specific transportation improvements are required by those agencies.

Policy DE 3.1g: Upon the request of an applicant for a SPR or CUP, the Kings County Regional Transportation Planning Agency will evaluate the effect a new or expanding dairy project will have on surrounding roadways and highways using its traffic model. If the traffic model run demonstrates that the dairy project will not result in degradation of the Level of Service (LOS) of adjacent County roadways below LOS D, or below LOS C on State highways, no additional evaluation will be required.

If the Kings County Regional Transportation Planning Agency's traffic model demonstrated that the LOS will be degraded to a LOS E or lower on adjacent roadways, or to LOS D on State highways, a conditional use permit (CUP) will be required. In such a case the Technical Report accompanying the CUP application shall include a Traffic Impact Study (see Component 8 of Appendix J) prepared by a qualified traffic engineer in conformance with guidelines provided by the California Department of Transportation. Any additional environmental review shall focused on traffic related environmental issues and the Traffic Impact Study shall demonstrate that the proposed dairy project will not result in significant safety hazards.

3.6.4 - IMPACT EVALUATION CRITERIA

Criteria for evaluating adverse effects related to transportation are:

Would the project:

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 CQA Guidelines Section 15064.3, subdivision (b)?*
c) *Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*
d) *Result in inadequate emergency access?*

DISCUSSION

Impact #3.6a – Would the Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

The project is within a rural land use area and the Project would not require public transit, or non-motorized transportation facilities during construction and operation. The project will adhere to all design standards established by County. The Project is consistent with the County Circulation Element Level of Service thresholds. Peak construction is estimated to generate a maximum of 10 trips per day, based on a construction crew of a maximum 10 people, assuming crews will ride-share to the job site. Because this increase will not result in traffic volumes exceeding Level of Service Threshold volumes shown on Table C-3 of the County Circulation Element, and Level of Service will not fall below LOS D on County Roads or LOS C on SR-43, the project does not conflict with any plans or ordinances regarding the effectiveness of the circulation system.

The Project would not conflict with any existing programs, plans, ordinances, or policies related to the circulation system. The Project would continue to comply with the General Plan policies and related ordinances. There would be *no impacts*.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be ***less than significant.***

Impact #3.6b – Would the Project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

As note previously, the Project does not propose to increase the dairy herd or number of employees. As noted in the Section 2.4.2 - temporary construction will be conducted by between 5-10 workers. The workers will travel to and from the dairy using their personal

vehicles, and it is assumed that they will ride-share. Access to the site will be from SR 43, and Jackson Avenue. Excavation and construction equipment will be kept on site for the duration of construction, typically 6 to 8 months. Once construction was completed the dairy would continue to generate the same amount of vehicle trips and miles traveled as is currently generated, which is baseline.

It is important to note that employees and crew would be drawn from the same population centers as existing employees. Therefore, the proposed dairy expansion is not anticipated to impact passenger vehicle miles traveled (VMT), and consequently, per CEQA Guideline Section 15064.3, subdivision (b), is presumed to result in a less than significant impact related to vehicle miles traveled.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

Impacts would be ***less than significant.***

Impact #3.6c – 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)?

See Impact #3.6a, above.

The Project will not change any roadways or create any hazards due to geometric design features or incompatible uses. The proposed Project does not include design features that would increase hazards or incompatible uses, because the project would not include the construction of any streets or roads. There would be no impact.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

Impact #3.6d – Would the Project result in inadequate emergency access?

See Impact #3.6a, above.

The proposed project would not result in inadequate emergency access. Emergency access to the site would be via SR 43, 6th Avenue, Kansas Avenue, 10½ Avenue, and Lansing Avenue. These roads provide full access to the entire Project site. No public roads would be modified as a result of this Project; therefore, there would be no impact to any emergency access.

MITIGATION MEASURE(S)

No mitigation is required.

LEVEL OF SIGNIFICANCE

There would be *no impact*.

CHAPTER 4 - EVALUATION OF ALTERNATIVES

4.1 - Introduction

An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives (14 CCR 15126.6). The range of alternatives that needs to be considered includes those which are within the rule of reason. The significant effects of the project – biological resources, cultural resources, energy, greenhouse gases and transportation dictate the alternatives to be considered.

In evaluation of the alternatives to the Project, it is useful to again review the project objectives:

4.1.1 - PROJECT OBJECTIVE

It is the objective of the Project to operate an economically viable and competitive dairy facility in compliance with applicable laws and regulations, optimally utilizing the available land resource, and mitigating any environmental impacts to the extent feasible and as required by CEQA.

The Project will include the addition of an anaerobic lagoon digester adjacent to the western boundary of the dairy. The objectives of the proposed Project are the following:

- Increase manure management efficiency;
- Improve air quality;
- Protect groundwater quality;
- Reduce nuisance odors;
- Reduce vectors such as flies; and
- Generate 20,749 million BTU/year of renewable electricity, thus reducing dependence on fossil fuels that generate air pollution and greenhouse gases emissions and reduces reliance on fossil-fuel powered electrical energy.

The Project does not propose to expand or increase the dairy herd size nor increase the number of staff.

4.1.2 - ALTERNATIVES CONSIDERED AND EVALUATED

An evaluation of two alternatives that were considered and evaluated are provided below. These alternatives represent a reasonable range of alternatives to the proposed Project. This analysis includes alternatives that could feasibly accomplish some of the basic objectives of the proposed Project and could potentially avoid or substantially lessen one or more of the significant effects. It should be noted that the proposed Project does not have significant adverse effects on any of the analyzed impact areas.

Among the factors that may be taken into account in addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, and jurisdictional boundaries. This TEIR analyzes the following alternatives: (A) No-Project Alternative, and (B) Reduced-Project Alternative. An alternative site location is not considered a reasonable choice for addressing impacts associated with the expansion of this existing dairy facility. Construction of a new dairy, or expansion of an existing dairy at another location, would be economically infeasible, and would potentially result in significant and unavoidable impacts.

A matrix comparing differing environmental impacts of the Project (Table 4-1) and the alternatives evaluated in this Chapter is presented here in brief summary of the Chapter's analyses. It is recommended that the full Chapter be reviewed to assure understanding of the summary.

(A) No Project Alternative

CEQA, through case law and statutory language, requires that "no project" alternatives be evaluated; under Section 15126.6(e)(2), "the No Project Alternative shall discuss the existing conditions at the time the notice of preparation is published . . .as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."

Under the No Project Alternative, the Project area would remain unchanged and would not include the addition of an anaerobic lagoon digester and associated infrastructure, which would be considered baseline.

The purpose of the No Project Alternative is to allow the County to compare the impacts of the proposed project with the impacts of not approving it. Under the No Project Alternative the existing dairy would remain 'as is'. Any project-level or cumulative environmental effects associated with facilities construction and operation.

In comparison of the environmental effects of continuation of operation of the existing dairy facilities on the project site (the No-Project Alternative) with those of the Project.

Table 4-1
Comparison of Alternatives

Environmental Resource	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Reduced Project Alternative[1]
Air Quality (including odors)	Less than significant	Greater	Greater
Biological Resources	Less than significant with mitigation	Fewer	Fewer
Cultural/Tribal Resources	Less than significant with mitigation	Fewer	Fewer
Energy Resources	Less than significant	Greater	Greater
Greenhouse Gas Emissions	Less than significant	Greater	Greater
Traffic and Transportation	Less than significant	Fewer	Fewer
Meet Project Objectives?	Yes	No	Fewer
Reduce Significant and Unavoidable Impacts?	N/A	N/A	N/A

[1] Based on a 50% reduction in Project improvements.

- Air Quality

Under the No Project Alternative, the Project site would remain in its current state, as developed with an active dairy, and would not affect the use of nearby properties. However, odors that are currently generated by the dairy would not be reduced. The impact of the No Project Alternative would have greater air quality resource impacts compared to the proposed Project.

- Biological Resources

Under the No Project Alternative, the Project site would remain in its current state and no construction would occur. No impacts to biological resources would occur and no mitigation would be required. Therefore, there would be no impact and the No Project Alternative would result in fewer biological resources impacts compared to the proposed Project.

- Cultural/Tribal Resources

Under the No Project Alternative, the project site would remain undeveloped and no ground-disturbing activities would occur. Therefore, no historical, cultural or archeological resources would be potentially impacted, and mitigation would not be required. There would be no impact and the No Project Alternative would result in fewer cultural resource impacts compared to the proposed project.

- Energy

Under the No Project Alternative, heavy equipment operation, truck deliveries, and trips by commuting construction workers associated with the construction of the proposed project would not occur. Therefore, construction-related consumption of fuel would be eliminated. However, the potential offset generating approximately 20,749 million BTU/year of renewable electricity to reduce dependence on fossil fuels would not be realized. The net benefit of the Project to generate energy from implementation of this alternative would not be realized. The No Project Alternative would not be a renewable energy source, thereby resulting in greater impacts compared to the proposed Project.

- Greenhouse Gases

Under the No Project Alternative, heavy equipment operation, truck deliveries, and trips by commuting construction workers associated with the construction of the proposed project would not occur. Therefore, construction emissions that contribute to GHGs would be eliminated. However, the potential offset or displacement of GHG emissions from operation of the digester to capture methane and other gases that would be used to generate electrical energy, compared with traditional diesel- or coal-fired power plants, would not be realized. Therefore, net GHG impacts from implementation of this alternative would be greater than those of the project.

- Transportation

Under the No Project Alternative, the proposed lined, covered digester lagoon and associated infrastructure would not be constructed, and this alternative would not introduce construction and operational-related trips. Under this alternative, existing traffic patterns and volumes on nearby roadways would remain unchanged (baseline). Therefore, there would be no traffic-related impacts from the No Project Alternative compared to the proposed Project.

COMPARISON OF IMPACTS

The No Project Alternative would avoid creating all of the potentially significant impacts that would be mitigated to less than significant levels associated with the project. However, this alternative would result in greater GHG emission impacts than the Project because the potential offset or displacement of GHG emissions from operation of the renewable energy generated by the digester lagoon and associated infrastructure, compared with traditional gas- or coal-fired power plants, would not be realized.

RELATIONSHIP TO PROJECT OBJECTIVES

The No Project Alternative would not achieve any of the Project objectives listed above in Section 4.1, such as reducing offsetting energy generated from fossil fuels or helping to achieve California's renewable energy goals. The No Project Alternative would also no achieve the stated goals to reduce nuisance odors, vectors, and help protect groundwater.

Although this alternative would create less environmental impact overall, the goals and objectives that shape the Project would not be realized under this alternative.

(B) Reduced-Project Alternative

The Reduced-Project Alternative would reduce the size of the digester by 50 percent, from 2,534,400 cubic feet (300 feet x 264 feet x 32 feet) to 316,800 cubic feet (150 feet x 132 feet x 16 feet), and reduce the corresponding anaerobic lagoon volume from approximately 10.5 million gallons to approximately 5.25 million gallons. The remainder of the manure fluids would continue to be storage in uncovered lagoons. This Alternative would decrease nuisance odors and vectors by approximately 50 percent compared to the proposed Project.

The amount of electricity that would be generated by the capture and processing of the gases captured by the covered digester would similarly be reduced by 50 percent to 10,375 million BTU/year.

The purpose of the Reduced-Project Alternative is to allow the County to compare the impacts of the proposed project with the impacts of a significantly reduced project. Under the Reduced-Project Alternative the proposed improvements to the existing dairy would also be reduced.

The objectives of the proposed Project will be diminished with the Reduced-Project Alternative, which is an improvement over the existing conditions but will only meet 50 percent of the stated Project objectives. Therefore, the Reduced-Project Alternative would be environmentally inferior.

- Air Quality

Under the Reduced-Project Alternative, a decreased amount of emissions would be generated during short term construction activities. Once operational, the Reduced Project would generate less VOCs and odors compared to baseline. Therefore, the Reduced-Project Alternative would reduce the proposed improvements and corresponding reductions in air quality and would not meet the stated objectives of the proposed Project.

- Biological Resources

Under the Reduced Project Alternative, the disturbance footprint of the proposed Project would be reduced, as would the duration of construction activities. However, mitigation measures to reduce impacts to special-status wildlife species to level that would be less than significant would still be required. Therefore, impacts of the Reduced-Project Alternative would be lessened as compared to the proposed Project.

- Cultural Resources

Under the Reduced Project Alternative, a smaller digester lagoon would be developed. Although mitigation would still likely be required, the potential to disturb or discover unknown cultural resources within the project area would be lessened under this

alternative. The Reduced Project Alternative would result in fewer cultural resource-related impacts compared to the proposed Project.

- Energy

Under the Reduced Project Alternative, the Project's relative energy consumption during construction would be decreased by 50 percent. However, the digester and biogas infrastructure would only generate approximately educed by 50 percent to 10,375 million BTU/year. Therefore, the Reduced-Project Alternative would decrease the energy needed during construction but diminish the benefits of the Project.

- Greenhouse Gases

Under the Reduced-Project Alternative, 316,800 cubic feet digester lagoon with a volume of approximately 5.25 million gallons would be constructed. The use of construction vehicles, heavy equipment operation, and worker carpool trips would be reduced compared to the Project. Therefore, this alternative would create fewer construction-related emissions for a smaller project. However, the reduction in BTU generating capacity would contribute less towards the overall RPS Program goal, thereby achieving a smaller reduction in GHGs than the proposed Project. As a result, the Reduced Project Alternative would result in greater overall GHG impacts than the proposed Project.

- Transportation

Under the Reduced-Project Alternative, a smaller digester lagoon would be developed. Decreasing the size of the lagoon under this alternative would reduce construction -related traffic impacts, since the duration of construction activities would be shortened. The Reduced-Project Alternative would result in fewer impacts to transportation and traffic than the proposed Project.

COMPARISON OF IMPACTS

The Reduced Project Alternative would be decreased in size compared to the proposed Project; however, it would still result in impacts to biological, cultural and tribal resources, although to a lesser extent. Additionally, this alternative would result in greater GHG emission impacts than the Project because the potential offset or displacement of GHGs from operation of digester and associated infrastructure to generate renewable energy, compared with traditional gas- or coal-fired power plants, would not be realized. Thus, many impacts would be fewer under this alternative compared to the proposed Project, but this alternative would not eliminate any impacts.

RELATIONSHIP TO PROJECT OBJECTIVES

The Reduced Project Alternative would achieve the majority of project objectives listed above in Section 4.1. However, this alternative would not achieve the objective of maximizing renewable energy production, reduce odor and vectors, or help protect groundwater.

Although this alternative would result in fewer environmental impacts overall, the goals and objectives that shape the Project would not be realized to the same extent under this alternative

4.2 - Environmentally Superior Alternative

CEQA requires that additions to the analysis of feasible alternatives, the alternatives must be ranked according to which alternatives have the lesser environmental effects. The ranking is shown in Table 4-1. The Project is considered environmentally superior, followed by the Reduced-Project and No Project Alternatives. The Reduced-Project and No Project Alternatives would have greater impacts related Air Quality impacts such as odor, and greater impacts to Energy Resources and GHG. The No Project Alternative would not meet any of the Projects objectives, while the Reduced-Project Alternative would fulfill some of the Project objectives, Therefore, the Project is the environmentally superior alternative.

CHAPTER 5 - CUMULATIVE IMPACTS

5.1 - Summary

The *California Environmental Quality Act Guidelines* require that all environmental impact reports contain an analysis of cumulative impacts for the project. An EIR must discuss the "cumulative impacts" of a project when its incremental effect will be cumulatively considerable. Section 15355 defines cumulative impacts as *"two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."* A cumulative impact *"consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts"* [Section 15130(a)(1)]. The discussions of cumulative impacts *"shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone"* [Section 15130(b)].

In brief summary of the results of the cumulative impacts analysis of the Project:

- Biological Resources will be mitigated to a less than significant level and will not result in cumulative impacts.
- Cultural/Tribal Resources will be mitigated to a less than significant level and will not result in cumulative impacts.
- Energy resources will be less than significant level and will not result in cumulative impacts.
- Greenhouse Gases will be less than significant level and will not result in cumulative impacts
- Transportation will be less than significant level and will not result in cumulative impacts
-

The Guidelines provide further direction regarding cumulative impacts analysis. They state that *"Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used"* [Section 15130(b)(1)(B)(3)]. The cumulative impact analysis *"shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects"* [Section 15130(b)(3)]. With some projects, *the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis"* [Section 15130(c)].

Section 15130(a)(3) states also that an EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of mitigation measure(s) designed to alleviate the cumulative impact.

As indicated above, a cumulative impact involves two or more individual effects. Per State CEQA Guidelines Section 15130, the discussion of cumulative impacts shall be guided by the standards of practicality and reasonableness. Per CEQA Guidelines Section 15130(b), the

following elements are necessary in an adequate discussion of significant cumulative impacts:

(1) Either:

a. A list of relevant, past, present, and probable future project producing related or cumulative impacts, including, if necessary, those projects outside the control of the Agency, or

b. A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency, and;

(2) When utilizing a list, as suggested in paragraph (1) of subdivision (b), factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project and its type. Location may be important, for example, when water quality impacts are at issue since projects outside the watershed would probably not contribute to a cumulative effect. Project type may be important, for example, when the impact is specialized, such as a particular air pollutant or mode of traffic hen utilizing a list, as suggested in paragraph (1) of subdivision (b), factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project and its type. Location may be important, for example, when water quality impacts are at issue since projects outside the watershed would probably not contribute to a cumulative effect. Project type may be important, for example, when the impact is specialized, such as a particular air pollutant or mode of traffic.

(3) Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used.

(4) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and

(5) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

There are no proposed projects within a mile of the Project. Cumulative impacts for a project would be significant if the incremental effects of the individual project are considerable when combined with the effects of past projects, other current projects, and probable future projects. The following environmental effects require extensive Cumulative Impact discussion.

Impact #3.1: Air Quality

As shown in Table 5-1 the proposed Project does not pose a substantial increase to basin emissions, as such basin emissions would be essentially the same if the Project is approved. Therefore, cumulative impacts to Air Quality would be considered less than significant.

Table 5-1
Comparative Analysis Based on SJV Air Basin 2015 Inventory

Emissions Inventory Source	Pollutant (tons/year)					
	ROG	NOx	CO	SO_x	PM_{10}	$PM_{2.5}$
Kings County - 2015[1]	7,775.0	5,110.0	10,622.0	73.0	8,541.0	1,789.0
SJVAB - 2015[1]	112,931.0	96,105.0	199,509.0	2,738.0	95,667.0	21,681.0
Proposed Project	**0.0021**	**0.0522**	**0.0255**	**0.0002**	**0.0018**	**0.0010**
Proposed Project's % of Kings	0.000027	0.00102	0.00024	0.00027	0.000021	0.000056
Proposed Project's % of SJVAB	0.000002	0.00004	0.00001	0.00001	0.000002	0.000004

NOTES: [1] This is the latest inventory available as of June 2020, excluding Natural Sources.
SOURCE: Appendix A

As shown in Table 5-2, the proposed Project would pose no impact on regional O_3 and PM_{10} formation. The regional contribution to these cumulative impacts would be zero since the Project will not increase operational emissions, the Project would not be considered cumulatively considerable in its contribution to cumulative regional O_3 and PM_{10} impacts.

Table 5-2
2020 Emissions Projections – Proposed Project, Kings County and SJVAB

	ROG	NOx	PM_{10}
Proposed Project	0.00	0.00	0.00
Kings County	7,884	4,745	8,286
SJVAB	108,113	74,204	96,652
Proposed Project Percent of Kings County	0.00%	0.00%	0.00%
Proposed Project Percent of SJVAB	0.00%	0.00%	0.00%
Kings County Percent of SJVAB	7.29%	6.39%	8.57%

Source: Appendix A
Notes: The emission estimates for Kings County and the SJVAB are based on 2020 projections. The Proposed Project emission estimates are for the proposed emissions that are not already included in the SJVAB Emissions Inventory. Project emissions are based on 2020 emissions estimates to present the most conservative comparison. The Project's emissions are expected to decline as cleaner, less polluting vehicles replace vehicles with higher emissions.

Impacts associated with air quality were analyzed in the Kings County Dairy Element EIR, as well as environmental documents for existing dairies within the County. Due to the limited disturbance footprint of the Project and the short duration of construction activities, cumulative impacts of the Project to air quality would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

EFFECTIVENESS OF MITIGATION

Cumulative impacts of the Project are ***less than significant***.

Impact #3.2: Biological Resources

There are no known additional projects proposed within 1 mile of the Project site, as determined by the lead agency.

Impacts associated with biological resources were analyzed in the Kings County Dairy Element EIR, as well as environmental documents for existing dairies within the County. Because of the temporary nature of the construction phase and no expansion of the existing dairy operations, the indirect impacts to wildlife and the vegetation communities and habitats surrounding the Project would be minimal, and no impacts to adjacent habitats are anticipated during the operational phase. The biological resource impacts analyzed in Section 3.2, during the short duration of construction activities with implementation of the recommended Mitigation Measures MM BIO-1 through MM BIO-7, would reduce cumulative impacts of the Project to biological resources to a level that would be less than significant.

MITIGATION MEASURE(S)

MM BIO-1 through MM BIO-7.

EFFECTIVENESS OF MITIGATION

Cumulative impacts would be ***less than significant impact with mitigation incorporated***.

Impact #3.3: Cultural/Tribal Resources

Impacts associated with cultural resources were analyzed in the Kings County Dairy Element EIR, as well as environmental documents for existing dairies within the County. The cultural resource impacts analyzed in Section 3.3 indicate based on the results of cultural records search findings and the lack of historical or archaeological resources previously identified within a half mile radius of the proposed Project, the potential to encounter subsurface cultural resources is minimal. Additionally, the Project construction would be conducted within the partially developed and previously disturbed parcel. The potential to uncover subsurface historical or archaeological deposits is would be considered unlikely. Therefore, implementation of mitigation measure MM CUL-1 and MM CUL-2 would reduce cumulative

impacts of the Project to historical and archaeological resources to a level that would be less than significant. Based on reducing the Project's potential significant impact to less than significant with the implementation of the mitigation measures, the Project's contribution to cumulative impacts would be less than significant.

MITIGATION MEASURE(S)

MM CUL-1 through CUL 2.

EFFECTIVENESS OF MITIGATION

This measure will assure that appropriate procedures are followed with respect to unidentified skeletal remains or Native American burial grounds that may be found during project construction or operation. The measure will assure that any Native American burial sites encountered are avoided, treated in accordance with the recommendations of the most likely descendant (for Native American remains), or relocated. This measure will also assure that any historical or cultural resources are properly evaluated and will reduce this impact to a less than significant level.

Impact #3.4: Energy Resources

There are no known additional projects proposed within 1 mile of the Project site, as determined by the lead agency. As described in Section 3.4, once the digester and biogas infrastructure are operational, the site will generate approximately 20,749 million BTU/year, thus reducing dependence on fossil fuels that generate air pollution and greenhouse gases emissions, meeting the County and State's climate and energy goals to reduce energy usage, increase energy efficiency and increase the use of forms of renewable energy. The proposed Project does not pose a substantial increase to energy consumption, as such consumption would be essentially the same if the Project is approved. Therefore, cumulative impacts to Energy Resources would be considered less than significant. Due to the minimal consumption increase in demand for electricity and gas, cumulative impacts of the Project to energy resources would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

EFFECTIVENESS OF MITIGATION

Cumulative impacts of the Project are ***less than significant***.

Impact #3.5: Greenhouse Gases

There are no known additional projects proposed within one mile of the Project site, as determined by the lead agency.

As discussed in Section 3.5, the proposed Project will be subject to any regulations developed under AB 32 as determined by CARB. In order for the Project to be considered less than significant, it would need to conform with the goals of AB 32. Annualized GHG emissions from the Project's construction are minimal and temporary. Once operational, the Project would not generate any new GHG emissions. As a result, project impacts on greenhouse gases would be less than significant. As such, the project's contribution to cumulative impacts would not be considered cumulatively considerable. Therefore, the Project's cumulative impact would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

EFFECTIVENESS OF MITIGATION

Cumulative impacts of the Project are *less than significant*.

Impact #3.6: Transportation

There are no known additional projects proposed within 1 mile of the Project site, as determined by the lead agency.

As discussed in Section 3.6, and as provided in the Traffic Investigation attached as Appendix E, the Project will not result in traffic volumes exceeding Level of Service Threshold volumes shown on Table C-3 of the County Circulation Element, and Level of Service will not fall below LOS D on County Roads or LOS C on SR-43, the Project does not conflict with any plans or ordinances regarding the effectiveness of the circulation system. The implementation of the Project will not create a potentially significant impact to transportation. As such, the cumulative impacts would be less than significant.

MITIGATION MEASURE(S)

No mitigation is required.

EFFECTIVENESS OF MITIGATION

Cumulative impacts of the Project are less than significant.

CHAPTER 6 - OTHER MANDATORY CEQA SECTION

6.1 - Growth Inducement

Section 15126.2(d) of the *CEQA Guidelines* requires that EIRs provide a discussion of the *"growth inducing impacts of the proposed project."* Growth inducing impacts could be caused by projects that foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Growth inducing impacts can also be caused by removing obstacles to population growth, such as an expansion of a wastewater treatment plant. Growth inducement impacts can result from population increases that require the construction of new roadways, infrastructure or community services facilities. Growth inducement can also be a result of new development that requires an increase in employment levels, removes barriers to development, or provides resources that lead to secondary growth. With respect to employment, the Project would not induce substantial growth.

The development of the proposed Project is not growth inducing. The development of the proposed Project is not likely to result in or contribute to population growth, in that it is not proposing to increase staffing at the dairy. The approximately 5-10 temporary construction jobs this Project will most likely be filled by existing residents of the area. No significant direct or indirect population or housing growth can however be attributed to this project.

Although the Project would contribute to the energy supply, which supports growth, the development of power infrastructure is a response to increased market demand. It does not induce new growth. Kings County planning documents already permit and anticipate a certain level of growth in the area and in the State as a whole, along with attendant growth in energy demand. It is this anticipated growth that drives energy-production projects, not vice versa. The Project would supply energy to accommodate and support existing demand and projected growth, but it would not foster any new growth. Therefore, any link between the Project and growth in Kings County would be speculative.

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include: 1) decreasing overall per capita energy consumption; 2) decreasing reliance on fossil fuels such as coal, natural gas and oil; and 3) increasing reliance on renewable energy sources. In order to assure that energy implications are considered in project decisions, CEQA requires that EIRs include a discussion of the potential energy impacts of proposed Projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy (see Public Resources Code Section 21100(b)(3)).

The proposed Project is considered a renewable energy project that would generate 20,749 million BTU/year of renewable electricity. The energy produced would help the State of California meet its goals for use and production of alternative fuels and offset electrical power that would otherwise by generated by the use of fossil fuels. Senate Bill (SB) 1078 established California's Renewables Portfolio Standard (RPS) program in 2002 for all retail sellers of electricity. SB 350 increased the RPS goal from 33 percent to 50 percent by 2030

and 100 percent by 2050. The legislation also required local publicly owned electric utilities to establish annual targets for energy efficiency savings and demand reduction consistent with this goal.

The proposed Project consists of the construction and operation of a covered, lined anaerobic lagoon, with associated infrastructure. New open lot corrals, free stall barns and hay barns will also be constructed to provide greater health and safety to the herd and dairy staff. Thus, the site would continue in agriculture uses, as permitted by the zoning for the site. The Project does not propose any infrastructure to serve areas outside of the site. Therefore, there are no direct or indirect growth-inducing activities associated with this Project.

6.2 - Significant Environmental Effects that Cannot be Avoided

"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, mineral, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

Section 15126.2(b) of the *State CEQA Guidelines* requires that the EIR describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described. The following effects were found to be significant project impacts for which mitigation measures are either not available or would

The TEIR analyzed the proposed Project based on the incremental deviation it represents from the certified Kings County General Plan Dairy Element EIR and the requirements of the Dairy Element. The proposed Project intends to construct an anaerobic covered, lined digester approximately 1,194 feet from a residence to the south of the dairy.

After further study and environmental review, as provided in this TEIR, it was determined that there are no project-level and cumulative impacts considered to be significant and unavoidable.

With the incorporation of reasonable mitigation measures, project and cumulative impacts to biological resources and cultural/tribal resources would be reduce impacts to less than significant levels.

It was also determined that impacts of the proposed Project to air quality, energy, greenhouse gases and transportation are considered less than significant.

6.3 - Irreversible Impacts

Section 15126.2(c) of the CEQA Guidelines defines an irreversible impact as an impact that uses nonrenewable resources during the initial and continued phases of the project. Irreversible impacts can also result from damage caused by environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to ensure that such consumption is justified.

Build-out of the Project would commit nonrenewable resources during project construction. During project operations, oil, gas, and other fossil fuels and nonrenewable resources would be consumed at the same rate and demand as currently exists, which is considered baseline. Therefore, no irreversible commitment of nonrenewable resources would occur as a result of long-term Project operations. The Project is in accordance with the adopted goals, policies, and implementation measures of the Kings County General Plan Dairy Element, as a matter of public policy, those commitments have been determined to be acceptable. The Kings County General Plan ensures that any irreversible environmental changes associated with those commitments will be minimized.

CHAPTER 7 - MITIGATION MONITORING AND REPORTING PROGRAM

7.1 - Introduction

State and local agencies are required by *Section 21081.6* of the *California Public Resources Code* to establish a monitoring and reporting program for all projects which are approved and which require CEQA processing.

Local agencies are given broad latitude in developing programs to meet the requirements of *Public Resources Code Section 21081.6.* The mitigation monitoring program outlined in this document is based upon guidance issued by the Governor's Office of Planning and Research.

The Mitigation Monitoring and Reporting Program (MMRP) for the proposed project corresponds to mitigation measures outlined in the project EIR. The Program summarizes the environmental issues identified in the EIR, the mitigation measures required to reduce each potentially significant impact to less than significant, the person or agency responsible for implementing the measures, and the agency or agencies responsible for monitoring and reporting on the implementation of the mitigation measures.

7.2 - The Program

The construction and operation of the dairy will require:

- The approval by the Kings County Planning Commission of Conditional Use Permit 20-08;
- Issuance of building permits by the Kings County Building Department;
- Approval of a Storm Water Pollution Prevention (construction) Permit by the Central Valley Regional Water Quality Control Board;
- Issuance of an Authority to Construct and a Permit to Operate by the San Joaquin Valley Air Pollution Control District; and
- Compliance with other federal, State and local district requirements.

The Community Development Agency shall ensure that all construction plans and project operations conform to the MMRP. Table 7-1, Mitigation Monitoring and Reporting Program, shall be attached to all permits as a condition of approval.

With respect to operations mitigation measure compliance, Kings County currently employs dairy inspectors who are required under Title III of the California Code of Regulations, Division II, Chapter I, Article XXI, § 602, to inspect dairy farms. Inspections can be conducted through any unit of government which has received approval in writing from the director of the Department of Food and Agriculture that it is qualified to conduct milk inspection services. Compliance with Conditional Use Permits as well as other local land use regulations is enforced by the Community Development Agency. The Community Development Agency conducts inspections for such noncompliance, the remedies for which are citations, fines, permit modifications, permit revocation, and even criminal charges.

Table 7-1
Mitigation Monitoring and Reporting Program (MMRP)

Impact	Mitigation Measures	Implementation	Monitoring & Reporting	Time Span
Impact #3.2: Biological Resources	MM BIO-1: Within 14 days of the start of Project activities, a pre-activity survey shall be conducted by a qualified biologist knowledgeable in the identification of these species. The pre-activity survey shall include walking transects to identify presence of burrowing owls and their burrows, American badgers and their dens, and San Joaquin kit foxes and their dens. The transects should be spaced at no greater than 30-foot intervals in order to obtain a 100 percent coverage of the Project site and a 250-foot buffer. Areas devoid of habitat incapable of supporting these species would not require surveys. If no evidence of these special-status species is detected, no further action is required.	The mitigation measure shall be the responsibility of the applicant and the applicant's contractor.	Monitoring will be the responsibility of the Community Development Agency.	Within 14 days of the start of Project activities.
Impact #3.2: Biological Resources	MM BIO-2: If dens or burrows that could support these species are discovered during the pre-activity survey conducted under Measure BIO-1, avoidance buffers outlined below should be established. No work should occur within these buffers unless a qualified biologist approves and monitors the activity. *Burrowing Owl (active burrows)* • Non-breeding season: September 1 – January 31 – 160 feet • Breeding season: February 1 – August 31 – 250 feet	The mitigation measure shall be the responsibility of the applicant and the applicant's contractor.	Monitoring will be the responsibility of the Lead Agency.	Non-breeding season: September 1 – January 31. Breeding season: February 1 – August 31 –

Impact	Mitigation Measures	Implementation	Monitoring & Reporting	Time Span
	American Badger and San Joaquin Kit Fox • Potential or Atypical den – 50 feet • Known den – 100 feet • Natal or pupping den – Contact agencies for further guidance Any ESA buffer established shall remain in place until the species has left on its own. Once the species has left, the burrow shall be monitored using trail cameras or tracking medium such as diatomaceous earth. If no species are detected for a minimum of three consecutive days/nights, the burrow shall hand excavated under the direct supervision of a qualified biologist. All burrow tunnels shall be hand excavated to their terminus or examined before backfilling to ensure no burrowing owls, kit foxes, or other animals are hiding inside. Alternatively, burrowing owls shall be passively excluded from a non-nest burrow through the installation of one-way doors. Prior to engaging in such passive exclusion activities, an Exclusion Plan shall be prepared following the guidance outlined in the CDFW's Staff Report on Burrowing Owl Mitigation (CDFG 2012). The Exclusion Plan shall be submitted to the CDFW for review and approval prior to implementation. Once approved, one-way doors shall be installed at non-nest burrows. The doors shall be monitored for a minimum of three days to ensure burrowing owls have left the burrow. The burrow shall then be excavated as			

Impact	Mitigation Measures	Implementation	Monitoring & Reporting	Time Span
	described above. If at any time during excavation a burrowing owl is detected within the burrow, excavation activities shall immediately cease, and the one-way door reinstalled and monitored until the owl has left the burrow. Hand excavation may then resume. Exclusion efforts shall be documented.			
Impact #3.2: Biological Resources	MM BIO-3: The following avoidance and minimization measures shall be implemented during all phases of the Project to reduce the potential for impact from the Project. They are modified from the U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011). The standard measures for the protection of the San Joaquin kit fox are provided in full in Appendix E of the Biological Analysis Report. 1. Project-related vehicles shall observe a daytime speed limit of 20-mph throughout the site in all Project areas, except on County roads and State and federal highways. 2. All Project activities shall occur during daylight hours, but if work must be conducted at night then a night-time construction speed limit of 10-mph shall be established. 3. Off-road traffic outside of designated Project areas shall be prohibited.	The mitigation measure shall be the responsibility of the applicant and the applicant's contractor.	Monitoring will be the responsibility of the Lead Agency.	Prior to and during ground disturbance.

Impact	Mitigation Measures	Implementation	Monitoring & Reporting	Time Span
	4. To prevent inadvertent entrapment of kit foxes or other animals during construction of the Project, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. 5. Before holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the USFWS and the CDFW shall be contacted before proceeding with the work. 6. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the USFWS and CDFW shall be contacted for guidance. 7. All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes and burrowing owls before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under			

Impact	Mitigation Measures	Implementation	Monitoring & Reporting	Time Span
	the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped. 8. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from a construction or Project site. 9. No pets, such as dogs or cats, shall be permitted on the Project site. 10. Project-related use of rodenticides and herbicides shall be restricted. 11. A representative shall be appointed by the Project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative shall be identified during the employee education program and their name and telephone number shall be provided to the USFWS and CDFW. 12. Upon completion of the Project, all areas subject to temporary ground disturbances (including storage and staging areas, temporary roads, pipeline corridors, etc.) shall be recontoured if necessary, and revegetated to promote restoration of the area to pre-Project conditions. An area subject to "temporary" disturbance means any			

Impact	Mitigation Measures	Implementation	Monitoring & Reporting	Time Span
	area that is disturbed during the Project, but after Project completion will not be subject to further disturbance and has the potential to be revegetated. 13. Any Project personnel who are responsible for inadvertently killing or injuring one of these species shall immediately report the incident to their representative. This representative shall contact the CDFW (and USFWS in the case of San Joaquin kit fox) immediately in the case of a dead, injured or entrapped San Joaquin kit fox, American badger, or western burrowing owl. 14. The Sacramento Fish and Wildlife office and CDFW Region 4 office shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during Project related activities. The CDFW shall be notified in the case of accidental death to an American badger or western burrowing owl. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. 15. New sightings of San Joaquin kit fox, American badger, or western burrowing owl shall be reported to the CNDDB. A copy of the reporting form and a topographic map clearly marked with the location of where a			

Impact	Mitigation Measures	Implementation	Monitoring & Reporting	Time Span
	San Joaquin kit fox was observed shall also be provided to the USFWS.			
Impact #3.2: Biological Resources	**MM BIO-4:** If Project activities must occur during the nesting season (February 1 to September 15), pre-activity nesting bird surveys shall be conducted within seven days prior to the start of construction at the construction site plus a 250-foot buffer for songbirds and a 500-foot buffer for raptors (other than Swainson's hawk). If no active nests are found, no further action is required. However, existing nests may become active and new nests may be built at any time prior to and throughout the nesting season, including when construction activities are in progress. If active nests are found during the survey or at any time during construction of the Project, an avoidance buffer ranging from 50 feet to 500 feet may be required, with the avoidance buffer from any specific nest being determined by a qualified biologist. The avoidance buffer will remain in place until the biologist has determined that the young are no longer reliant on the adults or the nest. Work may occur within the avoidance buffer under the approval and guidance of the biologist, but full-time monitoring may be required. The biologist shall have the ability to stop construction if nesting adults show any sign of distress.	The mitigation measure shall be the responsibility of the applicant and the applicant's contractor.	Monitoring will be the responsibility of the Lead Agency.	Seven days prior to the start of construction.

Impact	Mitigation Measures	Implementation	Monitoring & Reporting	Time Span
Impact #3.2: Biological Resources	**MM BIO-5:** If Project activities must occur during the nesting season (February 15 to August 31), pre-activity surveys shall be conducted for Swainson's hawk nests in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley, Swainson's Hawk Technical Advisory Committee (CDFG 2000). The surveys would be conducted on the Project site plus a 0.5-mile buffer. To meet the minimum level of protection for the species, surveys shall be conducted during at least two survey periods. If no Swainson's hawk nests are found, no further action is required.	The mitigation measure shall be the responsibility of the applicant and the applicant's contractor.	Monitoring will be the responsibility of the Lead Agency.	In accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys.
Impact #3.2: Biological Resources	**MM BIO-6:** If an active Swainson's hawk nest is discovered at any time within 0.5-mile of active construction, a qualified biologist shall complete an assessment of the potential for current construction activities to impact the nest. The assessment would consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this Project. Based on this assessment, the biologist will determine if construction activities can proceed and the level of nest monitoring required. Construction activities shall not occur within 500 feet of an active nest but depending upon conditions at the site this	The mitigation measure shall be the responsibility of the applicant and the applicant's contractor.	Monitoring will be the responsibility of the Lead Agency.	Ongoing, during site preparation and construction.

Impact	Mitigation Measures	Implementation	Monitoring & Reporting	Time Span
	distance may be reduced. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist shall have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist.			
Impact #3.2: Biological Resources	**MM BIO-7:** Prior to the initiation of construction activities, all personnel shall attend a Worker Environmental Awareness Training program developed by a qualified biologist. The program shall include information on the life histories of special-status species with potential to occur on the Project, their legal status, course of action shall these species be encountered on-site, and avoidance and minimization measures to protect these species.	The mitigation measure shall be the responsibility of the applicant and the applicant's contractor.	Monitoring will be the responsibility of the Lead Agency.	Ongoing, during site preparation and construction.
Impact #3.3: Cultural Resources	MM 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 the proposed Project:	The mitigation measure shall be the responsibility of the applicant and the applicant's contractor.	Monitoring will be the responsibility of the Lead Agency.	Ongoing, during site preparation and construction.

Impact	Mitigation Measures	Implementation	Monitoring & Reporting	Time Span
	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			

Impact	Mitigation Measures	Implementation	Monitoring & Reporting	Time Span
	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			

Impact	Mitigation Measures	Implementation	Monitoring & Reporting	Time Span
	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 both construction and decommissioning. 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.			
Impact #3.3: Cultural Resources	MM 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 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,	The mitigation measure shall be the responsibility of the applicant and the applicant's contractor.	Monitoring will be the responsibility of the Lead Agency.	Ongoing, during site preparation and construction.

Impact	Mitigation Measures	Implementation	Monitoring & Reporting	Time Span
	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."			

Impact	Mitigation Measures	Implementation	Monitoring & Reporting	Time Span
	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.			

CHAPTER 8 - REFERENCES

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AIR QUALITY IMPACT ANALYSIS

High Roller Dairy Digester Project
Kings County, California

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Project 200505.0120

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1. EXECUTIVE SUMMARY

Insight Environmental Consultants, Inc., *a Trinity Consultants Company*, has completed an Air Quality Impact Analysis (AQIA) for the construction of the Hihg Roller Dairy Digester Project (Project). This Project will be located at 14782 8th Avenue, Hanford, California and will include construction of a freestall barn, three open corral lots and a diary digestor. The existing dairy liquid manure handling system on the dairy will be modified to accommodate the digester. The biogas from the digester will be sent to the Hanford-Lakeside biogas upgrade facility via the upgrade facilties pipeline gathering system. There in no proposal to increase the herd size, employees, equipment or truck trips at the proposed Project site.

The proposed Project's construction would include the following criteria pollutant emissions: reactive organic gases (ROG), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and suspended particulate matter (PM_{10} and $PM_{2.5}$). Project construction activities would also generate greenhouse gas (GHG) emissions. Criteria and GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 (California Air Pollution Control Officers Association (CAPCOA) 2017), which is the most current version of the model approved for use by the San Joaquin Valley Air Pollution Control District (SJVAPCD). Since the Project is not proposing a change in operational conditions other than operating the new digestor, the Project operations would not generate any additional criteria pollutant emissions or GHG emissions greater than current actvities. The digestor will actually reduce VOC emissions from the Project site since the biogas will be collected and transported off-site via pipeline. Therefore, operational emissions are not required to be evaluated further.

Table 4-3 presents the Project's construction emissions and provides substantial evidence to support a *less than significant* air quality impact on the San Joaquin Valley Air Basin. Annaulized GHG emissions from the Project's construction operations are minimal and temporary. Therefore, consistent with SJVAPCD Policies APR 2005 and APR 2025, the GHG emissions increases associated with this Project would have a *less than significant* individual and cumulative impact on global climate change.

Cumulative impacts were also evaluated. Records search of the City of Hanford Planning Division's records and development files and Kings County Community Development Agency's GIS Viewer and records identified no other projects within a one-mile radius of the proposed Project. Evaluation of the cumulative emissions supports a finding that the Project's contribution would not be cumulatively considerable because the proposed Project's increment does not exceed significance thresholds. Additionally, compliance with the SJVAPCD's Air Quality Attainment Plan (AQAP) is presumably required by all projects' located within the SJVAPCD's jurisdiction. Because projects that would have been included in the cumulative analysis presumably comply with the requirements of one or both of these plans, the Project's incremental contribution to a cumulative effect is considered *less than cumulatively considerable* (CEQA Guidelines Section 15064(h)(3); SJVAPCD 2015).

2.1. PURPOSE

This AQIA was prepared pursuant to the SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI) (SJVAPCD 2015), and the California Environmental Quality Act (CEQA) Statute and Guidelines (CEQA 2019).

2.2. GENERAL PROJECT DESCRIPTION

The High Roller Digester (Project) will include construction of a freestall barn, three open corral lots and a diary digestor. The existing dairy liquid manure handling system on the dairy will be modified to accommodate the digester. The biogas from the digester will be sent to the Hanford-Lakeside biogas upgrade facility via the upgrade facilties pipeline gathering system. There in no proposal to increase the herd size, employees, equipment or truck trips at the proposed Project site. The Project would be located in eastern Kings County, CA, at 14782 8th Avenue, Hanford, California. **Figure 2-1** depicts the regional location and **Figure 2-2** depicts a localized Project location. The preliminary project design showing the basic layout of the facility is shown in **Figure 2-3**.

Figure 2-1 – Regional Location Map

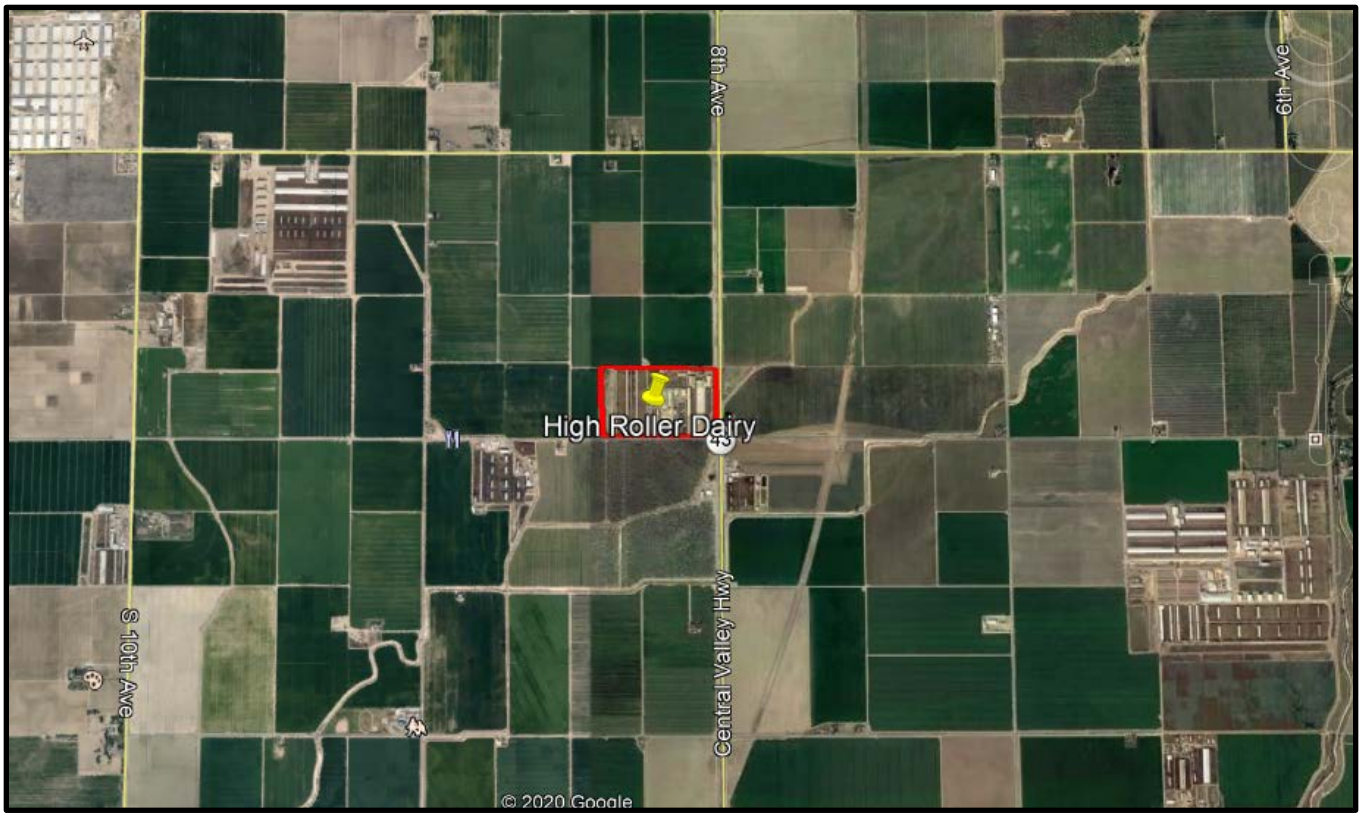


Figure 2-2 – Project Site Location

Figure 2-3 – Preliminary Project Design

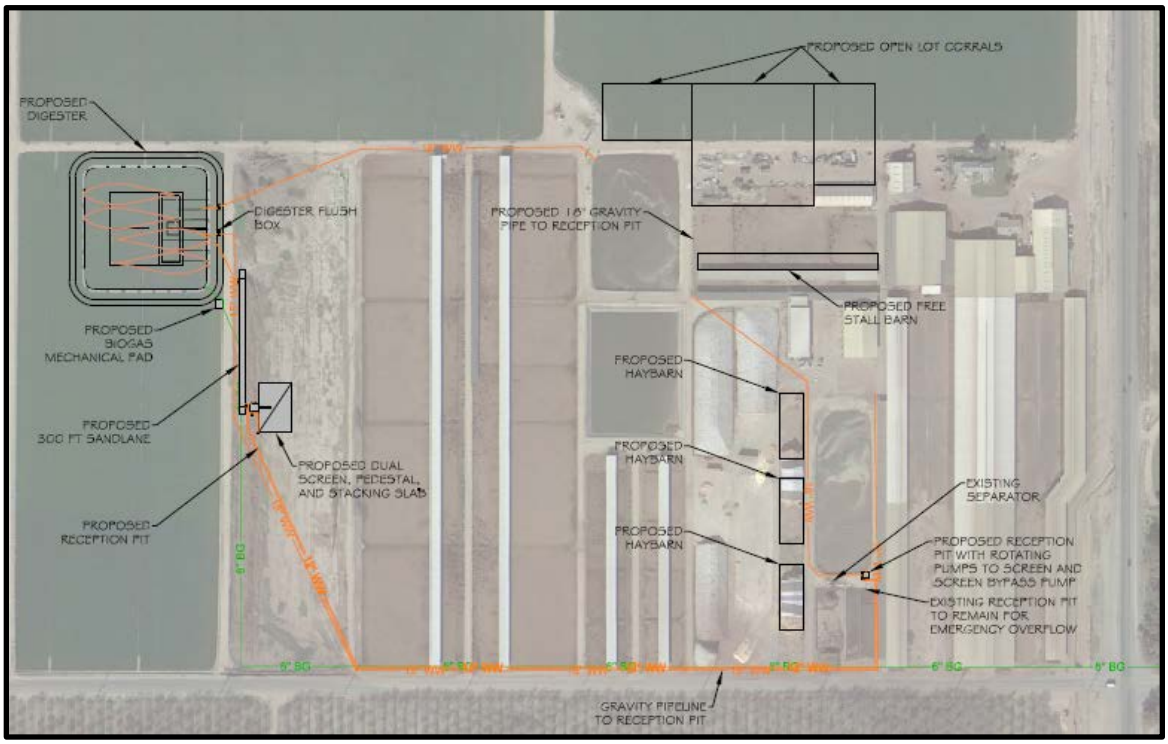
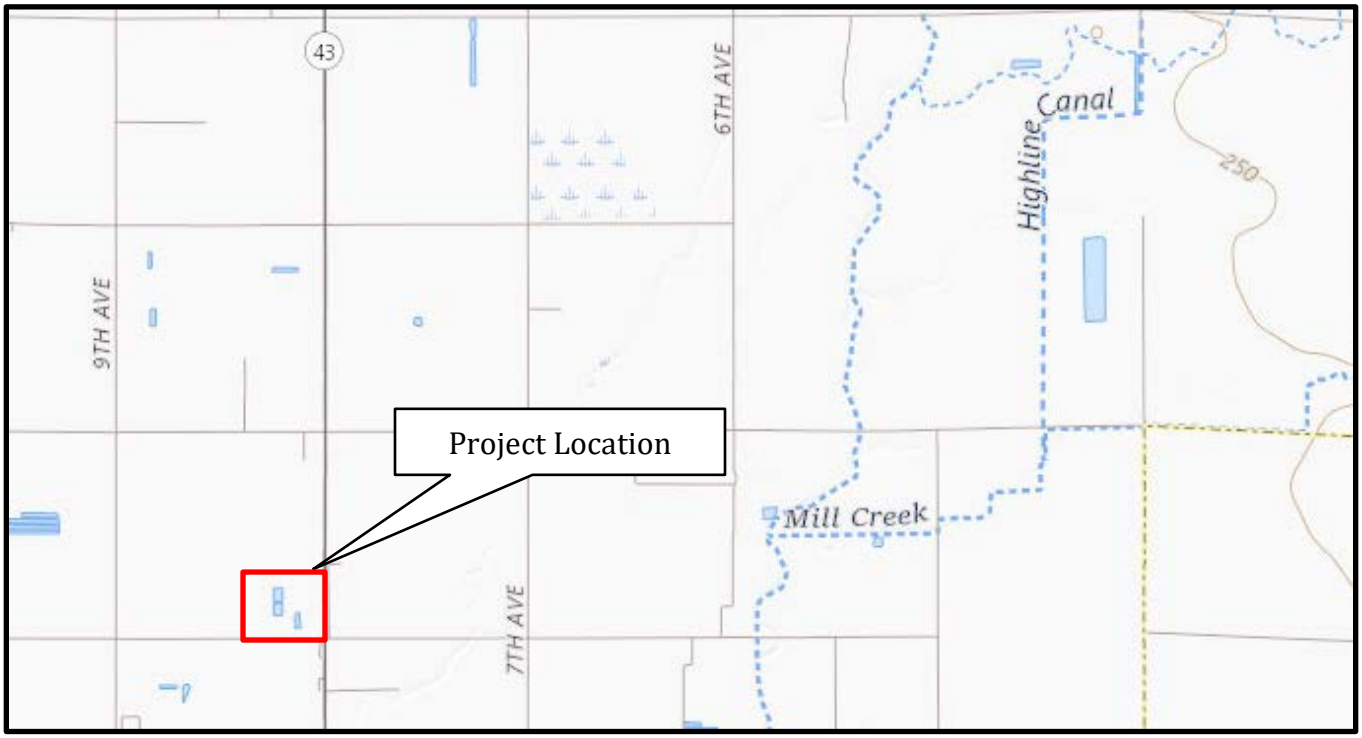


Figure 2-4 depicts the Project site's topography based on United States Geological Survey's (USGS) National Map (USGS 2015). The Project site is located at an elevation of approximately 230 feet above mean sea level, is surrounded by agricultural land, and is within the Kings County, CA boundary.

Figure 2-4 – Project Site Topography



Source: USGS 2019

Protection of the public health is maintained through the attainment and maintenance of ambient air quality standards for various atmospheric compounds and the enforcement of emissions limits for individual stationary sources. The Federal Clean Air Act requires that the U.S. Environmental Protection Agency (EPA) establish National Ambient Air Quality Standards (NAAQS) to protect the health, safety, and welfare of the public. NAAQS have been established for ozone (O_3), CO, NO_2, SO_2, PM_{10} and $PM_{2.5}$, and lead (Pb). California has also adopted ambient air quality standards (CAAQS) for these "criteria" air pollutants. CAAQS are more stringent than the corresponding NAAQS and include standards for hydrogen sulfide (H_2S), vinyl chloride (chloroethene) and visibility reducing particles. The U.S. Clean Air Act Amendments of 1977 required each state to identify areas that were in non-attainment of the NAAQS and to develop State Implementation Plans (SIP's) containing strategies to bring these non-attainment areas into compliance. NAAQS and CAAQS designation/classification for Kings County are presented in **Section 3.1** below.

Responsibility for regulation of air quality in California lies with the California Air Resources Board (CARB) and the 35 local air districts with oversight responsibility held by the EPA. CARB is responsible for regulating mobile source emissions, establishing CAAQS, conducting research, managing regulation development, and providing oversight and coordination of the activities of the 35 air districts. The air districts are primarily responsible for regulating stationary source emissions and monitoring ambient pollutant concentrations. CARB also determines whether air basins, or portions thereof, are “unclassified,” in “attainment”, or in “non-attainment” for the NAAQS and CAAQS relying on statewide air quality monitoring data.

3.1. AIR QUALITY STANDARDS

The Project area is located in the San Joaquin Valley Air Basin (SJVAB) in Kings County and which is included among the eight counties that comprise the SJVAPCD. The SJVAPCD acts as the regulatory agency for air pollution control in the Basin and is the local agency empowered to regulate air pollutant emissions for the plan area. **Table 3-1** provides the NAAQS and CAAQS.

Table 3-1 – Federal & California Standards

		NAAQS	CAAQS
Pollutant	**Averaging Time**	**Concentration**	
O_3	8-hour	0.070 ppm (137 µg/m³)[a]	0.070 ppm (137 µg /m3)
	1-hour		0.09 ppm (180 µg/m³)
CO	8-hour	9 ppm (10 mg/m³)	9 ppm (10 mg/m³)
	1-hour	35 ppm (40 mg/m³)	20 ppm (23 mg/m³)
NO_2	Annual Average	53 ppb (100 µg/m³)	0.030 ppm (57 µg/m³)
	1-hour	100 ppb (188.68 µg/m³)	0.18 ppm (339 µg/m³)
SO_2	3-hour	0.5 ppm (1,300 µg/m³)	
	24-hour	0.14 ppm (365 µg/m³)	0.04 ppm (105 µg/m³)
	1-hour	75 ppb (196 µg/m³)	0.25 ppm (655 µg/m³)
Particulate Matter (PM_{10})	Annual Arithmetic Mean		20 µg/m³
	24-hour	150 µg/m³	50 µg/m³
Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m³	12 µg/m³
	24-hour	35 µg/m³	
Sulfates	24-hour		25 µg/m³
Pb[4]	Rolling Three-Month Average	0.15 µg/m³	
H_2S	1-hour		0.03 ppm (42 µg/m³)
Vinyl Chloride (chloroethene)	24-hour		0.010 ppm (26 µg/m³)
Visibility Reducing Particles	8 hour (1000 to 1800 PST)		[b]
ppm = parts per million ppb = parts per billion	mg/m³ = milligtrams per cubic meter µg/m³= micrograms per cubic meter		

Source: CARB 2016

a. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm

b. In 1989, the CARB converted both the general statewide 10-mile visibility standards 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.

Under the provisions of the U.S. Clean Air Act, the Kings County portion of the SJVAB has been classified as nonattainment/extreme, nonattainment/severe, nonattainment, attainment/unclassified, attainment, or unclassified under the established NAAQS and CAAQS for various criteria pollutants. **Table 3-2** provides the SJVAB's designation and classification based on the various criteria pollutants under both NAAQS and CAAQS.

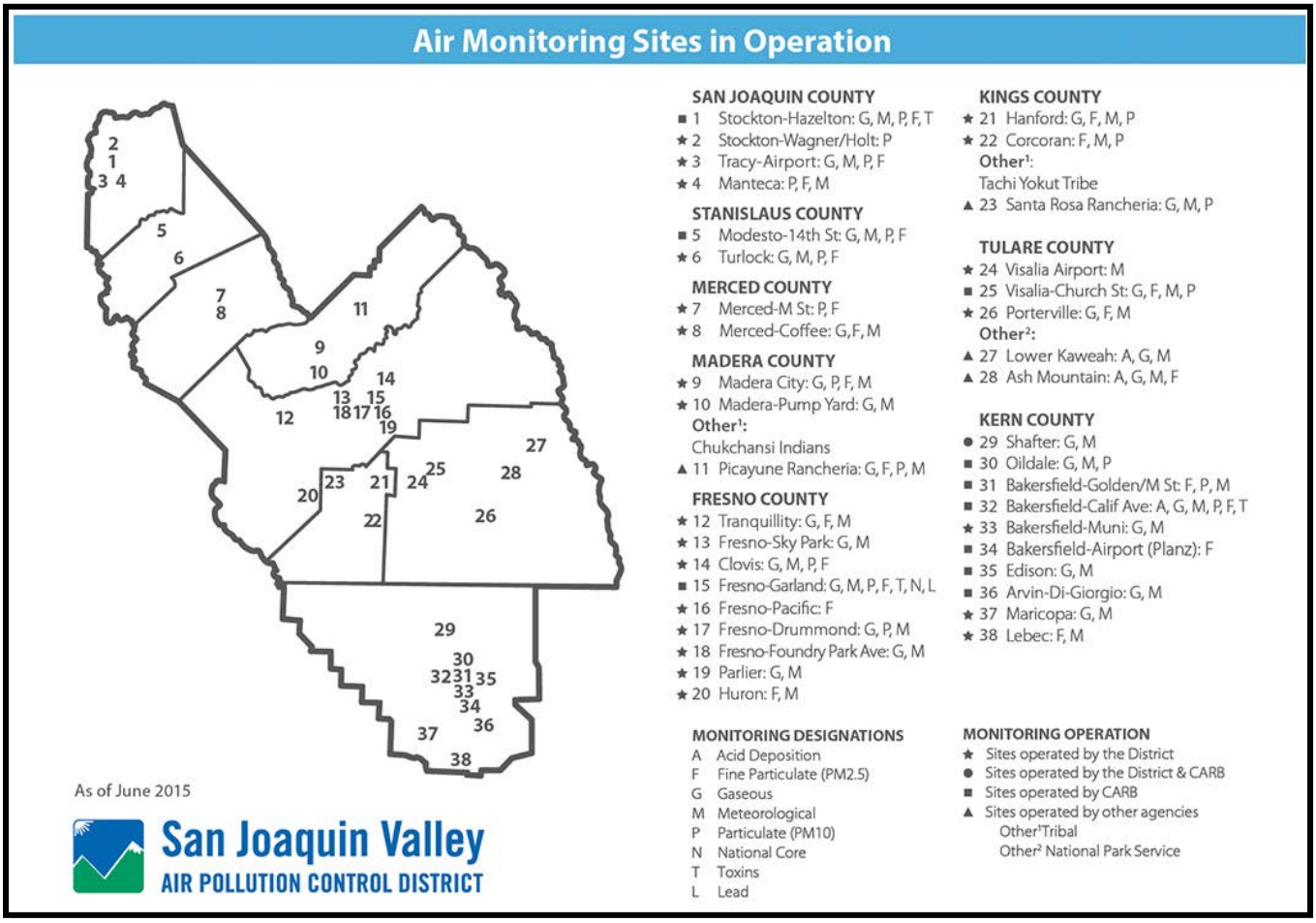
Table 3-2 – SJVAB Attainment Status

Pollutant	NAAQS[a]	CAAQS[b]
O_3, 1-hour	No Federal Standard[f]	Nonattainment/Severe
O_3, 8-hour	Nonattainment/Extreme[e]	Nonattainment
PM_{10}	Attainment[c]	Nonattainment
$PM_{2.5}$	Nonattainment[d]	Nonattainment
CO	Attainment/Unclassified	Attainment/Unclassified
NO_2	Attainment/Unclassified	Attainment
SO_2	Attainment/Unclassified	Attainment
Pb (Particulate)	No Designation/Classification	Attainment
H_2S	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing particulates	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

Source: SJVAPCD 2018a
Note:
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 O3 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 EPA revoked the federal 1-hour O3 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 O3 nonattainment areas continue to apply to the SJVAB.

The SJVAPCD along with the CARB operates an air quality monitoring network that provides information on average concentrations of those pollutants for which state or Federal agencies have established NAAQS and CAAQS. The monitoring stations in the San Joaquin Valley are depicted in **Figure 3-1**.

Figure 3-1 – SJVAPCD Monitoring Network



Source: SJVAPCD 2017

3.2. EXISTING AIR QUALITY

For the purposes of background data and this air quality assessment, this analysis relied on data collected in the last three years for the CARB monitoring stations that are located in the closest proximity to the project site. **Table 3-3** provides the background concentrations for O_3, particulate matter of 10 microns (PM_{10}), particulate matter of less than 2.5 microns ($PM_{2.5}$), CO, NO_2, SO_2, and Pb as of June 2020. Information is provided for the Hanford-S Irwin Street and Visalia – N Church Street monitoring stations for 2017 through 2018. No data is available for H_2S, Vinyl Chloride, or other toxic air contaminants in the Kings County or surrounding counties.

Table 3-3 – Existing Air Quality Monitoring Data in Project Area

Pollutant and Monitoring Station Location	Maximum Concentration			Days Exceeding Standard		
	2016	2017	2018	2016	2017	2018
O_3 – 1-hour CAAQS (0.09 ppm)						
Hanford – S Irwin Street	0.097	0.106	0.108	2	7	1
Visalia – N Church Street	0.098	0.109	0.112	1	9	8
O_3 – 8-hour NAAQS & CAAQS (0.070 ppm)						
Hanford – S Irwin Street	0.088	0.094	0.082	49	38	29
Visalia – N Church Street	0.083	0.091	0.094	18	61	53
PM_{10} – 24-hour CAAQS (50 µg/m³)						
Hanford – S Irwin Street	110.5	148.8	181.1	20	20	19
Visalia – N Church Street	132.5	145.7	159.6	95	131	162
PM_{10} – 24-hour NAAQS (150 µg/m³)						
Hanford – S Irwin Street	152.2	298.4	174.2	0	2	1
Visalia – N Church Street	137.1	144.8	1513.4	0	0	0
$PM_{2.5}$ - 24-hour CAAQS (35 µg/m³)						
Hanford – S Irwin Street	59.7	113.4	107.8	*	*	*
Visalia – N Church Street	53.9	89.0	96.2	*	*	*
$PM_{2.5}$ - 24-hour NAAQS (35 µg/m³)						
Hanford – S Irwin Street	59.7	113.4	107.8	25	33	31
Visalia – N Church Street	48.0	86.1	86.8	7	9	12
NO2 - 1-Hour CAAQS (0.18 ppm)						
Hanford – S Irwin Street	52	56	56	0	0	0
Visalia – N Church Street	57	58	69	0	0	0
NO2 - 1-Hour NAAQS (0.10 ppm)						
Hanford – S Irwin Street	52.2	56.9	56.3	0	0	0
Visalia – N Church Street	57.5	58.1	69.2	0	0	0

Source: CARB 2018a
Notes: ppm= parts per million
* There was no data available to determine the value.

The following is a description of criteria air pollutants, typical sources, and health effects and the recently documented pollutant levels in the project vicinity.

3.2.1. Ozone (O_3)

The most severe air quality problem in the San Joaquin Valley is high concentrations of O_3. High levels of O_3 cause eye irritation and can impair respiratory functions. High levels of O_3 can also affect plants and materials. Grapes, lettuce, spinach, and many types of garden flowers and shrubs are particularly vulnerable to O_3 damage. O_3 is not emitted directly into the atmosphere but is a secondary pollutant produced through photochemical reactions involving hydrocarbons and nitrogen oxides (NO_x). Significant O_3 generation requires about one to three hours in a stable atmosphere with strong sunlight. For this reason, the months of April through October comprise the "ozone season." O_3 is a regional pollutant because O_3 precursors are transported and diffused by wind concurrently with the reaction process. The data contained in **Table 3-3** shows that the Hanford and Visalia areas exceeded the 1-hour average ambient O_3 CAAQS and the 8-hour average ambient O_3 NAAQS and CAAQS for the 2016 through 2018 period.

3.2.2. Suspended Particulate Matter (PM_{10} and $PM_{2.5}$)

Both State and Federal particulate standards now apply to particulates under 10 microns (PM_{10}) rather than to total suspended particulate, which includes particulates up to 30 microns in diameter. Continuing studies have shown that the smaller-diameter fraction of TSP represents the greatest health hazard posed by the pollutant; therefore, EPA has recently established NAAQS for $PM_{2.5}$. The project area is classified as attainment for PM_{10} and non-attainment for $PM_{2.5}$ for NAAQS.

Particulate matter consists of particles in the atmosphere resulting from many kinds of dust and fume-producing industrial and agricultural operations, from combustion, and from atmospheric photochemical reactions. Natural activities also increase the level of particulates in the atmosphere; wind-raised dust and ocean spray are two sources of naturally occurring particulates. The largest sources of PM_{10} and $PM_{2.5}$ in Kings County are vehicle movement over paved and unpaved roads, demolition and construction activities, farming operations, and unplanned fires. PM_{10} and $PM_{2.5}$ are considered regional pollutants with elevated levels typically occurring over a wide geographic area. Concentrations tend to be highest in the winter, during periods of high atmospheric stability and low wind speed. In the respiratory tract, very small particles of certain substances may produce injury by themselves or may contain absorbed gases that are injurious. Particulates of aerosol size suspended in the air can both scatter and absorb sunlight, producing haze and reducing visibility. They can also cause a wide range of damage to materials.

Table 3-3 shows that PM_{10} levels regularly exceeded the CAAQS at the two monitoring stations over the three-year period of 2016 through 2018, but only slightly in 2017 for the NAAQS. **Table 3-3** shows that $PM_{2.5}$ NAAQS were exceeded from 2016 through 2018. Similar levels can be expected to occur in the vicinity of the project site.

3.2.3. Carbon Monoxide (CO)

Ambient CO concentrations normally correspond closely to the spatial and temporal distributions of vehicular traffic. Relatively high concentrations of CO would be expected along heavily traveled roads and near busy intersections. Wind speed and atmospheric mixing also influence CO concentrations; however, under inversion conditions prevalent in the San Joaquin Valley, CO concentrations may be more uniformly distributed over a broad area.

Internal combustion engines, principally in vehicles, produce CO due to incomplete fuel combustion. Various industrial processes also produce CO emissions through incomplete combustion. Gasoline-powered motor vehicles are typically the major source of this contaminant. CO does not irritate the respiratory tract, but passes through the lungs directly into the blood stream, and by interfering with the transfer of fresh oxygen to the blood, deprives sensitive tissues of oxygen, thereby aggravating cardiovascular disease, causing fatigue, headaches, and dizziness. CO is not known to have adverse effects on vegetation, visibility, or materials.

Table 3-3 reports no CO levels were recorded at any California monitoring stations during the three-year period from 2016 through 2018; historically Hanford data for CO has been below the CAAQS and NAAQS.

3.2.4. Nitrogen Dioxide (NO_2) and Hydrocarbons

Kings County has been designated as an attainment area for the NAAQS for NO_2. NO_2 is the "whiskey brown" colored gas readily visible during periods of heavy air pollution. Mobile sources and oil and gas production account for nearly all of the county's NO_x emissions, most of which is emitted as NO_2. Combustion in motor vehicle engines, power plants, refineries, and other industrial operations are the primary sources in the region. Railroads and aircraft are other potentially significant sources of combustion air contaminants. Oxides of nitrogen are direct participants in photochemical smog reactions. The emitted compound, nitric oxide, combines with oxygen in the

atmosphere in the presence of hydrocarbons and sunlight to form NO_2 and O_3. NO_2, the most significant of these pollutants, can color the atmosphere at concentrations as low as 0.5 ppm on days of 10-mile visibility. NO_x is an important air pollutant in the region because it is a primary receptor of ultraviolet light, which initiates the reactions producing photochemical smog. It also reacts in the air to form nitrate particulates.

Motor vehicles are the major source of reactive hydrocarbons in the basin. Other sources include evaporation of organic solvents and petroleum production and refining operations. Certain hydrocarbons can damage plants by inhibiting growth and by causing flowers and leaves to fall. Levels of hydrocarbons currently measured in urban areas are not known to cause adverse effects in humans. However, certain members of this contaminant group are important components in the reactions, which produce photochemical oxidants.

Table 3-3 shows that the Federal or State NO_2 standards have not been exceeded at the Hanford or the Visalia area-monitoring stations over the three-year period of 2016 through 2018. Hydrocarbons are not currently monitored.

3.2.5. Sulfur Dioxide (SO_2)

Kings County has been designated as an attainment area for the NAAQS for SO_2. SO_2 is the primary combustion product of sulfur or sulfur containing fuels. Fuel combustion is the major source of this pollutant, while chemical plants, sulfur recovery plants, and metal processing facilities are minor contributors. Gaseous fuels (natural gas, propane, etc.) typically have lower percentages of sulfur containing compounds than liquid fuels such as diesel or crude oil. SO_2 levels are generally higher in the winter months. Decreasing levels of SO_2 in the atmosphere reflect the use of natural gas in power plants and boilers.

At high concentrations, SO_2 irritates the upper respiratory tract. At lower concentrations, when respired in combination with particulates, SO_2 can result in greater harm by injuring lung tissues. Sulfur oxides (SO_x), in combination with moisture and oxygen, results in the formation of sulfuric acid, which can yellow the leaves of plants, dissolve marble, and oxidize iron and steel. SO_x can also react to produce sulfates that reduce visibility and sunlight.

Table 3-3 shows no data has been reported over the three-year period in California.

3.2.6. Lead (Pb) and Suspended Sulfate

Ambient Pb levels have dropped dramatically due to the increase in the percentage of motor vehicles that run exclusively on unleaded fuel. Ambient Pb levels in Fresno are well below the ambient standard and are expected to continue to decline. Suspended sulfate levels have stabilized to the point where no excesses of the State standard are expected in any given year.

3.3. CLIMATE

The most significant single control on the weather pattern of the San Joaquin Valley is the semi-permanent subtropical high-pressure cell, referred to as the "Pacific High." During the summer, the Pacific High is positioned off the coast of northern California, diverting ocean-derived storms to the north. Hence, the summer months are virtually rainless. During the winter, the Pacific High moves southward allowing storms to pass through the San Joaquin Valley. Almost all of the precipitation expected during a given year occurs from December through April. During the summer, the predominant surface winds are out of the northwest. Air enters the Valley through the Carquinez Strait and flows toward the Tehachapi Mountains. This up-valley (northwesterly) wind flow is interrupted in early fall by the emergence of nocturnal, down-valley (southeasterly) winds which become

progressively more predominant as winter approaches. Wind speeds are generally highest during the spring and lightest in fall and winter. The relatively cool air flowing through the Carquinez Strait is warmed on its journey south through the Valley. On reaching the southern end of the Valley, the average high temperature during the summer is nearly 100 degrees Fahrenheit (°F). Relative humidity during the summer is quite low, causing large diurnal temperature variations. Temperatures during the summer often drop into the upper 60s. In winter, the average high temperatures reach into the mid-50s and the average low drops to the mid-30s. In addition, another high-pressure cell, known as the "Great Basin High," develops east of the Sierra Nevada Mountain Range during winter. When this cell is weak, a layer of cool, damp air becomes trapped in the basin and extensive fog results. During inversions, vertical dispersion is restricted, and pollutant emissions are trapped beneath the inversion and pushed against the mountains, adversely affecting regional air quality. Surface-based inversions, while shallow and typically short-lived, are present most mornings. Elevated inversions, while less frequent than ground-based inversions, are typically longer lasting and create the more severe air stagnation problems. The winter season characteristically has the poorest conditions for vertical mixing of the entire year.

Meteorological data for various monitoring stations is maintained by the Western Regional Climate Center. Meteorological data for the project site is expected to be similar to the data recorded at the Hanford monitoring station. This data is provided in **Table 3-4 – Hanford Weather Data**, which contains average precipitation data recorded at the Hanford monitoring station. Over the 116-year period from July of 1899 through June of 2016 (the most recent data available), the average annual precipitation was 8.38 inches.

Table 3-4 – Hanford Weather Data

Period of Record Monthly Climate Summary for the Period 07/01/1899 to 6/09/2016													
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Annual**
Avg. Maximum Temp (F)	54.7	61.9	67.5	74.9	83.6	91.4	97.8	96.1	90.5	80.0	66.2	55.4	76.7
Avg. Minimum Temp (F)	35.2	38.6	42.1	46.4	52.5	58.3	62.5	60.4	55.5	47.4	38.8	34.6	47.7
Average Total Precip.(in.)	1.60	1.53	1.48	0.77	0.26	0.09	0.01	0.01	0.16	0.39	0.84	1.24	8.38
Average Snowfall (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent of possible observations for period of record: Max. Temp.: 98.4% Min. Temp.: 98.1% Precipitation: 98.8% Snowfall: 98.2% Snow Depth: 98.2%													

Source: Western Regional Climate Center, 2018.

3.4. CLIMATE CHANGE AND GREENHOUSE GASES

3.4.1. Global Climate Change

Global climate change refers to change in average meteorological conditions on the earth with respect to temperature, precipitation, and storms, lasting for decades or longer. The term “global climate change” is often used interchangeably with the term “global warming,” but “global climate change” is preferred by some scientists and policy makers to “global warming” because it helps convey the notion that in addition to rising temperatures, other changes in global climate may occur. Climate change may result from the following influences:

- Natural factors, such as changes in the sun’s intensity or slow changes in the Earth’s orbit around the sun;

- Natural processes within the climate system (e.g., changes in ocean circulation); and/or
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, and desertification).

As determined from worldwide meteorological measurements between 1990 and 2005, the primary observed effect of global climate change has been a rise in the average global tropospheric temperature of 0.36 degree Fahrenheit (°F) per decade. Climate change modeling shows that further warming could occur, which could induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of California could include higher sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns, or more energetic aspects of extreme weather (e.g., droughts, heavy precipitation, heat waves, extreme cold, and increased intensity of tropical cyclones). Specific effects from climate change in California may include a decline in the Sierra Nevada snowpack, erosion of California's coastline, and seawater intrusion in the Sacramento-San Joaquin River Delta.

Human activities, including fossil fuel combustion and land use changes, release carbon dioxide (CO_2) and other compounds cumulatively termed greenhouse gases. GHGs are effective at trapping radiation that would otherwise escape the atmosphere. This trapped radiation warms the atmosphere, the oceans, and the earth's surface (USGCRP, 2014). Many scientists believe "most of the warming observed over the last 50 years is attributable to human activities" (IPCC, 2017). The increased amount of CO_2 and other GHGs in the atmosphere is the alleged primary cause of human-induced warming.

GHGs are present in the atmosphere naturally, released by natural sources, or formed from secondary reactions taking place in the atmosphere. They include CO_2, methane (CH_4), nitrous oxide (N_2O), and O_3. In the last 200 years, substantial quantities of GHGs have been released into the atmosphere, primarily from fossil fuel combustion. These human-induced emissions are increasing GHG concentrations in the atmosphere, therefore enhancing the natural greenhouse effect. The GHGs resulting from human activity are believed to be causing global climate change. While human-made GHGs include CO_2, CH_4, and N_2O, some (like chlorofluorocarbons [CFCs]) are completely new to the atmosphere. GHGs vary considerably in terms of Global Warming Potential (GWP), the comparative ability of each GHG to trap heat in the atmosphere. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and the length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e).

Natural sources of CO_2 include the respiration (breathing) of humans and animals and evaporation from the oceans. Together, these natural sources release approximately 150 billion metric tons of CO_2 each year, far outweighing the 7 billion metric tons of GHG emissions from fossil fuel burning, waste incineration, deforestation, cement manufacturing, and other human activity. Nevertheless, natural GHG removal processes such as photosynthesis cannot keep pace with the additional output of CO_2 from human activities. Consequently GHGs are building up in the atmosphere (Environpedia, 2017).

Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources of CH_4 production include wetlands, termites, and oceans. Human activity accounts for the majority of the approximately 500 million metric tons of CH_4 emitted annually. These anthropogenic sources include the mining and burning of fossil fuels; digestive processes in ruminant livestock such as cattle; rice cultivation; and the decomposition of waste in landfills. The major removal process for atmospheric CH_4, the chemical breakdown in the atmosphere, cannot keep pace with source emissions; therefore, CH_4 concentrations in the atmosphere are rising.

Worldwide emissions of GHGs in 2008 were 30.1 billion metric tons of CO_2e and have increased considerably since that time (United Nations, 2011). It is important to note that the global emissions inventory data are not all from the same year and may vary depending on the source of the data (U.S. EPA, 2016). Emissions from the top five emitting countries and the European Union accounted for approximately 55% of total global GHG emissions. The United States was the number two producer of GHG emissions. The primary GHG emitted by human activities in the United States was CO_2, representing approximately 84% of total GHG emissions (U.S. EPA, 2016).

In 2009, the United States emitted approximately 6.6 billion metric tons of CO_2e or approximately 25 tons per year (tpy) per person. Of the six major sectors nationwide (electric power industry, transportation, industry, agriculture, commercial, and residential), the electric power industry and transportation sectors combined account for approximately 62% of the GHG emissions; the majority of the electrical power industry and all of the transportation emissions are generated from direct fossil fuel combustion. Between 1990 and 2006, total United States GHG emissions rose approximately 14.7% (U.S. EPA, 2016).

Worldwide CO_2 emissions are expected to increase by 1.9% annually between 2001 and 2025 (U.S. Energy Information Center, 2017). Much of the increase in these emissions is expected to occur in the developing world where emerging economies, such as China and India, fuel economic development with fossil fuel energy. Developing countries' emissions are expected to grow above the world average at 2.7% annually between 2001 and 2025, and surpass emissions of industrialized countries around 2018.

CARB is responsible for developing and maintaining the California GHG emissions inventory. This inventory estimates the amount of GHGs emitted into and removed from the atmosphere by human activities within the state of California and supports the Assembly Bill (AB) 32 Climate Change Program. CARB's current GHG emission inventory covers the years 1990 through 2008 and is based on fuel use, equipment activity, industrial processes, and other relevant data (e.g., housing, landfill activity, and agricultural lands).

California's net emissions of GHG decreased 1.3% from 459 million metric tons (MMT) of CO_2e in 2000 to 453 MMT in 2009, with a maximum of 483.9 MMT in 2004. Driven by a noticeable drop in on-road transportation emissions, statewide GHG emissions dropped from 485 MMT CO_2e in 2008 to 457 MMT in 2009. (2009 also reflects the beginning of the economic recession and fuel price spikes.) As the economy recovers, GHG emissions are likely to rise again without other mitigation actions. During the same period from 2000 to 2009, California's GHG emissions per person decreased by 9.7%, but the emissions reductions were offset by the state's population increase of 9.0%.

CARB estimates that transportation was the source of approximately 38% of California's GHG emissions in 2009, followed by electricity generation at 23%. Other sources of GHG emissions were industrial sources at 20%, residential plus commercial activities at 9%, and agriculture at 7%.

CARB has projected statewide GHG emissions for the year 2020, which represent the emissions that would be expected to occur with reductions anticipated from Pavley I and the Renewables Portfolio Standard (RPS) (38 MMT CO_2e total), will be 507 MMT of CO_2e (CARB, 2014a). GHG emissions from the transportation and electricity sectors as a whole are expected to increase at approximately 36% and 22% of total CO_2e emissions, respectively, as compared to 2009. The industrial sector consists of large stationary sources of GHG emissions and the percentage of the total 2020 emissions is projected to be 18% of total CO_2e emissions. The remaining sources of GHG emissions in 2020 are high global warming potential gases at 7%, residential and commercial activities at 9%, agriculture at 6%, and recycling and waste at 2%.

3.4.2. Effects of Global Climate Change

Changes in the global climate are assessed using historical records of temperature changes that have occurred in the past. Climate change scientists use this temperature data to extrapolate a level of statistical significance specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from past climate changes in rate and magnitude.

The Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. In its Fifth Assessment Report, the IPCC predicted that the global mean temperature change from 1990 to 2100, could range from 1.1 degree Celsius (°C) to 6.4 °C (8 to 10.4 °Fahrenheit). Global average temperatures and sea levels are expected to rise under all scenarios (IPCC, 2014). The IPCC concluded that global climate change was largely the result of human activity, mainly the burning of fossil fuels. However, the scientific literature is not consistent regarding many of the aspects of climate change, the actual temperature changes during the 20th century, and contributions from human versus non-human activities.

Effects from global climate change may arise from temperature increases, climate sensitive diseases, extreme weather events, and degradation of air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems. Heat-related problems include heat rash and heat stroke, drought, etc. In addition, climate-sensitive diseases may increase, such as those spread by mosquitoes and other disease-carrying insects. Such diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture. Global warming may also contribute to air quality problems from increased frequency of smog and particulate air pollution.

According to the 2006 California Climate Action Team (CAT) Report, several climate change effects can be expected in California over the course of the next century (CalEPA, 2006). These are based on trends established by the IPCC and are summarized below.

- A diminishing Sierra snowpack declining by 70% to 90%, threatening the state's water supply.
- A rise in sea levels, resulting in the displacement of coastal businesses and residences. During the past century, sea levels along California's coast have risen about seven inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Sea level rises of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats. (Note: This condition would not affect the Proposed Project area as it is a significant distance away from coastal areas.)
- An increase in temperature and extreme weather events. Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- Increased risk of large wildfires if rain increases as temperatures rise. Wildfires in the grasslands and chaparral ecosystems of southern California are estimated to increase by approximately 30% toward the end of the 21st century because more winter rain will stimulate the growth of more plant fuel available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90% more northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- Increasing temperatures from 8 to 10.4 °F under the higher emission scenarios, leading to a 25% to 35% increase in the number of days that ozone pollution levels are exceeded in most urban areas (see below).
- Increased vulnerability of forests due to forest fires, pest infestation, and increased temperatures.
- Reductions in the quality and quantity of certain agricultural products. The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.

- Exacerbation of air quality problems. If temperatures rise to the medium warming range, there could be 75 to 85% more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today's conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- A decrease in the health and productivity of California's forests. Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.
- Increased electricity demand, particularly in the hot summer months.
- Increased ground-level ozone formation due to higher reaction rates of ozone precursors.

3.4.3. Global Climate Change Regulatory Issues

In 1988, the United Nations established the Intergovernmental Panel on Climate Change to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United Nations Framework Convention on Climate Change established an agreement with the goal of controlling GHG emissions, including methane. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs. Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete O_3 in the stratosphere (chlorofluorocarbons [CFCs], halons, carbon tetrachloride, and methyl chloroform) were phased out by 2000 (methyl chloroform was phased out by 2005).

On September 27, 2006, Assembly Bill 32 (AB32), the California Global Warming Solutions Act of 2006 (the Act) was enacted by the State of California. The legislature stated, "global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." The Act caps California's GHG emissions at 1990 levels by 2020. The Act defines GHG emissions as all of the following gases: carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. This agreement represents the first enforceable statewide program in the U.S. to cap all GHG emissions from major industries that includes penalties for non-compliance. While acknowledging that national and international actions will be necessary to fully address the issue of global warming, AB32 lays out a program to inventory and reduce GHG emissions in California and from power generation facilities located outside the state that serve California residents and businesses.

AB32 charges CARB with responsibility to monitor and regulate sources of GHG emissions in order to reduce those emissions. CARB has adopted a list of discrete early action measures that can be implemented to reduce GHG emissions. CARB has defined the 1990 baseline emissions for California, and has adopted that baseline as the 2020 statewide emissions cap. CARB is conducting rulemaking for reducing GHG emissions to achieve the emissions cap by 2020. In designing emission reduction measures, CARB must aim to minimize costs, maximize benefits, improve and modernize California's energy infrastructure, maintain electric system reliability, maximize additional environmental and economic co-benefits for California, and complement the state's efforts to improve air quality.

Global warming and climate change have received substantial public attention for more than 20 years. For example, the United States Global Change Research Program was established by the Global Change Research Act of 1990 to enhance the understanding of natural and human-induced changes in the Earth's global environmental system, to monitor, understand and predict global change, and to provide a sound scientific basis for national and international decision-making. Even so, the analytical tools have not been developed to determine the effect on worldwide global warming from a particular increase in GHG emissions, or the resulting effects on climate change

in a particular locale. The scientific tools needed to evaluate the impacts that a specific project may have on the environment are even farther in the future.

The California Supreme Court's most recent CEQA decision on the Newhall Ranch development case, *Center for Biological v. California Department of Fish and Wildlife* (November 30, 2015, Case No. 217763), determined that the project's Environmental Impact Report (EIR) did not substantiate the conclusion that the GHG cumulative impacts would be less than significant. The EIR determined that the Newhall Ranch development project would reduce GHG emissions by 31 percent from business as usual (BAU). This reduction was compared to the California's target of reducing GHG emissions statewide by 29 percent from business as usual. The Court determined that "the EIR's deficiency stems from taking a quantitative comparison method developed by the Scoping Plan as a measure of the greenhouse gas reduction effort required by the state as a whole, and attempting to use that method, without adjustments, for a purpose very different from its original design." In the Court's final ruling it offered suggestions that were deemed appropriate use of the BAU methodology:

1. Lead agencies can use the comparison to BAU methodology if they determine what reduction a particular project must achieve in order to comply with statewide goals,
2. Project design features that comply with regulations to reduce emissions may demonstrate that those components of emissions are less that significant, and
3. Lead agencies could also demonstrate compliance with locally adopted climate plans, or could apply specific numerical thresholds developed by some local agencies.

As discussed in Section 4.1, Significance Criteria, the SJVAPCD, a CEQA Trustee Agency for this Project, has developed thresholds to determine significance of a proposed project – either implement Best Performance Standards or achieve a 29% reduction from BAU (a specific numerical threshold). Therefore the 29% reduction from BAU is applied to the subject Project in order to determine significance. Therefore, the GHG analysis for this Project follows the suggestions from the Court's ruling on the Newhall Ranch development project in order to determine significance using the project design features.

4.1. SIGNIFICANCE CRITERIA

To determine whether a proposed Project could create a potential CEQA impact, local, state, and federal agencies have developed various means by which a project's impacts may be measured and evaluated. Such means can generally be categorized as follows:

- Thresholds of significance adopted by air quality agencies to guide lead agencies in their evaluation of air quality impacts under the CEQA.
- Regulations established by air districts, CARB, and EPA for the evaluation of stationary sources when applying for Authorities to Construct, Permits to Operate, and other permit program requirements (e.g., New Source Review).
- Thresholds utilized to determine if a project would cause or contribute significantly to violations of the ambient air quality standards or other concentration-based limits.
- Regulations applied in areas where severe air quality problems exist.

Summary tables of these emission-based and concentration-based thresholds of significance for each pollutant are provided below along with a discussion of their applicability.

4.1.1. Thresholds Adopted for the Evaluation of Air Quality Impacts under CEQA

In order to maintain consistency with CEQA, the SJVAPCD (2015) adopted guidelines to assist applicants in complying with the various requirements. According to the SJVAPCD's GAMAQI, a project would have potentially significant air quality impacts when the project:

- Conflict with or obstruct implementation of the applicable air quality plan;
- 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;
- Expose sensitive receptors to substantial pollutant concentrations; and/or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The SJVAPCD GAMAQI thresholds are designed to implement the general criteria for air quality emissions as required in the CEQA Guidelines, Appendix G, Paragraph III (Title 14 of the California Code of Regulations §15064.7) and CEQA (California Public Resources Code Sections 21000 et. al). SJVAPCD's specific CEQA air quality thresholds are presented in **Table 4-1**.

Table 4-1 – SJVAPCD CEQA Thresholds of Significance

Criteria Pollutant	Significance Level	
	Construction	Operational
CO	100 tons/yr	100 tons/yr
NO_x	10 tons/yr	10 tons/yr
ROG	10 tons/yr	10 tons/yr
SO_x	27 tons/yr	27 tons/yr
PM_{10}	15 tons/yr	15 tons/yr
$PM_{2.5}$	15 tons/yr	15 tons/yr
Source: SJVAPCD 2015		

4.1.2. Thresholds for Ambient Air Quality Impacts

CEQA Guidelines – Appendix G (Environmental Checklist) states that a project that would "*violate any air quality standard or contribute substantially to an existing or projected air quality violation*" would be considered to create significant impacts on air quality. Therefore, an AQIA should determine whether the emissions from a project would cause or contribute significantly to violations of the NAAQS or CAAQS (presented above in **Table 3-1**) when added to existing ambient concentrations.

The EPA has established the federal Prevention of Significant Deterioration (PSD) program to determine what comprises "significant impact levels" (SIL) to NAAQS attainment areas. A project's impacts are considered less than significant if emissions are below PSD SIL for a particular pollutant. When a SIL is exceeded, an additional "increment analysis" is required. As the Project would not include modification to the stationary source under NSR, it would not be subject to either PSD or NSR review. The PSD SIL thresholds are used with ambient air quality modeling for a CEQA project to address whether the Project would "*violate any air quality standard or contribute substantially to an existing or projected air quality violation.*" Ambient air quality emissions estimates below the PSD SIL thresholds would result in less than significant ambient air quality impacts on both a project and cumulative CEQA impact analysis. The SJVAB is classified as non-attainment for the O_3 NAAQS and, as such, is subject to "non-attainment new source review" (NSR). PSD SILs and increments are more stringent than the CAAQS or NAAQS and represent the most stringent thresholds of significance.

4.1.3. Thresholds for Hazardous Air Pollutants

The SJVAPCD's GAMAQI states, "From a health risk perspective there are basically two types of land use projects that have the potential to cause long-term public health risk impacts:

- Type A Projects: Land use projects that will place new toxic sources in the vicinity of existing receptors, and
- Type B Projects: Land use projects that will place new receptors in the vicinity of existing toxics sources" (SJVAPCD 2015).

Table 4-2 presents the thresholds of significance uses with toxic air contaminants when evaluating hazardous air pollutants (HAPs).

Table 4-2 – Measures of Significance – Toxic Air Contaminants

Agency	Level	Description
Significance Thresholds Adopted for the Evaluation of Impacts Under CEQA		
SJVAPCD	Carcinogens	Maximally Exposed Individual risk **equals or exceeds** 20 in one million.
	Non-Carcinogens	**Acute**: Hazard Index **equals or exceeds** 1 for the Maximally Exposed Individual.
		Chronic: Hazard Index **equals or exceeds** 1 for the Maximally Exposed Individual.
Source: SJVAPCD 2015		

4.1.4. Global Climate Change Thresholds of Significance

On December 17, 2009, SJVAPCD adopted *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (APR 2005)* (SJVAPCD 2009), which outlined the SJVAPCD's methodology for assessing a project's significance for GHGs under CEQA. The following criteria was outlined in the document to determine whether a project could have a significant impact:

- Projects determined to be exempt from the requirements of CEQA would be determined to have a less than significant individual and cumulative impact for GHG emissions and would not require further environmental review, including analysis of project specific GHG emissions. Projects exempt under CEQA would be evaluated consistent with established rules and regulations governing project approval and would not be required to implement Best Performance Standards (BPS).
- Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement BPS.
- Projects implementing Best Performance Standards would not require quantification of project specific GHG emissions. Consistent with CEQA Guidelines, such projects would be determined to have a less than significant individual and cumulative impact for GHG emissions.
- Projects not implementing Best Performance Standards would require quantification of project specific GHG emissions and demonstration that project specific GHG emissions would be reduced or mitigated by at least 29%, compared to Business-as-Usual (BAU*), including GHG emission reductions achieved since the 2002-2004 baseline period. Projects achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.
- Notwithstanding any of the above provisions, projects requiring preparation of an Environmental Impact Report for any other reason would require quantification of project specific GHG emissions. Projects implementing BPS or achieving at least a 29% GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.

Additionally, under SJVAPCD policy *CEQA Determinations of Significance for Projects Subject to ARB's GHG Cap-and Trade Reduction (APR 2025)* (SJVAPCD 2014), the SJVAPCD finds that the Cap-and-Trade is a regulation plan approved by CARB, consistent with AB32 emission reduction targets, and supported by a CEQA compliant environmental review document. As such, consistent with APR 2005 (SJVAPCD 2009), projects complying with Cap-and-Trade requirements are determined to have a less than significant individual and cumulative impact for GHG emissions.

4.2. PROJECT RELATED EMISSIONS

This document was prepared pursuant to the SJVAPCD's GAMAQI. The GAMAQI identifies separate thresholds for a project's short-term (construction) and long-term (operational) emissions.

Project emissions were estimated for the following project development stages:

- Short-term (Construction) – Construction emissions of the proposed Project were estimated in CalEEMod using anticipated assumptions for equipment and construction schedule for the development of the Project based on similar projects.
- Long-term (Operations) – No increase in operational emissions.

4.2.1. Short-Term Emissions

Short-term emissions are primarily from the construction phase of a project, and would have temporary impacts on air quality.

The Project applicant did not provided a list of specific construction equipment; the construction emissions were therefore based on the similar construction projects consisting of digesters and animal shelters and the use of CalEEMod default equipment list accordingly for the proposed Project's land use type and development intensity. Applying Project applicant assumptions and model defaults, construction emissions were estimated based on the estimated construction schedule. The digestor construction is expected to last approximately six months and the animal housing structures construction is expected to last two months. Construction is expected to occur simulatniously. The dates entered into the CalEEMod program may not represent the actual dates the equipment will operate; however, the total construction time is accurate, and therefore, all estimated emission totals are conservative and a reasonable and legally sufficient estimate of potential impacts.

SJVAPCD's required measures for all projects were also applied:

- Water exposed area 3 times per day; and
- Reduce vehicle speed to less than 15 miles per hour.

Table 4-3 presents the Project's short-term emissions based on the anticipated construction period.

Table 4-3 – Short-Term Project Emissions

Emissions Source	Pollutant (tons/year)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Unmitigated						
2020	0.0972	0.2985	0.7760	0.0015	0.0584	0.0478
Mitigated						
2020	0.0972	0.2985	0.7760	0.0015	0.0578	0.0475
Significance Threshold	**10**	**10**	**100**	**27**	**15**	**15**
Is Threshold Exceeded For a Single Year After Mitigation?	No	No	No	No	No	No
Source: Insight Environmental Consultants, 2019						

As calculated with CalEEMod, the estimated short-term construction-related emissions would not exceed SJVAPCD significance threshold levels during a given year and would therefore be *less than significant*.

4.2.2. Long-Term Operations Emissions

Long-term emissions are caused by operational mobile, area, and stationary sources. There in no proposal to increase the herd size, employees, equipment or truck trips at the proposed Project site. Since the Project is not proposing a change in operational conditions other than operating the new digestor, the Project operations would not generate any additional criteria pollutant emissions or GHG emissions greater than current actvities. The digestor will actually reduce VOC emissions from the Project site since the biogas will be collected and transported off-site via pipeline. Therefore, operational emissions are not required to be evaluated further and are considered a *less than significant* impact.

4.3. POTENTIAL IMPACTS ON SENSITIVE RECEPTORS

Sensitive receptors are defined as locations where young children, chronically ill individuals, the elderly, or people who are more sensitive than the general population reside, such as schools, hospitals, nursing homes, and daycare centers. There are scattered agricultural residences scattered in the surrounding area to the Project

site. These residential receptors represent the nearest sensitive receptors to the proposed Project site. There are no known non-residential sensitive receptors within 1 miles of the Project site.

4.4. POTENTIAL IMPACTS TO VISIBILITY TO NEARBY CLASS 1 AREAS

Visibility impact analyses are intended for stationary sources of emissions which are subject to the Prevention of Significant Deterioration (PSD) requirements in 40 CFR Part 60; they are not usually conducted for area sources. Because the Project's PM_{10} emissions increase are predicted to be less than the PSD threshold levels, an impact at any Class 1 area within 100 kilometers of the Project is extremely unlikely. Therefore, based on the Project's predicted less-than significant PM_{10} emissions, the Project would be expected to have a less than significant impact to visibility at any Class 1 Area.

4.5. POTENTIAL IMPACTS FROM CARBON MONOXIDE

Ambient CO concentrations normally correspond closely to the spatial and temporal distributions of vehicular traffic. Relatively high concentrations of CO would be expected along heavily traveled roads and near busy intersections. CO concentrations are also influenced by wind speed and atmospheric mixing. CO concentrations may be more uniformly distributed when inversion conditions are prevalent in the valley. Under certain meteorological conditions CO concentrations along a congested roadway or intersection may reach unhealthful levels for sensitive receptors, e.g. children, the elderly, hospital patients, etc. This localized impact can result in elevated levels of CO, or "hotspots" even though concentrations at the closest air quality monitoring station may be below NAAQS and CAAQS.

The localized project impacts depend on whether ambient CO levels in the Project vicinity would be above or below NAAQS. If ambient levels are below the standards, a project is considered to have significant impacts if a project's emissions would exceed of one or more of these standards. If ambient levels already exceed a state standard, a project's emissions are considered significant if they would increase one-hour CO concentrations by 10 ppm or more or eight-hour CO concentrations by 0.45 ppm or more. There are two criteria established by the SJVAPCD's GAMAQI by which CO "Hot Spot" modeling is required:

I. A traffic study for the project indicates that the Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity would be reduced to LOS E or F; or
II. A traffic study indicates that the project would substantially worsen an already existing LOS F on one or more streets or at one or more intersections in the project vicinity.

According to the Project applicant, a traffic generation assessment impact study has not been prepared for this project and no adverse increase in vehicular traffic is anticipated when compared to existing traffic levels. Therefore, CO "Hotspot" Modeling was not conducted for this Project and no concentrated excessive CO emissions are expected to be caused once the proposed Project is completed.

4.6. PREDICTED HEALTH RISK IMPACTS

GAMAQI recommends that Lead Agencies consider situations wherein a new or modified source of HAPs is proposed for a location near an existing residential area or other sensitive receptor when evaluating potential impacts related to HAPs. Typical sources of HAPs include diesel trucks or permitted sources such as engines, boilers or storage tanks. The High Roller Dairy Digester Project will be located near scattered agricultural residences. There will no increase in operational HAP emissions at the Project site, therefore, no further analysis is required to determine the HAPs impacts from this project and potential risk to the population attributable to emissions of HAPs from the proposed Project would be *less than significant*.

4.7. ODOR IMPACTS AND MITIGATION

The SJVAPCD's GAMAQI states "An analysis of potential odor impacts should be conducted for both of the following two situations:

1. Generators – projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate, and
2. Receivers – residential or other sensitive receptor projects or other projects built for the intent of attracting people locating near existing odor sources." (SJVAPCD 2015).

GAMAQI also states "The District has identified some common types of facilities that have been known to produce odors in the San Joaquin Valley Air Basin. These are presented in Table 6 (Screening Levels for Potential Odor Sources), can be used as a screening tool to qualitatively assess a project's potential to adversely affect area receptors." (SJVAPCD, 2015). Because the operations of the Project are not expected to cause a public nuisance due to odor and the anticipated Project site is not listed in Table 6 of the GAMAQI as a source which would create objectionable odors, the Project is not expected to be a source of objectionable odors.

Based on the provisions of the SJVAPCD's GAMAQI, the proposed Project would not exceed any screening trigger levels to be considered a source of objectionable odors or odorous compounds (SJVAPCD, 2015). Furthermore, there does not appear to be any significant source of objectionable odors in close proximity that may adversely impact the project site when it is in operation. Additionally, the Project emission estimates indicate that the proposed Project would not be expected to adversely impact surrounding receptors. As such, the proposed Project would not be a source of any odorous compounds nor would it likely be impacted by any odorous source.

4.8. IMPACTS TO AMBIENT AIR QUALITY

An ambient air quality analysis, when required, determines if the proposed Project has the potential to cause a violation of the ambient air quality standards or a substantial contribution to an existing or projected air quality standard. As stated in the of GAMAQI (2015, p 96-97), SJVAPCD has developed screening levels for requiring an Ambient Air Quality Analysis (AAQA). The SJVAPCD recommends that an AAQA be performed for all criteria pollutants when emissions of any criteria pollutant resulting from project construction or operational activities exceed the 100 pounds per day screening level, after compliance with Rule 9510 requirements and implementation of all enforceable mitigation measures.

As shown above in Tables 4-3, average daily emissions for construction activities associated with this Project would not exceed 100 pounds per day. Additionally, there will be no increase in operational emissions. *Therefore, an AAQA is not required for this Project.*

4.9. IMPACTS TO GREENHOUSE GASES AND CLIMATE CHANGE

The proposed Project's construction and operational GHG emissions were estimated using the CalEEMod program (version 2016.3.2). These emissions are summarized in Table 4-4.

Table 4-4 – Estimated Annual GHG Emissions (MT/Year)

Source	CO_2	CH_4	N_2O	CO_2e
Construction Emissions				
2020 Construction Emissions	132.57	0.040	0.000	133.56

Operational Emissions				
Mobile Emissions	0.000	0.000	0.000	0.000
Stationary Source Emissions	0.000	0.000	0.000	0.000
Energy Emissions	0.000	0.000	0.000	0.000
Total Project Operational Emissions	0.000	0.000	0.000	0.000
Annualized Construction Emissions[1]	*4.42*	*0.001*	*0.000*	*4.45*
Project Emissions	*4.42*	*0.001*	*0.000*	*4.45*
*Note: 0.000 could represent <0.000 1 Per South Coast AQMD's Methodology				

The Project will not result in the emissions of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), or sulfur hexafluoride (SF6), the other gases identified as GHG in AB32. The proposed Project will be subject to any regulations developed under AB32 as determined by CARB. In order for the Project to be considered less than significant, it would need to conform with the goals of AB32. Annaulized GHG emissions from the Project's construction operations are minimal and temporary. Therefore, consistent with SJVAPCD Policies APR 2005 and APR 2025, the GHG emissions increases associated with this Project would have a *less than significant* individual and cumulative impact on global climate change.

4.9.1. Feasible and Reasonable Mitigation Relative to Global Warming

CEQA requires that all feasible and reasonable mitigation be applied to the project to reduce the impacts from construction and operations on air quality. The SJVAPCD's "Non-Residential On-Site Mitigation Checklist" was utilized in preparing the mitigation measures and evaluating the projects features. These measures include using controls that limit the exhaust from construction equipment and using alternatives to diesel when possible. Additional reductions would be achieved through the regulatory process of the air district and CARB as required changes to diesel engines are implemented, which would affect the product delivery trucks and limits on idling.

While it is not possible to determine whether the Project individually would have a significant impact on global warming or climate change, the Project would potentially contribute to cumulative GHG emissions in California as well as to related health effects. The Project emissions would only be a very small fraction of the statewide GHG emissions. However, without the necessary science and analytical tools, it is not possible to assess, with certainty, whether the Project's contribution would be cumulatively considerable, within the meaning of CEQA Guidelines Sections 15065(a)(3) and 15130. CEQA, however, does note that the more severe environmental problems, the lower the thresholds for treating a project's contribution to cumulative impacts as significant. Given the position of the legislature in AB32, which states that global warming poses serious detrimental effects, and the requirements of CEQA for the lead agency to determine that a project not have a cumulatively considerable contribution, the effect of the Project's CO_2 contribution may be considered cumulatively considerable. This determination is "speculative," given the lack of clear scientific evidence or other criteria for determining the significance of the Project's contribution of GHG to the air quality in the SJVAB.

The strategies currently being implemented by CARB may help in reducing the Project's GHG emissions and are summarized in the table below.

Table 4-5 – Select CARB GHG Emission Reduction Strategies

Strategy	Description of Strategy
Vehicle Climate Change Standards	AB 1493 (Pavley) required the state to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of climate change emissions emitted by passenger vehicles and light duty trucks. Regulations were adopted by CARB in Sept. 2004.
Diesel Anti-Idling	In July 2004, CARB adopted a measure to limit diesel-fueled retail motor vehicle idling.
Other Light-Duty Vehicle Technology	New standards would be adopted to phase in beginning in the 2017 model year.
Alternative Fuels: Biodiesel Blends	CARB would develop regulations to require the use of 1% to 4% Biodiesel displacement of California diesel fuel.
Alternative Fuels: Ethanol	Increased use of ethanol fuel.
Heavy-Duty Vehicle Emission Reduction Measures	Increased efficiency in the design of heavy-duty vehicles and an educational program for the heavy-duty vehicle sector.

Not all of these measures are currently appropriate or applicable to the proposed Project. While future legislation could further reduce the Project's GHG footprint, the analysis of this is speculative and in accordance with CEQA Guidelines Section 15145, will not be further evaluated in this AQIA.

CEQA Guidelines Section 15130 notes that sometimes the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis. Global climate change is this type of issue. The causes and effects may not be just regional or statewide, they may also be worldwide. Given the uncertainties in identifying, let alone quantifying the impact of any single project on global warming and climate change, and the efforts made to reduce emissions of GHGs from the Project through design, in accordance with CEQA Section 15130, any further feasible emissions reductions would be accomplished through CARB regulations adopted pursuant to AB32. Annaulized GHG emissions from the Project's construction operations are minimal and temporary. Therefore, consistent with SJVAPCD Policies APR 2005 and APR 2025, the GHG emissions increases associated with this Project would have a *less than significant* individual and cumulative impact on global climate change.

By its very nature, air pollution has a cumulative impact. The District's nonattainment status is a result of past and present development within the SJVAB. Furthermore, attainment of ambient air quality standards can be jeopardized by increasing emissions-generating activities in the region. No single project would be sufficient in size, by itself, to result in nonattainment of the regional air quality standards. Instead, a project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development within the San Joaquin Valley Air Basin. When assessing whether there is a new significant cumulative effect, the Lead Agency shall consider whether the incremental effects of the project are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects [CCR §15064(h)(1)]. Per CEQA Guidelines §15064(h)(3), a Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to, an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located. (SJVAPCD 2015a)

GAMAQI also states "*If a project is significant based on the thresholds of significance for criteria pollutants, then it is also cumulatively significant. This does not imply that if the project is below all such significance thresholds, it cannot be cumulatively significant.*" (SJVAPCD 2015a). Based on the analysis conducted for this Project, it is individually *less than significant*. This AQIA, however, also considered impacts of the proposed Project in conjunction with the impacts of other projects previously proposed in the area. The following cumulative impacts were considered:

- Cumulative O_3 Impacts (ROG and NO_x) from numerous sources within the region including transport from outside the region. O_3 is formed through chemical reactions of ROG and NO_x in the presence of sunlight.
- Cumulative CO Impacts produced primarily by vehicular emissions.
- Cumulative PM_{10} Impacts from within the region and locally from the various projects. Such projects may cumulatively produce a significant amount of PM_{10} if several projects conduct grading or earthmoving activities at the same time; and
- Hazardous Air Pollutant (HAP) Impacts on sensitive receptors from within the SJVAPCD recommended screening radius of one mile.

5.1. CUMULATIVE REGIONAL AIR QUALITY IMPACTS

The most recent, certified SJVAB Emission Inventory data available from the SJVAPCD is based on data gathered for the 2015 annual inventory. This data will be used to assist the SJVAPCD in demonstrating attainment of Federal 1-hour O_3 Standards (SJVAPCD 2007). **Table 5-1** provides a comparative look at the impacts proposed by the proposed Project to the SJVAB Emissions Inventory.

Table 5-1 – Comparative Analysis Based on SJV Air Basin 2015 Inventory

Emissions Inventory Source	Pollutant (tons/year)					
	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Kings County - 2015[1]	7,775.0	5,110.0	10,622.0	73.0	8,541.0	1,789.0
SJVAB - 2015[1]	112,931.0	96,105.0	199,509.0	2,738.0	95,667.0	21,681.0
Proposed Project	**0.0021**	**0.0522**	**0.0255**	**0.0002**	**0.0018**	**0.0010**
Proposed Project's % of Kings	0.000027	0.00102	0.00024	0.00027	0.000021	0.000056
Proposed Project's % of SJVAB	0.000002	0.00004	0.00001	0.00001	0.000002	0.000004

NOTES:
[1] This is the latest inventory available as of June 2020, excluding Natural Sources.
SOURCE: CARB 2018b

As shown in Table 5-1 the proposed Project does not pose a substantial increase to basin emissions, as such basin emissions would be essentially the same if the Project is approved.

Tables 5-2 through 5-4 provide CARB Emissions Inventory projections for the year 2020 for both the SJVAB and the Kings County. Looking at the SJVAB Emissions predicted by the CARB year 2020 emissions inventory, the Kings County portion of the air basin is a moderate source of the emissions. The proposed Project produces a small portion of the total emissions in both Kings County and the entire SJVAB.

Table 5-2 – Emission Inventory SJVAB 2020 Projection

	ROG	NO_X	PM_{10}
Total Emissions	108,113.0	74,204.5	96,652.0
Percent Stationary Sources	30.82%	14.07%	5.63%
Percent Area-Wide Sources	51.59%	3.89%	89.43%
Percent Mobile Sources	17.56%	82.05%	4.95%
Total Stationary Source Emissions	33,324.5	10,439.0	5,438.5
Total Area-Wide Source Emissions	55,772.0	2,883.5	86,432.0
Total Mobile Source Emissions	18,980.0	60,882.0	4,781.5

Source: CARB 2018b
Note: Total may not add due to rounding.

Table 5-3 – Emission Inventory Kings County 2020 Estimate Projection – Tons/Year

	ROG	NO_X	PM_{10}
Total Emissions	7,884	4,745	8,286
Percent Stationary Sources	16.2%	6.9%	3.5%
Percent Area-Wide Sources	58.8%	1.5%	88.1%
Percent Mobile Sources	25.0%	91.5%	8.8%
Total Stationary Source Emissions	1,278	329	292
Total Area-Wide Source Emissions	4,636	73	7,300
Total Mobile Source Emissions	1,971	4,344	730

Source: CARB 2018b
Note: Total may not add due to rounding.

Table 5-4 – 2020 Emissions Projections – Proposed Project, Kings County and SJVAB

	ROG	NO_X	PM_{10}
Proposed Project	0.00	0.00	0.00
Kings County	7,884	4,745	8,286
SJVAB	108,113	74,204	96,652
Proposed Project Percent of Kings County	0.00%	0.00%	0.00%
Proposed Project Percent of SJVAB	0.00%	0.00%	0.00%
Kings County Percent of SJVAB	7.29%	6.39%	8.57%

Source: CARB 2018b

Notes: The emission estimates for Kings County and the SJVAB are based on 2020 projections. The Proposed Project emission estimates are for the proposed emissions that are not already included in the SJVAB Emissions Inventory. Project emissions are based on 2020 emissions estimates to present the most conservative comparison. The Project's emissions are expected to decline as cleaner, less polluting vehicles replace vehicles with higher emissions.

As shown above, the proposed Project would pose no impact on regional O_3 and PM_{10} formation. The regional contribution to these cumulative impacts would be zero since the Project will not increase operational emissions, the Project would not be considered cumulatively considerable in its contribution to regional O_3 and PM_{10} impacts.

5.2. CUMULATIVE LOCAL AIR QUALITY IMPACTS

Records search of the City of Hanford Planning Division's records and development files and Kings County Community Development Agency's GIS Viewer and records identified zero other projects within a one-mile radius of the proposed Project. *The number or size of cumulative projects is of no particular significance since no "cumulative" emissions thresholds have been established by the SJVAPCD, the City of Hanford Planning Division, or the Kings County Community Development Agency*. Because the proposed Project would generate less than significant Project-related operational impacts to criteria air pollutants, the Project's contribution to cumulative air quality impacts would not be cumulatively considerable.

5.3. CUMULATIVE HAZARDOUS AIR POLLUTANTS

The GAMAQI states that when evaluating potential impacts related to HAPs, "*impacts of local pollutants (CO, HAPs) are cumulatively significant when modeling shows that the combined emissions from the project and other existing and planned projects will exceed air quality standards.*" Because the Project would not be a significant sources of HAPS, the proposed Project would also *not be expected to pose a significant cumulative CO or HAPs impact*.

5.4. CUMULATIVE CARBON MONOXIDE (CO) – MOBILE SOURCES

The SJVAPCD's GAMAQI has identified CO impacts from impacted traffic intersections and roadway segments as being potentially cumulatively considerable. Traffic increases and added congestion caused by a project can combine to cause a violation of the SJVAPCD's CO standard also known as a "Hotspot". There are two criteria established by the GAMAQI by which CO "Hot Spot" modeling is required:

- A traffic study for the project indicates that the Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F; or
- A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at one or more intersections in the project vicinity.

According to the Project applicant, a traffic generation assessment impact study has not been prepared for this project and no adverse increase in vehicular traffic is anticipated when compared to existing traffic levels. Therefore, CO "Hotspot" Modeling was not conducted for this Project and no concentrated excessive CO emissions are expected to be caused once the proposed Project is completed.

6. CONSISTENCY WITH THE AIR QUALITY ATTAINMENT PLAN

Air quality impacts from proposed projects within Kings County are controlled through policies and provisions of the SJVAPCD and the Kings County General Plan (KCCDA 2010). In order to demonstrate that a proposed project would not cause further air quality degradation in either of the SJVAPCD's plan to improve air quality within the air basin or federal requirements to meet certain air quality compliance goals, each project should also demonstrate consistency with the SJVAPCD's adopted Air Quality Attainment Plans (AQAP) for O_3 and PM_{10}. The SJVAPCD is required to submit a "Rate of Progress" document to the CARB that demonstrates past and planned progress toward reaching attainment for all criteria pollutants. The California Clean Air Act (CCAA) requires air pollution control districts with severe or extreme air quality problems to provide for a 5% reduction in non-attainment emissions per year. The AQAP prepared for the San Joaquin Valley by the SJVAPCD complies with this requirement. CARB reviews, approves, or amends the document and forwards the plan to the EPA for final review and approval within the SIP.

Air pollution sources associated with stationary sources are regulated through the permitting authority of the SJVAPCD under the New and Modified Stationary Source Review Rule (SJVAPCD Rule 2201). Owners of any new or modified equipment that emits, reduces, or controls air contaminants, except those specifically exempted by the SJVAPCD, are required to apply for an Authority to Construct and Permit to Operate (SJVAPCD Rule 2010). Additionally, best available control technology (BACT) is required on specific types of stationary equipment and are required to offset both stationary source emission increases along with increases in cargo carrier emissions if the specified threshold levels are exceeded (SJVAPCD Rule 2201, 4.7.1). Through this mechanism, the SJVAPCD would ensure that all stationary sources within the project area would be subject to the standards of the SJVAPCD to ensure that new developments do not result in net increases in stationary sources of criteria air pollutants.

6.1. REQUIRED EVALUATION GUIDELINES

State CEQA Guidelines and the Federal Clean Air Act (Sections 176 and 316) contain specific references on the need to evaluate consistencies between the proposed project and the applicable AQAP for the project site. To accomplish this, CARB has developed a three-step approach to determine project conformity with the applicable AQAP:

1. *Determination that an AQAP is being implemented in the area where the project is being proposed*. The SJVAPCD has implemented the current, modified, AQAP as approved by the CARB. The current AQAP is under review by the U.S. EPA.
2. *The proposed project must be consistent with the growth assumptions of the applicable AQAP*. The proposed project is included within the growth projected in the Kings County General Plan.
3. *The project must contain in its design all reasonably available and feasible air quality control measures*. The proposed project incorporates various policy and rule-required implementation measures that will reduce related emissions.

The CCAA and AQAP identify transportation control measures as methods to further reduce emissions from mobile sources. Strategies identified to reduce vehicular emissions such as reductions in vehicle trips, vehicle use, vehicle miles traveled, vehicle idling, and traffic congestion, in order to reduce vehicular emissions, can be implemented as control measures under the CCAA as well. Additional measures may also be implemented through the building process such as providing electrical outlets on exterior walls of structures to encourage use of electrical landscape maintenance equipment or measures such as electrical outlets for electrical systems on diesel trucks to reduce or eliminate idling time.

As the growth represented by the proposed project was anticipated by the Kings County General Plan and incorporated into the AQAP, conclusions may be drawn from the following criteria:

1. The findings of the analysis show that the Project's minimal employment increases are planned for the project area; and
2. That, by definition, the proposed emissions from the project are below the SJVAPCD's established emissions impact thresholds

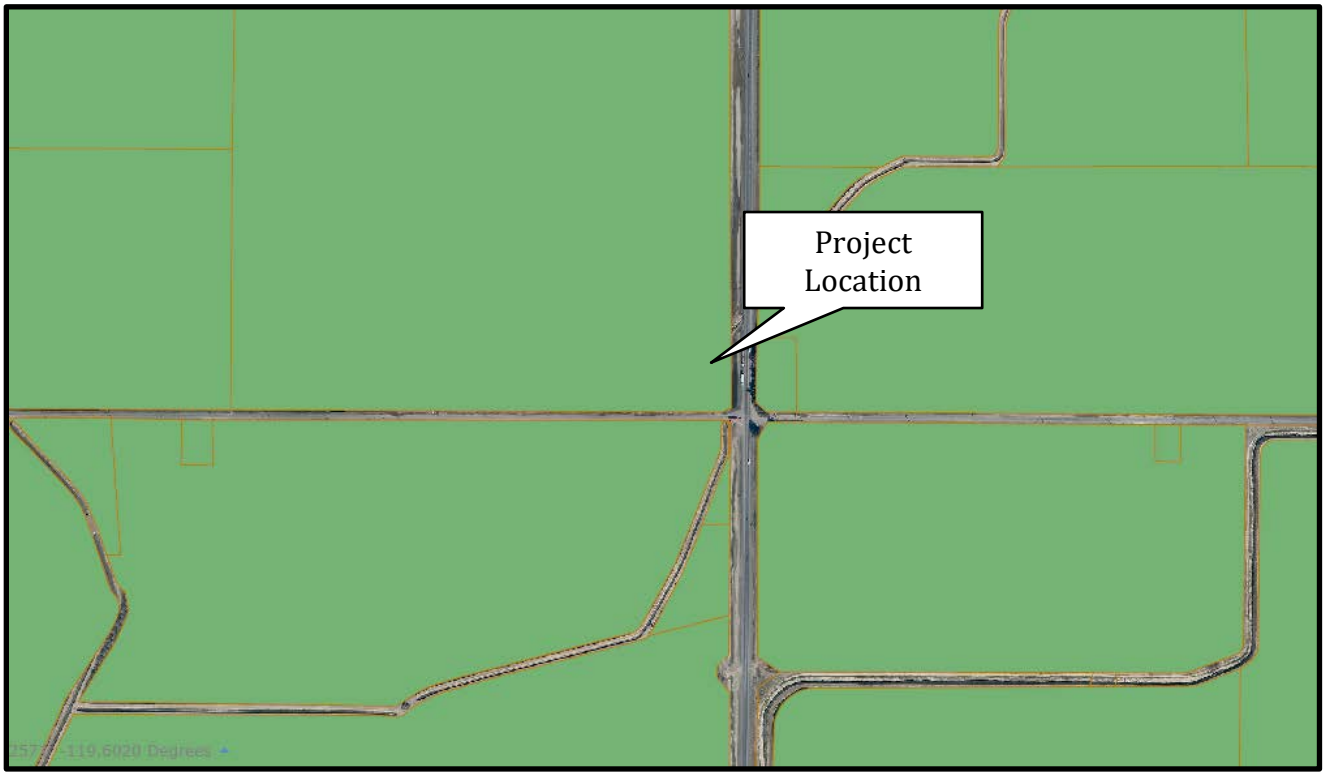
Based on these factors, the project appears to be *consistent with the AQAP*.

6.2. CONSISTENCY WITH THE KINGS COUNTY ASSOCIATION OF GOVERNMENT'S AIR QUALITY CONFORMITY ANALYSIS

The Kings County Association of Governments (KCAG) Air Quality Conformity Analysis (KCAG 2016) demonstrates that the 2017 Federal Transportation Improvement Program (2017 FTIP) and 2014 Regional Transportation Plan (2014 RTP) in the Kings County would not hinder the efforts set out in the CARB's SIP for each area's non-attainment pollutants (CO, O_3, PM_{10} and $PM_{2.5}$). The analysis uses the *San Joaquin Valley Demographic Forecasts 2010 to 2050* (Planning Center 2012).

The KCAG Air Quality Conformity Analysis considers General Plan Amendments (GPA) and zone changes that were enacted at the time of the analysis as projected growth within the area based on land use designations incorporated within the Kings County General Plan. Land use designations that are altered based on subsequent GPAs that were not included in the Air Quality Conformity Analysis were not incorporated into the KCAG analysis. Consequently, if a proposed project is not included in the regional growth forecast using the latest planning assumptions, it may not be said to conform to the regional growth forecast. Under the current Kings County Zoning, the project site is designated as "AG20" (see **Figure 6-1**).

Figure 6-1 – Kings County Zoning Map



Under current policies, only after a General Plan Amendment (GPA) is approved, can housing and employment assumptions be updated to reflect the capacity changes. Since the proposed development does not require a GPA and zone change, the existing growth forecast will not be modified to reflect these changes. In order to determine whether the forecasted growth for the project area is sufficient to account for the projected increases in employment, an analysis based on KCAG regional forecast was conducted. Employment forecast for the analysis area appear to be sufficient to account for 100% of the planned employment growth attributed to the proposed Project. In order to be considered "consistent" and, therefore, in conformance with the AQAP, these increases would need to occur over the same time as the adopted growth forecast. According to Table 2-2 of KCAG's Air Quality Conformity Analysis there is a projected employee increase of 7,988 in Kings County between 2010 and 2020.

7. MITIGATION AND OTHER RECOMMENDED MEASURES

As the estimated construction and operational emissions from the proposed Project would be *less than significant*, no specific mitigation measures would be required. However, to ensure that Project is in compliance with all applicable SJVAPCD rules and regulations and emissions are further reduced, the applicant should implement and comply with a number of measures that are either recommended as a "good operating practice" for environmental stewardship or they are required by regulation. Some of the listed measures are regulatory requirements or construction requirements that would result in further emission reductions through their inclusion in Project construction and long-term design. The following measures either have been applied to the project through the CalEEMod model and would be incorporated into the Project by design or would be implemented in conjunction with SJVAPCD rules as conditions of approval:

7.1. SJVAPCD REQUIRED PM_{10} REDUCTION MEASURES

As the project would be completed in compliance with SJVAPCD Regulation VIII, dust control measures would be taken to ensure compliance specifically during grading and construction phases. The required Regulation VII measures are as follows:

- Water previously exposed surfaces (soil) whenever visible dust is capable of drifting from the site or approaches 20% opacity.
- Water all unpaved haul roads a minimum of three-times/day or whenever visible dust from such roads is capable of drifting from the site or approaches 20% opacity.
- Reduce speed on unpaved roads to less than 15 miles per hour.
- Install and maintain a track out control device that meets the specifications of SJVAPCD Rule 8041 if the site exceeds 150 vehicle trips per day or more than 20 vehicle trips per day by vehicles with three or more axles.
- Stabilize all disturbed areas, including storage piles, which are not being actively utilized for production purposes using water, by using chemical stabilizers or by covering with a tarp or other suitable cover.
- Control fugitive dust emissions during land clearing, grubbing, scraping, excavation, leveling, grading, or cut and fill operations with application of water or by presoaking.
- When transporting materials offsite, maintain a freeboard limit of at least 6 inches and cover or effectively wet to limit visible dust emissions.
- Limit and remove the accumulation of mud and/or dirt from adjacent public roadways at the end of each workday. (Use of dry rotary brushes is prohibited except when preceded or accompanied by sufficient wetting to limit visible dust emissions and use of blowers is expressly forbidden).
- Stabilize the surface of storage piles following the addition or removal of materials using water or chemical stabilizer/suppressants.
- Remove visible track-out from the site at the end of each workday.
- Cease grading or other activities that cause excessive (greater than 20% opacity) dust formation during periods of high winds (greater than 20 mph over a one-hour period).

7.2. RECOMMENDED MEASURES TO REDUCE EQUIPMENT EXHAUST

In addition, the GAMAQI guidance document lists the following measures as approved and recommended for construction activities. These measures are recommended:

- Maintain all construction equipment as recommended by manufacturer manuals.
- Shut down equipment when not in use for extended periods.
- Construction equipment shall operate no longer than eight (8) cumulative hours per day.
- Use electric equipment for construction whenever possible in lieu of diesel or gasoline powered equipment.
- Curtail use of high-emitting construction equipment during periods of high or excessive ambient pollutant concentrations.
- All construction vehicles shall be equipped with proper emissions control equipment and kept in good and proper running order to substantially reduce NO_x emissions.
- On-Road and Off-Road diesel equipment shall use diesel particulate filters if permitted under manufacturer's guidelines.
- On-Road and Off-Road diesel equipment shall use cooled exhaust gas recirculation (EGR) if permitted under manufacturer's guidelines.
- All construction workers shall be encouraged to shuttle (car-pool) to retail establishments or to remain on-site during lunch breaks.
- All construction activities within the project area shall be discontinued during the first stage smog alerts.
- Construction and grading activities shall not be allowed during first stage O_3 alerts. First stage O_3 alerts are declared when the O_3 level exceeds 0.20 ppm (1-hour average).

7.3. OTHER MEASURES TO REDUCE PROJECT IMPACTS

The following measures are recommended to further reduce the potential for long-term emissions from the Project (if applicable). These measures are required as a matter of regulatory compliance:

- The project design shall comply with applicable standards set forth in Title 24 of the Uniform Building Code to minimize total consumption of energy.
- Applicants shall be required to comply with applicable mitigation measures in the AQAP, SJVAPCD Rules, Traffic Control Measures, Regulation VIII, and Indirect Source Rules for the SJVAPCD.
- The developer shall comply with the provisions of SJVAPCD Rule 4601 - Architectural Coatings during the construction of all buildings and facilities. Application of architectural coatings shall be completed in a manner that poses the least emissions impacts whenever such application is deemed proficient.
- The applicant shall comply with the provisions of SJVAPCD Rule 4641 during the construction and pavement of all roads and parking areas within the project area. Specifically, the applicant shall not allow the use of:
  - Rapid cure cutback asphalt;
  - Medium cure cutback asphalt;
  - Slow cure cutback asphalt (as specified in SJVAPCD Rule 4641, Section 5.1.3); or Emulsified asphalt (as specified in SJVAPCD Rule 4641, Section 5.1.4).
  - The developer shall comply with applicable provisions of SJVAPCD Rule 9510 (Indirect Source Review).

8. LEVEL OF SIGNIFICANCE AFTER MITIGATION

The proposed Project would have short-term air quality impacts due to facility construction activities as well as vehicular emissions. Both of these impacts *were found to be less than significant* before and after mitigation.

The proposed Project would not result in long-term air quality impacts due to operational and related mobile source emissions. These impacts *were found to be less than significant*.

The proposed Project in conjunction with other past, present and foreseeable future Projects will result in cumulative short-term and long-term impacts to air quality. The proposed Project's incremental contribution to these impacts would be mitigated and are below thresholds of significance and would be not be considered cumulatively considerable. Therefore, the Project's contribution to cumulative impacts *were found to be less than significant*.

The proposed Project in conjunction with other past, present and foreseeable future projects would result in cumulative long-term impacts to global climate change. The proposed Project's incremental contribution to these impacts will be mitigated to the extent feasible and are considered *less than significant.*

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ATTACHMENT A: EXISTING AIR QUALITY MONITORING DATA

Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at Hanford-S Irwin Street

iADAM

	2016		2017		2018	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Nov 10	52.2	Oct 16	56.9	Nov 15	56.3
Second High:	Nov 14	48.1	Nov 21	52.3	Oct 26	53.2
Third High:	Nov 7	44.3	Nov 22	48.6	Nov 18	53.2
Fourth High:	Nov 9	42.6	Dec 12	47.0	Nov 20	52.7
California:						
First High:	Nov 10	52	Oct 16	56	Nov 15	56
Second High:	Nov 14	48	Nov 21	52	Oct 26	53
Third High:	Nov 7	44	Nov 22	48	Nov 18	53
Fourth High:	Oct 8	42	Dec 12	47	Nov 20	52
National:						
1-Hour Standard Design Value:		42		42		45
1-Hour Standard 98th Percentile:		41.1		42.9		50.7
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		9		8		9
California:						
1-Hour Std Designation Value:		50		50		60
Expected Peak Day Concentration:		52		51		57
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		10		9		8
Annual Average:		8		8		8
Year Coverage:		94		94		97

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Hanford-S Irwin Street between 1994 and 2018. Some years in this range may not be represented.

All concentrations expressed in parts per billion.

Top 4 Summary: Highest 4 Daily Maximum Hourly Nitrogen Dioxide Measurements

at Visalia-N Church Street

iADAM

	2016		2017		2018	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Nov 11	57.5	Dec 29	58.1	Nov 16	69.2
Second High:	Nov 12	51.8	Dec 15	57.1	Nov 19	60.6
Third High:	Oct 20	51.3	Nov 22	57.0	Nov 20	56.1
Fourth High:	Nov 14	49.5	Dec 12	56.3	Oct 19	55.7
California:						
First High:	Nov 11	57	Dec 29	58	Nov 16	69
Second High:	Oct 20	51	Nov 22	57	Nov 19	60
Third High:	Nov 12	51	Dec 15	57	Nov 20	56
Fourth High:	Nov 14	49	Dec 12	56	Oct 19	55
National:						
1-Hour Standard Design Value:		49		49		51
1-Hour Standard 98th Percentile:		45.9		55.6		52.9
# Days Above the Standard:		0		0		0
Annual Standard Design Value:		9		11		11
California:						
1-Hour Std Designation Value:		60		60		70
Expected Peak Day Concentration:		65		63		67
# Days Above the Standard:		0		0		0
Annual Std Designation Value:		10		10		10
Annual Average:		*		10		10
Year Coverage:		84		97		95

Notes:

Hourly nitrogen dioxide measurements and related statistics are available at Visalia-N Church Street between 1979 and 2018. Some years in this range may not be represented.

All concentrations expressed in parts per billion.

Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

at Hanford-S Irwin Street

	2016		2017		2018	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Jun 4	0.097	Sep 2	0.106	Sep 7	0.108
Second High:	Aug 17	0.096	Aug 28	0.103	Aug 4	0.094
Third High:	Jul 16	0.093	Jun 23	0.099	Aug 8	0.092
Fourth High:	Jun 28	0.091	Oct 18	0.098	Sep 28	0.090
California:						
# Days Above the Standard:	2		7		1	
California Designation Value:	0.10		0.10		0.10	
Expected Peak Day Concentration:	0.100		0.102		0.100	
National:						
# Days Above the Standard:	*0*		*0*		*0*	
3-Year Estimated Expected Number of Exceedance Days:	*0.0*		*0.0*		*0.0*	
1-Year Estimated Expected Number of Exceedance Days:	*0.0*		*0.0*		*0.0*	
Nat'l Standard Design Value:	*0.107*		*0.106*		*0.099*	
Year Coverage:	97		95		96	

Notes:

Hourly ozone measurements and related statistics are available at Hanford-S Irwin Street between 1994 and 2018. Some years in this range may not be represented.

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005. Statistics related to the national 1-hour ozone standard are shown in or .

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily Maximum Hourly Ozone Measurements

iADAM

at Visalia-N Church Street

	2016		2017		2018	
	Date	Measurement	Date	Measurement	Date	Measurement
First High:	Jul 27	0.098	Aug 25	0.109	Aug 4	0.112
Second High:	Aug 29	0.090	Aug 28	0.108	Jul 17	0.107
Third High:	Aug 30	0.089	Jun 20	0.105	Jul 18	0.104
Fourth High:	Jul 26	0.088	May 23	0.104	Aug 9	0.104
California:						
# Days Above the Standard:	1		9		8	
California Designation Value:	0.10		0.10		0.10	
Expected Peak Day Concentration:	0.098		0.104		0.104	
National:						
# Days Above the Standard:	*0*		*0*		*0*	
3-Year Estimated Expected Number of Exceedance Days:	*0.0*		*0.0*		*0.0*	
1-Year Estimated Expected Number of Exceedance Days:	*0.0*		*0.0*		*0.0*	
Nat'l Standard Design Value:	*0.100*		*0.105*		*0.107*	
Year Coverage:	98		87		99	

Notes:

Hourly ozone measurements and related statistics are available at Visalia-N Church Street between 1979 and 2018. Some years in this range may not be represented.

All concentrations expressed in parts per million.

The national 1-hour ozone standard was revoked in June 2005. Statistics related to the national 1-hour ozone standard are shown in or .

An exceedance of a standard is not necessarily related to a violation of the standard.

Year Coverage indicates the extent to which available monitoring data represent the time of the year when concentrations are expected to be highest. 0 means that data represent none of the high period; 100 means that data represent the entire high period. A high Year Coverage does not mean that there was sufficient data for annual statistics to be considered valid.

* means there was insufficient data available to determine the value.

Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

at Hanford-S Irwin Street

iADAM

	2016		2017		2018	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Jun 4	0.088	Sep 2	0.094	Aug 4	0.082
Second High:	Aug 17	0.087	Aug 28	0.090	Sep 21	0.081
Third High:	Jul 27	0.085	Oct 18	0.086	Jun 3	0.080
Fourth High:	Jul 15	0.083	May 23	0.085	Aug 10	0.080
National 2008 Std (0.075 ppm):						
First High:	Jun 4	0.088	Sep 2	0.094	Aug 4	0.082
Second High:	Aug 17	0.087	Aug 28	0.090	Sep 21	0.081
Third High:	Jul 27	0.085	Oct 18	0.086	Jun 3	0.080
Fourth High:	Jul 15	0.083	May 23	0.085	Aug 10	0.080
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		49		38		29
Nat'l Standard Design Value:		0.084		0.084		0.082
National Year Coverage:		97		96		98
National 2008 Std (0.075 ppm):						
# Days Above the Standard:		20		22		12
Nat'l Standard Design Value:		0.084		0.084		0.082
National Year Coverage:		97		96		95

Notes:

Eight-hour ozone averages and related statistics are available at Hanford-S Irwin Street between 1994 and 2018. Some years in this range may not be represented.

All averages expressed in parts per million.

An exceedance of a standard is not necessarily related to a violation of the standard.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard exclude those 8-hour averages that have first hours between midnight and 6:00 am, Pacific Standard Time.

Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

Top 4 Summary: Highest 4 Daily Maximum 8-Hour Ozone Averages

at Visalia-N Church Street

iADAM

	2016		2017		2018	
	Date	8-Hr Average	Date	8-Hr Average	Date	8-Hr Average
National 2015 Std (0.070 ppm):						
First High:	Jul 27	0.083	May 23	0.091	Aug 9	0.094
Second High:	Jun 27	0.079	Aug 28	0.090	Jul 18	0.091
Third High:	Jul 26	0.078	Sep 2	0.090	Aug 4	0.091
Fourth High:	Aug 11	0.077	Jun 20	0.087	Aug 6	0.091
National 2008 Std (0.075 ppm):						
First High:	Jul 27	0.083	May 23	0.091	Aug 9	0.094
Second High:	Jun 27	0.079	Aug 28	0.090	Jul 18	0.091
Third High:	Jul 26	0.078	Sep 2	0.090	Aug 4	0.091
Fourth High:	Aug 11	0.077	Jun 20	0.087	Aug 6	0.091
National 2015 Std (0.070 ppm):						
# Days Above the Standard:		18		61		53
Nat'l Standard Design Value:		0.080		0.083		0.085
National Year Coverage:		98		87		99
National 2008 Std (0.075 ppm):						
# Days Above the Standard:		7		32		27
Nat'l Standard Design Value:		0.080		0.083		0.085
National Year Coverage:		98		86		99

Notes:

- Eight-hour ozone averages and related statistics are available at Visalia-N Church Street between 1979 and 2018. Some years in this range may not be represented.
- All averages expressed in parts per million.
- An exceedance of a standard is not necessarily related to a violation of the standard.
- Daily maximum 8-hour averages associated with the National 0.070 ppm standard exclude those 8-hour averages that have first hours between midnight and 6:00 am, Pacific Standard Time.
- Daily maximum 8-hour averages associated with the National 0.070 ppm standard include only those 8-hour averages from days that have sufficient data for the day to be considered valid.

Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

at Hanford-S Irwin Street

	2016		2017		2018	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Nov 5	59.7	Dec 31	113.4	Nov 19	107.8
Second High:	Dec 22	51.3	Dec 30	99.6	Jan 3	102.6
Third High:	Dec 21	51.0	Dec 29	90.2	Nov 18	98.1
Fourth High:	Nov 11	50.9	Dec 15	76.0	Jan 2	94.2
California:						
First High:	Nov 5	59.7	Dec 31	113.4	Nov 19	107.8
Second High:	Dec 22	51.3	Dec 30	99.6	Jan 3	102.6
Third High:	Dec 21	51.0	Dec 15	76.0	Nov 18	98.1
Fourth High:	Nov 11	50.9	Dec 26	75.5	Jan 2	94.2
National:						
Estimated # Days > 24-Hour Std:		25.0		33.8		*
Measured # Days > 24-Hour Std:		25		33		31
24-Hour Standard Design Value:		59		54		63
24-Hour Standard 98th Percentile:		43.3		68.7		78.2
2006 Annual Std Design Value:		16.5		16.4		16.8
2013 Annual Std Design Value:		16.5		16.4		16.8
Annual Average:		15.5		17.1		17.7
California:						
Annual Std Designation Value:		16		17		17
Annual Average:		15.6		16.8		*
Year Coverage:		100		99		97

Notes:

Daily PM2.5 averages and related statistics are available at Hanford-S Irwin Street between 2010 and 2018.
Some years in this range may not be represented.
All averages expressed in micrograms per cubic meter.

Top 4 Summary: Highest 4 Daily 24-Hour PM2.5 Averages

at Visalia-N Church Street

	2016		2017		2018	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Nov 6	48.0	Dec 30	86.1	Jan 2	86.8
Second High:	Jan 1	43.0	Dec 29	80.7	Aug 6	64.6
Third High:	Dec 20	40.7	Dec 24	74.6	Feb 1	63.4
Fourth High:	Dec 29	39.3	Dec 15	67.6	Dec 22	46.8
California:						
First High:	Dec 30	53.9	Dec 25	89.0	Jan 1	96.2
Second High:	Nov 6	51.0	Dec 30	86.1	Jan 3	89.3
Third High:	Dec 22	50.5	Dec 29	80.7	Jan 2	86.8
Fourth High:	Dec 21	49.5	Dec 31	76.7	Nov 19	75.3
National:						
Estimated # Days > 24-Hour Std:		21.3		26.7		42.3
Measured # Days > 24-Hour Std:		7		9		12
24-Hour Standard Design Value:		54		54		60
24-Hour Standard 98th Percentile:		40.7		74.6		63.4
2006 Annual Std Design Value:		16.2		15.7		16.1
2013 Annual Std Design Value:		16.2		15.7		16.1
Annual Average:		14.6		16.2		17.3
California:						
Annual Std Designation Value:		18		17		17
Annual Average:		15.6		16.8		17.4
Year Coverage:		99		82		80

Notes:

Daily PM2.5 averages and related statistics are available at Visalia-N Church Street between 1999 and 2018.
Some years in this range may not be represented.
All averages expressed in micrograms per cubic meter.

Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

at Hanford-S Irwin Street

	2016		2017		2018	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Sep 28	152.2	Sep 3	298.4	Nov 16	174.2
Second High:	Sep 19	126.0	Dec 15	158.0	Jan 2	131.3
Third High:	Sep 21	121.6	Dec 31	154.7	Nov 10	126.8
Fourth High:	Sep 30	119.5	Dec 30	153.6	Nov 4	107.4
California:						
First High:	Sep 27	110.5	Dec 15	148.8	Nov 16	181.1
Second High:	Sep 21	108.7	Oct 10	137.9	Jan 2	138.0
Third High:	Oct 21	91.5	Dec 9	115.8	Nov 10	132.0
Fourth High:	Nov 14	91.1	Oct 16	110.3	Nov 4	109.1
National:						
Estimated # Days > 24-Hour Std:		0.0		2.0		6.1
Measured # Days > 24-Hour Std:		0		2		1
3-Yr Avg Est # Days > 24-Hr Std:		*		*		2.0
Annual Average:		*42.7*		*50.6*		*47.3*
3-Year Average:		*46*		*47*		*46*
California:						
Estimated # Days > 24-Hour Std:		121.2		122.0		113.5
Measured # Days > 24-Hour Std:		20		20		19
Annual Average:		44.3		47.2		47.9
3-Year Maximum Annual Average:		48		47		48
Year Coverage:		0		0		99

Notes:

Daily PM10 averages and related statistics are available at Hanford-S Irwin Street between 1993 and 2018.
Some years in this range may not be represented.
All averages expressed in micrograms per cubic meter.

Top 4 Summary: Highest 4 Daily 24-Hour PM10 Averages

at Visalia-N Church Street

	2016		2017		2018	
	Date	24-Hr Average	Date	24-Hr Average	Date	24-Hr Average
National:						
First High:	Sep 19	137.1	Oct 9	144.8	Jan 3	153.4
Second High:	Sep 21	121.1	Oct 11	141.2	Nov 19	152.4
Third High:	Sep 20	115.3	Oct 18	140.7	Nov 16	135.8
Fourth High:	Sep 30	110.1	Dec 12	122.0	Nov 20	134.4
California:						
First High:	Sep 19	132.5	Oct 9	145.7	Nov 19	159.6
Second High:	Sep 21	119.2	Oct 11	141.9	Jan 3	159.4
Third High:	Sep 20	112.3	Oct 18	141.8	Nov 16	141.4
Fourth High:	Sep 30	109.3	Dec 12	129.3	Nov 20	140.3
National:						
Estimated # Days > 24-Hour Std:		0.0		0.0		0.0
Measured # Days > 24-Hour Std:		0		0		0
3-Yr Avg Est # Days > 24-Hr Std:		*		*		0.0
Annual Average:		*43.3*		*47.4*		*52.5*
3-Year Average:		*		*50*		*48*
California:						
Estimated # Days > 24-Hour Std:		*		135.9		164.4
Measured # Days > 24-Hour Std:		95		131		162
Annual Average:		*		46.9		52.0
3-Year Maximum Annual Average:		*		47		52
Year Coverage:		0		0		0

Notes:

Daily PM10 averages and related statistics are available at Visalia-N Church Street between 1988 and 2018.
Some years in this range may not be represented.
All averages expressed in micrograms per cubic meter.

ATTACHMENT B: PROJECT EMISSION CALCULATIONS

High Roller Animal Structure Construction

Merced County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	38.75	1000sqft	0.89	38,750.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	49
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Estimated Construction Schedule of 2 months

Trips and VMT -

Grading -

Vehicle Trips - Construction Run Only

Consumer Products - Construction Run Only

Area Coating - Construction Run Only

Landscape Equipment - Construction Run Only

Energy Use - Construction Run Only

Water And Wastewater - Construction Run Only

Solid Waste - Construction Run Only

Construction Off-road Equipment Mitigation -

Off-road Equipment -

High Roller Animal Structure Construction - Merced County, Annual

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	42.00
tblConstructionPhase	PhaseEndDate	11/4/2020	8/14/2020
tblEnergyUse	LightingElect	2.70	0.00
tblEnergyUse	NT24E	4.16	0.00
tblEnergyUse	NT24NG	3.84	0.00
tblEnergyUse	T24E	1.96	0.00
tblEnergyUse	T24NG	17.03	0.00
tblSolidWaste	SolidWasteGenerationRate	48.05	0.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	8,960,937.50	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0214	0.2144	0.1798	3.2000e-004	4.6300e-003	0.0117	0.0163	1.4200e-003	0.0108	0.0122	0.0000	28.4396	28.4396	7.5500e-003	0.0000	28.6285
Maximum	**0.0214**	**0.2144**	**0.1798**	**3.2000e-004**	**4.6300e-003**	**0.0117**	**0.0163**	**1.4200e-003**	**0.0108**	**0.0122**	**0.0000**	**28.4396**	**28.4396**	**7.5500e-003**	**0.0000**	**28.6285**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0214	0.2144	0.1798	3.2000e-004	4.0100e-003	0.0117	0.0157	1.1500e-003	0.0108	0.0119	0.0000	28.4396	28.4396	7.5500e-003	0.0000	28.6284
Maximum	**0.0214**	**0.2144**	**0.1798**	**3.2000e-004**	**4.0100e-003**	**0.0117**	**0.0157**	**1.1500e-003**	**0.0108**	**0.0119**	**0.0000**	**28.4396**	**28.4396**	**7.5500e-003**	**0.0000**	**28.6284**

	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**	**13.39**	**0.00**	**3.79**	**19.01**	**0.00**	**2.21**	**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	6-15-2020	9-14-2020	0.2289	0.2289
		Highest	0.2289	0.2289

2.2 Overall Operational

Unmitigated Operational

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

2.2 Overall Operational

Mitigated Operational

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	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	6/15/2020	6/15/2020	5	1	
2	Grading	Grading	6/16/2020	6/17/2020	5	2	
3	Building Construction	Building Construction	6/18/2020	8/14/2020	5	42	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	16.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4000e-004	4.2200e-003	2.0500e-003	0.0000		1.7000e-004	1.7000e-004		1.5000e-004	1.5000e-004	0.0000	0.4280	0.4280	1.4000e-004	0.0000	0.4314
Total	**3.4000e-004**	**4.2200e-003**	**2.0500e-003**	**0.0000**	**2.7000e-004**	**1.7000e-004**	**4.4000e-004**	**3.0000e-005**	**1.5000e-004**	**1.8000e-004**	**0.0000**	**0.4280**	**0.4280**	**1.4000e-004**	**0.0000**	**0.4314**

3.2 Site Preparation - 2020

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	1.0000e-005	1.0000e-005	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0181	0.0181	0.0000	0.0000	0.0182
Total	**1.0000e-005**	**1.0000e-005**	**8.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0181**	**0.0181**	**0.0000**	**0.0000**	**0.0182**

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					1.0000e-004	0.0000	1.0000e-004	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4000e-004	4.2200e-003	2.0500e-003	0.0000		1.7000e-004	1.7000e-004		1.5000e-004	1.5000e-004	0.0000	0.4280	0.4280	1.4000e-004	0.0000	0.4314
Total	**3.4000e-004**	**4.2200e-003**	**2.0500e-003**	**0.0000**	**1.0000e-004**	**1.7000e-004**	**2.7000e-004**	**1.0000e-005**	**1.5000e-004**	**1.6000e-004**	**0.0000**	**0.4280**	**0.4280**	**1.4000e-004**	**0.0000**	**0.4314**

3.2 Site Preparation - 2020

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	1.0000e-005	1.0000e-005	8.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0181	0.0181	0.0000	0.0000	0.0182
Total	**1.0000e-005**	**1.0000e-005**	**8.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0181**	**0.0181**	**0.0000**	**0.0000**	**0.0182**

3.3 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7000e-004	7.8700e-003	7.6200e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.5000e-004	4.5000e-004	0.0000	1.0408	1.0408	2.0000e-004	0.0000	1.0457
Total	**8.7000e-004**	**7.8700e-003**	**7.6200e-003**	**1.0000e-005**	**7.5000e-004**	**4.7000e-004**	**1.2200e-003**	**4.1000e-004**	**4.5000e-004**	**8.6000e-004**	**0.0000**	**1.0408**	**1.0408**	**2.0000e-004**	**0.0000**	**1.0457**

3.3 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	3.0000e-005	3.3000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0726	0.0726	0.0000	0.0000	0.0726
Total	**5.0000e-005**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0726**	**0.0726**	**0.0000**	**0.0000**	**0.0726**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9000e-004	0.0000	2.9000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7000e-004	7.8700e-003	7.6200e-003	1.0000e-005		4.7000e-004	4.7000e-004		4.5000e-004	4.5000e-004	0.0000	1.0408	1.0408	2.0000e-004	0.0000	1.0457
Total	**8.7000e-004**	**7.8700e-003**	**7.6200e-003**	**1.0000e-005**	**2.9000e-004**	**4.7000e-004**	**7.6000e-004**	**1.6000e-004**	**4.5000e-004**	**6.1000e-004**	**0.0000**	**1.0408**	**1.0408**	**2.0000e-004**	**0.0000**	**1.0457**

3.3 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-005	3.0000e-005	3.3000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0726	0.0726	0.0000	0.0000	0.0726
Total	**5.0000e-005**	**3.0000e-005**	**3.3000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0726**	**0.0726**	**0.0000**	**0.0000**	**0.0726**

3.4 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0181	0.1859	0.1551	2.4000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	21.0127	21.0127	6.8000e-003	0.0000	21.1826
Total	**0.0181**	**0.1859**	**0.1551**	**2.4000e-004**		**0.0110**	**0.0110**		**0.0101**	**0.0101**	**0.0000**	**21.0127**	**21.0127**	**6.8000e-003**	**0.0000**	**21.1826**

3.4 Building Construction - 2020

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	5.3000e-004	0.0153	3.3500e-003	4.0000e-005	8.3000e-004	8.0000e-005	9.2000e-004	2.4000e-004	8.0000e-005	3.2000e-004	0.0000	3.4295	3.4295	3.4000e-004	0.0000	3.4380
Worker	1.5300e-003	1.0800e-003	0.0112	3.0000e-005	2.6800e-003	2.0000e-005	2.7000e-003	7.1000e-004	2.0000e-005	7.3000e-004	0.0000	2.4380	2.4380	8.0000e-005	0.0000	2.4400
Total	**2.0600e-003**	**0.0164**	**0.0146**	**7.0000e-005**	**3.5100e-003**	**1.0000e-004**	**3.6200e-003**	**9.5000e-004**	**1.0000e-004**	**1.0500e-003**	**0.0000**	**5.8675**	**5.8675**	**4.2000e-004**	**0.0000**	**5.8780**

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	0.0181	0.1859	0.1551	2.4000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	21.0127	21.0127	6.8000e-003	0.0000	21.1826
Total	**0.0181**	**0.1859**	**0.1551**	**2.4000e-004**		**0.0110**	**0.0110**		**0.0101**	**0.0101**	**0.0000**	**21.0127**	**21.0127**	**6.8000e-003**	**0.0000**	**21.1826**

3.4 Building Construction - 2020

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	5.3000e-004	0.0153	3.3500e-003	4.0000e-005	8.3000e-004	8.0000e-005	9.2000e-004	2.4000e-004	8.0000e-005	3.2000e-004	0.0000	3.4295	3.4295	3.4000e-004	0.0000	3.4380
Worker	1.5300e-003	1.0800e-003	0.0112	3.0000e-005	2.6800e-003	2.0000e-005	2.7000e-003	7.1000e-004	2.0000e-005	7.3000e-004	0.0000	2.4380	2.4380	8.0000e-005	0.0000	2.4400
Total	**2.0600e-003**	**0.0164**	**0.0146**	**7.0000e-005**	**3.5100e-003**	**1.0000e-004**	**3.6200e-003**	**9.5000e-004**	**1.0000e-004**	**1.0500e-003**	**0.0000**	**5.8675**	**5.8675**	**4.2000e-004**	**0.0000**	**5.8780**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.484945	0.031816	0.154973	0.120992	0.021332	0.005119	0.015709	0.151573	0.002377	0.002347	0.006486	0.001616	0.000714

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

5.2 Energy by Land Use - NaturalGas

Mitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

High Roller Digester - Construction

Kings County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.63	1000sqft	3.00	625.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	37
Climate Zone	3			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Estimated Acreage

Construction Phase - Anticipated Construction Schedule

Off-road Equipment - Estimated Construction Equipment

Off-road Equipment - Anticipated Construction Equipment

Trips and VMT - Anticipated employes and service trucks

Vehicle Trips - Construction Run Only

Consumer Products - Construction Run Only

Area Coating - Construction Run Only

Landscape Equipment - Construction Run Only

Energy Use - Construction Run Only

Water And Wastewater - Construction Run Only

Solid Waste - Construction Run Only

Construction Off-road Equipment Mitigation -

High Roller Digester - Construction - Kings County, Annual

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	220.00	140.00
tblConstructionPhase	PhaseEndDate	6/4/2021	12/25/2020
tblConstructionPhase	PhaseStartDate	8/1/2020	6/15/2020
tblEnergyUse	LightingElect	2.70	0.00
tblEnergyUse	NT24E	4.16	0.00
tblEnergyUse	NT24NG	3.84	0.00
tblEnergyUse	T24E	1.96	0.00
tblEnergyUse	T24NG	17.03	0.00
tblLandUse	LandUseSquareFeet	630.00	625.00
tblLandUse	LotAcreage	0.01	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	PhaseName		Building Construction
tblOffRoadEquipment	PhaseName		Building Construction
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblSolidWaste	SolidWasteGenerationRate	0.78	0.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	WorkerTripNumber	0.00	5.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	145,687.50	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0758	0.8413	0.5962	1.1800e-003	4.7900e-003	0.0373	0.0421	1.2800e-003	0.0343	0.0356	0.0000	104.1267	104.1267	0.0323	0.0000	104.9332
Maximum	**0.0758**	**0.8413**	**0.5962**	**1.1800e-003**	**4.7900e-003**	**0.0373**	**0.0421**	**1.2800e-003**	**0.0343**	**0.0356**	**0.0000**	**104.1267**	**104.1267**	**0.0323**	**0.0000**	**104.9332**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0758	0.8413	0.5962	1.1800e-003	4.7900e-003	0.0373	0.0421	1.2800e-003	0.0343	0.0356	0.0000	104.1266	104.1266	0.0323	0.0000	104.9331
Maximum	**0.0758**	**0.8413**	**0.5962**	**1.1800e-003**	**4.7900e-003**	**0.0373**	**0.0421**	**1.2800e-003**	**0.0343**	**0.0356**	**0.0000**	**104.1266**	**104.1266**	**0.0323**	**0.0000**	**104.9331**

	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	**8-1-2020**	**9-30-2020**	0.2854	0.2854
		Highest	0.2854	0.2854

2.2 Overall Operational

Unmitigated Operational

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

2.2 Overall Operational

Mitigated Operational

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

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	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	Building Construction	Building Construction	6/15/2020	12/25/2020	5	140	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

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

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	1	8.00	89	0.20
Building Construction	Graders	1	8.00	187	0.41
Building Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	4	5.00	1.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0734	0.8314	0.5780	1.1200e-003		0.0373	0.0373		0.0343	0.0343	0.0000	98.6861	98.6861	0.0319	0.0000	99.4841
Total	**0.0734**	**0.8314**	**0.5780**	**1.1200e-003**		**0.0373**	**0.0373**		**0.0343**	**0.0343**	**0.0000**	**98.6861**	**98.6861**	**0.0319**	**0.0000**	**99.4841**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7000e-004	8.1100e-003	1.6500e-003	2.0000e-005	4.2000e-004	4.0000e-005	4.6000e-004	1.2000e-004	4.0000e-005	1.6000e-004	0.0000	1.7709	1.7709	2.1000e-004	0.0000	1.7761
Worker	2.1700e-003	1.8000e-003	0.0165	4.0000e-005	4.3700e-003	3.0000e-005	4.4000e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.6697	3.6697	1.3000e-004	0.0000	3.6730
Total	**2.4400e-003**	**9.9100e-003**	**0.0182**	**6.0000e-005**	**4.7900e-003**	**7.0000e-005**	**4.8600e-003**	**1.2800e-003**	**7.0000e-005**	**1.3500e-003**	**0.0000**	**5.4406**	**5.4406**	**3.4000e-004**	**0.0000**	**5.4492**

3.2 Building Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0734	0.8314	0.5780	1.1200e-003		0.0373	0.0373		0.0343	0.0343	0.0000	98.6860	98.6860	0.0319	0.0000	99.4839
Total	**0.0734**	**0.8314**	**0.5780**	**1.1200e-003**		**0.0373**	**0.0373**		**0.0343**	**0.0343**	**0.0000**	**98.6860**	**98.6860**	**0.0319**	**0.0000**	**99.4839**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.7000e-004	8.1100e-003	1.6500e-003	2.0000e-005	4.2000e-004	4.0000e-005	4.6000e-004	1.2000e-004	4.0000e-005	1.6000e-004	0.0000	1.7709	1.7709	2.1000e-004	0.0000	1.7761
Worker	2.1700e-003	1.8000e-003	0.0165	4.0000e-005	4.3700e-003	3.0000e-005	4.4000e-003	1.1600e-003	3.0000e-005	1.1900e-003	0.0000	3.6697	3.6697	1.3000e-004	0.0000	3.6730
Total	**2.4400e-003**	**9.9100e-003**	**0.0182**	**6.0000e-005**	**4.7900e-003**	**7.0000e-005**	**4.8600e-003**	**1.2800e-003**	**7.0000e-005**	**1.3500e-003**	**0.0000**	**5.4406**	**5.4406**	**3.4000e-004**	**0.0000**	**5.4492**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.481390	0.032808	0.168621	0.127212	0.018382	0.004997	0.032622	0.122881	0.002369	0.001675	0.005261	0.001115	0.000667

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

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

Mitigated

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

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

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

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

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

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT C: CARB 2015 AND 2020 ESTIMATED EMISSION INVENTORIES

2016 SIP Emission Projection Data

2015 Estimated Annual Average Emissions

KINGS COUNTY

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	1.1	0.2	1.1	1.2	0.1	0.2	0.2	0.2	0.0
WASTE DISPOSAL	56.2	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.2
CLEANING AND SURFACE COATINGS	0.6	0.5	-	-	-	0.0	0.0	0.0	0.0
PETROLEUM PRODUCTION AND MARKETING	8.5	0.3	0.0	-	0.0	-	-	-	-
INDUSTRIAL PROCESSES	0.6	0.6	-	-	-	1.3	0.6	0.1	0.0
*** TOTAL STATIONARY SOURCES**	**67.0**	**3.4**	**1.1**	**1.2**	**0.1**	**1.5**	**0.7**	**0.3**	**0.2**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	2.7	2.5	-	-	-	-	-	-	8.2
MISCELLANEOUS PROCESSES	76.0	10.2	1.1	0.2	0.0	43.8	21.1	3.2	20.8
*** TOTAL AREAWIDE SOURCES**	**78.6**	**12.7**	**1.1**	**0.2**	**0.0**	**43.8**	**21.1**	**3.2**	**29.1**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	1.7	1.5	10.9	6.8	0.0	0.3	0.3	0.2	0.2
OTHER MOBILE SOURCES	3.9	3.7	16.1	5.8	0.1	1.3	1.3	1.2	0.0
*** TOTAL MOBILE SOURCES**	**5.6**	**5.2**	**27.0**	**12.6**	**0.1**	**1.6**	**1.6**	**1.4**	**0.2**
GRAND TOTAL FOR KINGS COUNTY	**151.2**	**21.3**	**29.1**	**14.0**	**0.2**	**47.0**	**23.4**	**4.9**	**29.5**

2016 SIP Emission Projection Data

2015 Estimated Annual Average Emissions

SAN JOAQUIN VALLEY AIR BASIN

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	18.5	3.5	24.8	27.0	2.3	5.0	4.8	4.7	2.1
WASTE DISPOSAL	495.3	25.7	0.5	0.3	0.1	0.9	0.3	0.1	10.3
CLEANING AND SURFACE COATINGS	26.0	23.6	-	-	-	0.3	0.3	0.3	0.0
PETROLEUM PRODUCTION AND MARKETING	112.0	18.3	1.1	0.4	0.5	0.2	0.1	0.1	0.0
INDUSTRIAL PROCESSES	18.8	17.7	1.3	3.7	3.3	19.0	8.6	3.3	1.6
*** TOTAL STATIONARY SOURCES**	**670.6**	**88.8**	**27.7**	**31.4**	**6.2**	**25.3**	**14.1**	**8.5**	**14.1**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	52.7	47.9	-	-	-	-	-	-	116.3
MISCELLANEOUS PROCESSES	761.7	102.9	53.3	8.1	0.3	467.5	233.8	41.3	193.4
*** TOTAL AREAWIDE SOURCES**	**814.4**	**150.8**	**53.3**	**8.1**	**0.3**	**467.5**	**233.8**	**41.3**	**309.7**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	42.5	38.6	276.3	141.6	0.6	8.3	8.2	4.2	4.1
OTHER MOBILE SOURCES	35.4	31.3	189.3	82.2	0.3	6.1	6.0	5.5	0.0
*** TOTAL MOBILE SOURCES**	**77.9**	**69.9**	**465.6**	**223.8**	**0.9**	**14.4**	**14.1**	**9.7**	**4.2**

2016 SIP Emission Projection Data

2020 Estimated Annual Average Emissions

KINGS COUNTY

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	1.1	0.2	1.0	0.9	0.1	0.1	0.1	0.1	0.0
WASTE DISPOSAL	59.9	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.2
CLEANING AND SURFACE COATINGS	0.6	0.5	-	-	-	0.0	0.0	0.0	0.0
PETROLEUM PRODUCTION AND MARKETING	8.7	0.3	-	-	0.0	-	-	-	-
INDUSTRIAL PROCESSES	0.7	0.7	-	-	-	1.4	0.6	0.1	0.0
*** TOTAL STATIONARY SOURCES**	**71.0**	**3.5**	**1.0**	**0.9**	**0.1**	**1.6**	**0.8**	**0.3**	**0.2**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	2.6	2.4	-	-	-	-	-	-	7.5
MISCELLANEOUS PROCESSES	76.0	10.2	1.1	0.2	0.0	41.4	20.0	3.0	20.9
*** TOTAL AREAWIDE SOURCES**	**78.6**	**12.7**	**1.1**	**0.2**	**0.0**	**41.4**	**20.0**	**3.0**	**28.3**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	1.1	1.0	6.5	4.8	0.0	0.3	0.3	0.1	0.1
OTHER MOBILE SOURCES	4.6	4.4	24.2	7.1	0.1	1.7	1.7	1.6	0.0
*** TOTAL MOBILE SOURCES**	**5.7**	**5.4**	**30.7**	**11.9**	**0.1**	**2.0**	**2.0**	**1.8**	**0.1**
GRAND TOTAL FOR KINGS COUNTY	**155.3**	**21.6**	**32.7**	**13.0**	**0.2**	**45.0**	**22.7**	**5.0**	**28.7**

2016 SIP Emission Projection Data

2020 Estimated Annual Average Emissions

SAN JOAQUIN VALLEY AIR BASIN

All emissions are represented in Tons per Day and reflect the most current data provided to ARB.

See detailed information.

Start a new query.

STATIONARY SOURCES	TOG	ROG	CO	NOX	SOX	PM	PM10	PM2.5	NH3
FUEL COMBUSTION	17.9	3.2	24.7	24.1	2.4	4.8	4.7	4.6	2.2
WASTE DISPOSAL	527.3	26.9	0.6	0.3	0.2	0.9	0.3	0.2	11.2
CLEANING AND SURFACE COATINGS	27.8	25.2	-	-	-	0.3	0.3	0.3	0.0
PETROLEUM PRODUCTION AND MARKETING	111.0	16.6	1.0	0.4	0.4	0.2	0.1	0.1	0.0
INDUSTRIAL PROCESSES	20.6	19.5	1.4	3.9	3.6	20.9	9.5	3.6	1.7
*** TOTAL STATIONARY SOURCES**	**704.7**	**91.3**	**27.7**	**28.6**	**6.5**	**27.2**	**14.9**	**8.7**	**15.2**
AREAWIDE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
SOLVENT EVAPORATION	55.0	49.9	-	-	-	-	-	-	113.1
MISCELLANEOUS PROCESSES	761.8	103.0	53.2	7.9	0.3	473.4	236.8	41.8	193.9
*** TOTAL AREAWIDE SOURCES**	**816.8**	**152.8**	**53.2**	**7.9**	**0.3**	**473.4**	**236.8**	**41.8**	**307.0**
MOBILE SOURCES	**TOG**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**PM10**	**PM2.5**	**NH3**
ON-ROAD MOTOR VEHICLES	27.3	24.9	167.9	96.9	0.6	7.8	7.6	3.4	3.6
OTHER MOBILE SOURCES	30.6	27.2	196.2	69.8	0.3	5.6	5.5	5.0	0.0
*** TOTAL MOBILE SOURCES**	**57.9**	**52.0**	**364.1**	**166.8**	**1.0**	**13.4**	**13.1**	**8.5**	**3.6**

BIOLOGICAL ANALYSIS REPORT

HIGH ROLLER DAIRY

HIGH ROLLER DAIRY DIGESTER PROJECT

JUNE 2020

BIOLOGICAL ANALYSIS REPORT

HIGH ROLLER DAIRY DIGESETER PROJECT

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June 2020

Project #200098

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ACRONYMS AND ABBREVIATIONS

APN	Assessor Parcel Number
BAR	Biological Analysis Report
BIOS	Biogeography Information and Observation System
BSA	Biological Study Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
RWQCB	Regional Water Quality Control Board
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

EXECUTIVE SUMMARY

Quad Knopf, Inc. (QK) prepared this Biological Analysis Report (BAR) to evaluate the potential for special-status biological resources to be impacted by the construction of the High Roller Dairy Expansion Project (Project) in Kings, County, California.

The proposed Project is located approximately 2-miles southeast of Hanford, California at the intersection of State Route 43 and Jackson Avenue. The Project includes the construction of an anaerobic lagoon digester adjacent to the western boundary of the dairy. The dairy also plans to add several free stalls, hay barns, and manure stacking areas. In order to comply with the Dairy Element of the Kings County General Plan and the California Environmental Quality Act (CEQA), the preparation of a Tiered Environmental Impact Report and approval of a Conditional Use Permit by the lead agency is required.

A database review and reconnaissance site visit were completed by QK biologists to characterize the existing conditions on-site and determine the potential for special-status species and other sensitive biological resources to occur on-site that may be impacted by the Project.

The Project site is dominated by Urban, and Irrigated Grain Crop habitat, as defined by the California Department of Fish and Wildlife's California Wildlife Habitat Relationships system. No sensitive natural communities are present on Project site. Four water features were documented on Project site. No special-status plant or wildlife species were observed on the Project site. Five special-status wildlife species were determined to have a potential to occur on the Project: Tricolored blackbird (*Agelaius tricolor*), Burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), American badger (*Taxidea taxus*) and San Joaquin kit fox (*Vulpes macrotis mutica*).

Direct impacts could include loss of suitable habitat and injury or mortality of individual special-status species during the breeding season. Nesting birds protected by the California Fish and Game Code and Migratory Bird Treaty Act also have the potential to occur on-site. Avoidance and minimization measures are recommended which, when implemented, would reduce Project impacts to biological resources to a less than significant level.

SECTION 1 - INTRODUCTION

Quad Knopf, Inc. (QK) prepared this Biological Analysis Report (BAR) to evaluate the potential impacts to special-status biological resources by the construction of the High Roller Dairy Digester Project (Project) near the City of Hanford, California.

1.1 - Project Location

The proposed Project is located approximately 2-miles southeast of Hanford, California at the intersection of State Route (SR) 43 and Jackson Avenue (Figures 1-1 and 1-2). It is within the *Remnoy*, *California* U.S. Geological Survey (USGS) 7.5-minute quadrangle, and within the southwest quarter of the southeast quarter of Section 20, Township 19 South, Range 22 East, Mount Diablo Base and Meridian. The proposed Project will be built on a portion of the southern section of Assessor Parcel Number (APN) 028-400-160.

1.2 - Project Description

The Project includes the construction of a double-lined anaerobic lagoon digester adjacent to the western boundary of the dairy. Due to the improved manure management system, the dairy also would like to plan for future expansion by increasing the number of dairy cows, free stalls, hay barns, and manure stacking areas.

In order to comply with the Dairy Element of the Kings County General Plan and the California Environmental Quality Act (CEQA), the preparation of a Tiered Environmental Impact Report and approval of a Conditional Use Permit by the lead agency is required.

1.3 - Purpose, Goals, and Objectives

The purpose of this BAR is to identify where potential special-status biological resources may occur within the Project site, determine how those resources may be impacted by the proposed Project, and recommend avoidance and minimization measures to reduce or eliminate the potential for impacts to a less than significant level. This BAR was prepared to support an analysis of biological conditions as required by CEQA, and to support regulatory permit applications. A summary of the State, local and federal regulatory setting is provided in Section 3 and Appendix A.

Figure 1-1
Regional Map
High Roller Dairy Expansion Project,
Kings County, California

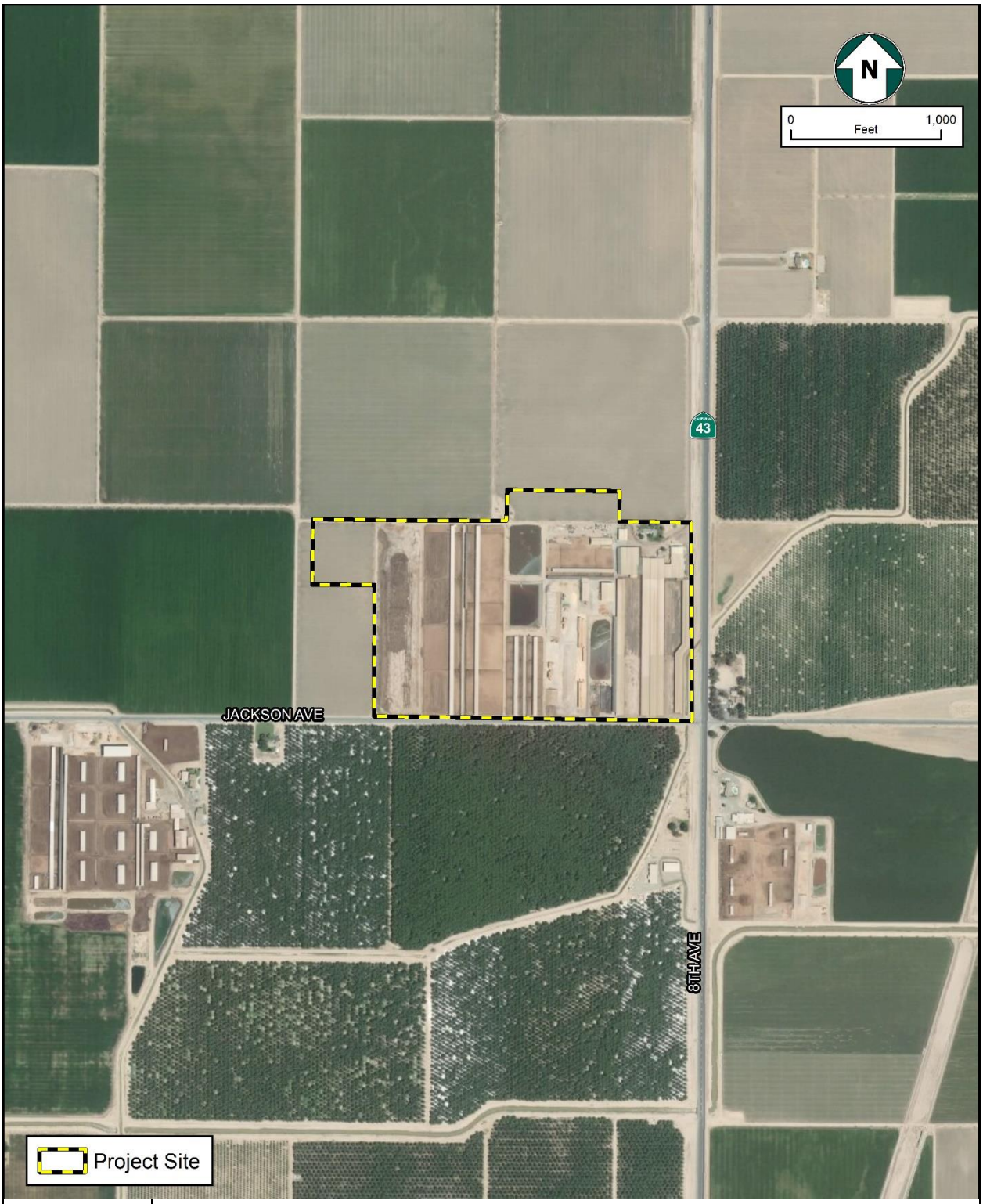

Figure 1-2
Project Location Map
High Roller Dairy Expansion Project,
Kings County, California

SECTION 2 - METHODS

2.1 - Definition of Biological Study Area

The Biological Study Area (BSA) for the High Roller dairy Project consists of the Project site and a 500-foot buffer surrounding the Project site (Figure 2-1).

2.2 - Definition of Special-Status Species

Special-status species included in this BAR consist of:

Species listed as threatened or endangered under the Federal Endangered Species Act (FESA); species that are under review may be included if there is a reasonable expectation of listing within the life of the project,
Species listed as candidate, threatened, or endangered under the California Endangered Species Act (CESA),
Species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife (CDFW),
Other species included on the CDFW's Special Animals List,
Plant species with a California Rare Plant Rank (CRPR) in categories 1 or 2,
Species designated as locally important by the Local Agency and/or otherwise protected through ordinance or local policy.

The potential for each special-status species to occur in the study area was evaluated according to the following criteria:

No. Habitat on and adjacent to the site is clearly unsuitable to meet the needs of the species (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and species would have been identifiable on-site if present (e.g., oak trees)..
Yes. Conditions on the site may, in some way, support a portion of the species ecology (foraging, reproduction, movement/migration)..
Present. Species was observed on the site or has been recorded (e.g., CNDDB, other reports) on the site recently (within the last 5 years).

2.3 - Literature Review and Database Analysis

The following sources were reviewed for information on special-status biological resources in the project vicinity:

CDFW's California Natural Diversity Database (CDFW 2020a)
CDFW's Biogeographic Information and Observation System (CDFW 2020b)
CDFW's Special Animals List (CDFW 2020c)

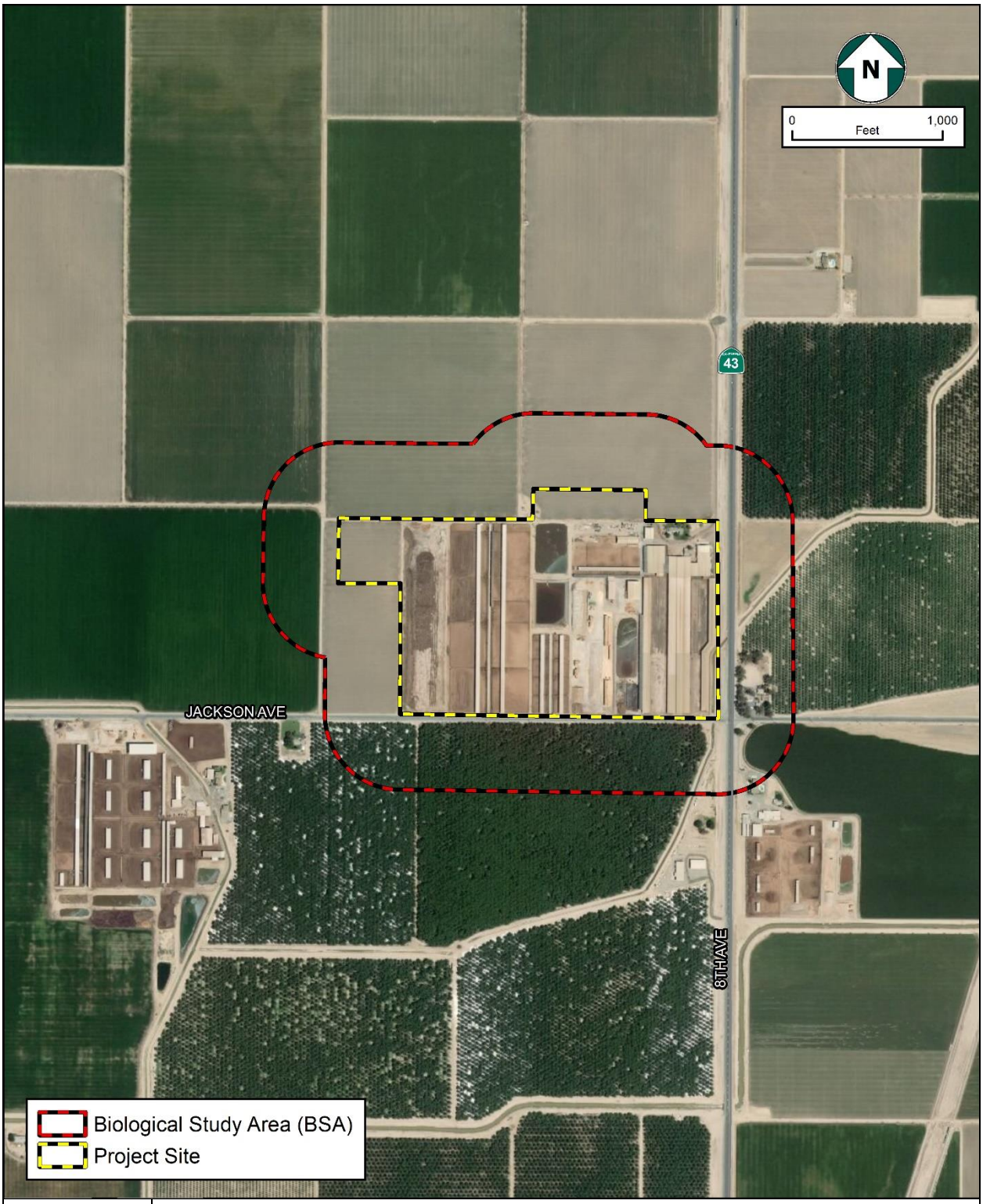

Figure 2-1
Biological Study Area
High Roller Dairy Expansion Project,
Kings County, California

CDFW's California Wildlife Habitat Relationships (CWHR) System (Mayer and Laudenslayer 1988)
California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2020)
U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation system (USFWS 2020a)
USFWS Critical Habitat Mapper (USFWS 2020b)
USFWS National Wetlands Inventory (USFWS 2020c)
USGS National Hydrography Dataset (USGS 2020a)
Federal Emergency Management Agency (FEMA) flood zone maps (FEMA 2020)
U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2020a)
NRCS List of Hydric Soils (NRCS 2020b)
Current and historical aerial imagery (Google LLC 2020)
Topographic maps (USGS 2020)

For each of these data sources, the search was focused on the *Remnoy, California* USGS 7.5-minute quadrangle in which the Project is located, plus the surrounding eight quadrangles: *Laton*, *Burris Park*, *Traver*, *Hanford*, *Goshen*, *Guernsey*, *Waukena*, and *Paige.* A 10-mile search radius was used for acquiring information from the California Natural Diversity Database (CNDDB).

The CNDDB provides element-specific spatial information on individually documented occurrences of special-status species and sensitive natural communities. Some of the information available for review in the CNDDB is still undergoing review by the CDFW; these records are identified as unprocessed data. The CNPS database provides similar information as the CNDDB, but at a much lower spatial resolution. Much of this information in these databases is obtained opportunistically and is often focused on protected lands or on lands where development has been proposed. Neither database represents a comprehensive survey for special-status resources in the region. As such, the absence of recorded occurrences in these databases at any specific location does not preclude the possibility that a special-status resource could be present. The National Wetlands Inventory (NWI), National Hydrography Dataset (NHD), and Web Soil Survey provide comprehensive data, but at a low resolution that requires confirmation in the field.

The results of the database inquiries were reviewed to develop a list of special-status resources that may be present in the vicinity of the Project. This list was then evaluated against the existing conditions observed during the reconnaissance site visit of the BSA to determine which special-status resources have the potential to occur, and then the potential for impacts to those resources as a result of implementation of the Project.

2.4 - Reconnaissance-Level Field Surveys

A reconnaissance survey of the BSA was conducted on March 12, 2020, by QK Associate Biologist Eric Madueno and QK Assistant Biologist Erica Pena. The survey consisted of walking meandering pedestrian transects spaced 50 to 100 feet apart, supplemented with a

windshield survey covering the entire Project and the 500-foot survey buffer, where feasible. Portions of the buffer fell within private property and these areas were visually surveyed with the aid of binoculars. During the survey 100 percent visual coverage of the BSA was achieved.

General tasks completed during the survey included: inventory plant and wildlife species observed; characterization of vegetation associations and habitat conditions within the BSA; assessment of the potential for federally and State-listed and special-status plant and wildlife species to occur on and near the Project; and an assessment of nesting migratory birds and raptors. All locational data was recorded using ESRI Collector for ArcGIS software installed on an iPad and site conditions were documented with representative photographs (Appendix B).

SECTION 3 - REGULATORY SETTING

Regulated or sensitive resources that were studied and analyzed include special-status plant and animal species, nesting birds and raptors, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement areas, and locally protected resources such as protected trees. Regulatory authority over biological resources is shared by federal, State, and local authorities. Primary authority for regulation of general biological resources lies within the land use control and planning authority of local jurisdictions, which for this Project is Kings County.

Potential impacts to biological resources were analyzed based on the following list of statutes. Summaries of these statues are provided in Appendix A.

CEQA
FESA
CESA
Federal Clean Water Act
California Fish and Wildlife Code
Migratory Bird Treaty Act
The Bald and Golden Eagle Protection Act
Porter-Cologne Water Quality Control Act
Kings County General Plan

SECTION 4 - ENVIRONMENTAL SETTING

This section identifies the regional and local environmental setting of the Project and describes existing baseline conditions. The environmental setting of the BSA was obtained from various sources of literature, databases, and aerial photographs. Site conditions were verified and updated during the site reconnaissance survey conducted by QK biologists (Table 4-1).

Table 4-1
Field Survey Personnel and Timing

Date	Personnel	Time	Weather Conditions	Temperature
03/12/2020	Eric Madueno, Erica Pena	0930 - 1150	Light fog	49-60 °F

4.1 - Physical Characteristics

The BSA is located approximately 1.7 miles northwest of the City of Hanford, California. The BSA includes a dairy cattle production facility, orchards and crop lands; the region in general supports similar agricultural activities with little to no undeveloped parcels. The Project site is within the cattle production facility and a portion of adjacent crop land (see figure 2-1). Representative photographs of the BSA are included in Appendix B.

4.1.1 - TOPOGRAPHY

The BSA is on the eastern floor of the Central Valley in the northeastern portion of Kings County. The topography of the BSA is relatively flat with an elevation of about 230 feet above mean sea level. There are earthen spoil piles, haystacks, and other dairy related materials stored throughout the Project site providing some topographic variation amongst relatively flat terrain (Appendix B, Photographs 5 and 10).

4.1.2 - CLIMATE

The BSA is within an area that has a Mediterranean climate of hot summers and mild, wet winters. Average high temperatures range from 54.7°F in January to 96.1°F in July, with daily temperatures often exceeding 100°F several days in the summer (WWRC 2020). Average low temperatures range from 34.6°F in December to 62.5°F in July. Precipitation occurs primarily as rain, most of which falls from November to April, with an average of 8.38 inches of rainfall per year. Precipitation may also occur as a dense fog during the winter known as Tule fog. Rain rarely falls during the summer months.

4.1.3 - LAND USE

Most of the BSA is on an active dairy cattle production facility with some portions the BSA extending into adjacent cropland (see Figure 2-1). Historical imagery shows that the land

has been used for agricultural purposes since 1994 (Google LLC 2020, Netronline 2020). The region in general supports similar agricultural activities with little to no undeveloped lands.

The Project site is bounded to its east by SR43 and to the west is Jackson Avenue. Land use beyond these roads consist of orchards, croplands and a food market. Land west and north of the site are similarly used for cropland.

4.1.4 - SOILS

The BSA is underlain by four soil types, but the Project site is underlain by only two soil types: Kimberlina fine sandy loam and Excelsior sandy loam (Figure 4-1). All four soil types are described below.

Kimberlina fine sandy loam, 0 to 2 percent slope. The Kimberlina series consists of very deep, well-drained soils on flood plains and recent alluvial fans (NRCS 2020). These soils are formed in mixed alluvium derived primarily from igneous and/or sedimentary rock sources. Slopes range from 0 to 2 percent at elevations from 125 to 2,250 feet. The climate is arid with hot, dry summers and cool winters. Mean precipitation is 4 to 8 inches annually and the mean annual air temperature ranges from 59 to 62 °F. Kimberlina soils are used for irrigated field, forage, and row crops, and for livestock grazing. When undisturbed these soils support annual grasses, forbs, and saltbush (*Atriplex* sp.). Kimberlina fine sandy loam may be considered hydric under NRCS Criteria 2 and/or 4 under certain conditions.

Excelsior sandy loam, 0 to 1 percent slope. The Excelsior series consists of moderately, well drained soils on alluvial fans, and bars and channels on flood plains (NRCS 2020). These soils are formed in alluvium derived from igneous and sedimentary rock. Slopes range from 0 to 1 percent and can be found at elevations between 180 to 1,000 feet in the San Joaquin Valley. The climate is arid with hot, dry summers and cool moist winters. Mean precipitation is 5 to 8 inches annually and the mean annual air temperature ranges from 62 to 65 degrees F. Excelsior soils are used for irrigated cropland growing and dairy and cattle production and building site development. Excelsior sandy loam may be considered hydric under NRCS Criterion 4 when in sloughs.

Wasco sandy loam, 0 to 5 percent slopes. The Wasco series consists of very deep, well-drained soils on recent alluvial fans and flood plains on slopes between 0 and 5 percent (NRCS 2020). Wasco sandy loam soils are formed in mixed alluvium derived mainly from igneous and/or sedimentary rock sources. These soils can be found between 225 and 1,000 feet in the southern San Joaquin Valley, and as high as 3,700 feet in the Mojave Desert; the series is of large extent. The climate is arid to semiarid, with hot, dry summers and cool, somewhat moist winters. Mean annual precipitation is 4 to 7 inches and mean annual temperature is between 59 and 62 °F in the Mojave Desert and 62 and 65 °F in the San Joaquin Valley. Wasco soils are used primarily for growing field, forage, and row crops; some areas are used for livestock grazing, wildlife habitat, recreation, and homesites. Natural vegetation is saltbush (*Atriplex* sp.) and annual grasses and forbs. Wasco sandy loam is not considered hydric.

Cajon sandy loam, 0 to 1 percent slope. Cajon soils consist of loamy sands to very cobbly loamy coarse sands that are formed of alluvium derived from granite (NRCS 2020). They are somewhat excessively drained, exhibit negligible runoff, and rarely flood. They are found on inset fans and are not considered prime farmland. Cajon sandy loam may be considered hydric under NRCS Criteria 2 and/or 4 depending on location.

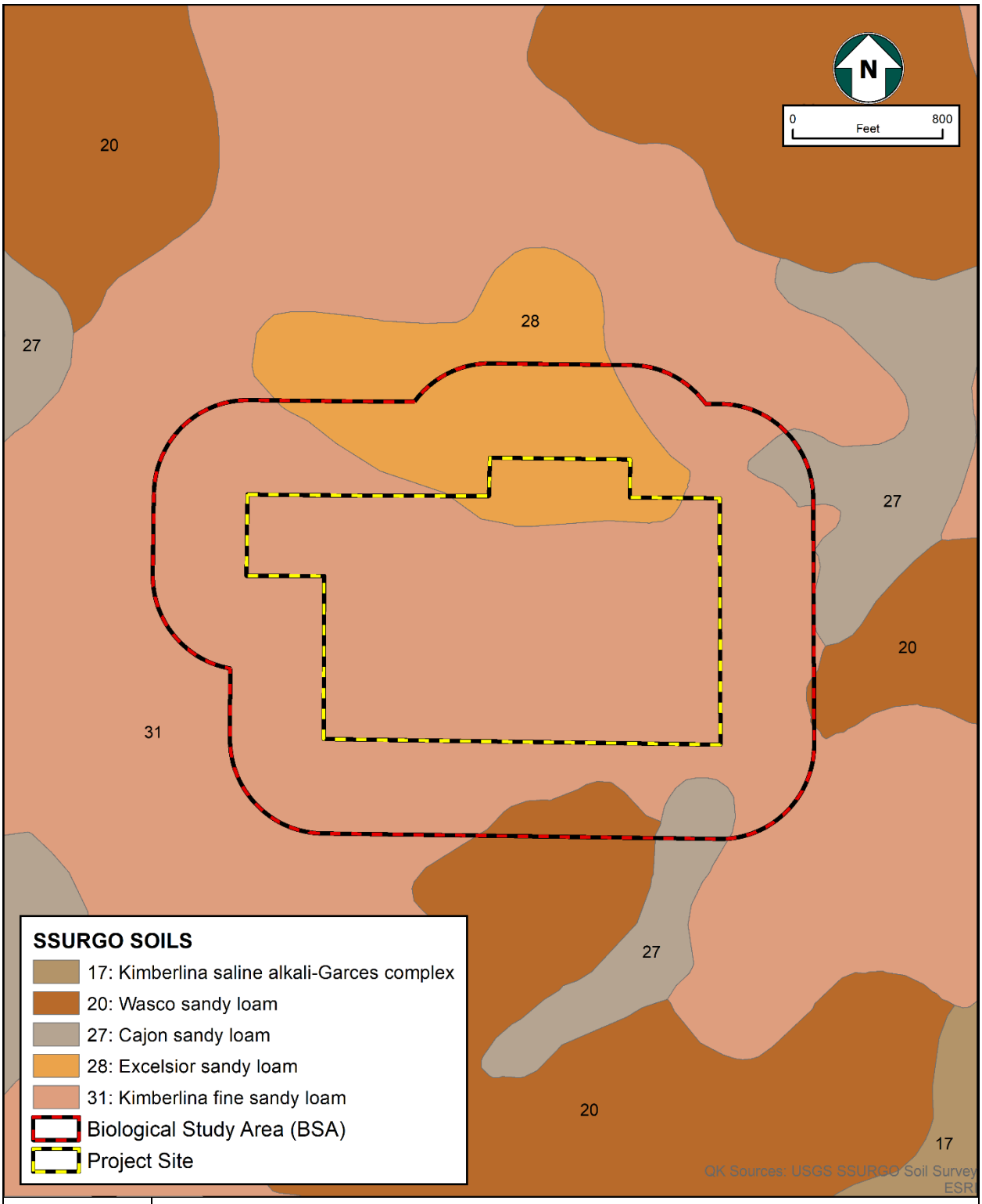

Figure 4-1
Soils Mapped within the BSA
High Roller Dairy Expansion Project,
Kings County, California

4.1.5 - HYDROLOGY

There are five water features within the BSA, one stream feature and four manmade basins (Figure 4-2). The stream feature is designated as a canal/ditch by the (NHD, USGS 2020a) and is described as R5UBFx according to the Cowardin classification system (Cowardin 1979). The feature lacked any significant vegetative cover and appears to be well maintained. The bed is sandy, and the banks do not contain any riprap. While it was not inundated at the time of the survey, historic aerials show evidence of intermittent water flow. Water in this unnamed feature originates from the East Branch Peoples Ditch northeast of the BSA before flowing southwest into the eastern half of the BSA. After leaving the BSA, the feature flows southwest and eventually connects with another unnamed stream feature.

Three basins are designated as freshwater ponds by the NHD (USGS 2020a) and are described as PUBFx. One basin was not shown in the NHD. Three of the manmade basins are located within the dairy cattle production facility. Two are currently used as lagoons for storage/treatment of dairy waste and the third is used as an anaerobic covered lagoon digester. No vegetation was documented at these basins which were inundated at the time of the survey. The fourth basin occurs in the northeast portion of the BSA, outside the dairy facility on the eastern side of the SR 43. That basin appears to be used as water storage for the adjacent orchard lands. At the time of the survey, the basin was dry, and evidence of recent maintenance was documented. There was no vegetation documented at the fourth basin.

According to the Federal Emergency Management Agency (FEMA), the BSA is within an area of minimal flood hazard (FEMA 2020) and is presented in Figure 4-3.

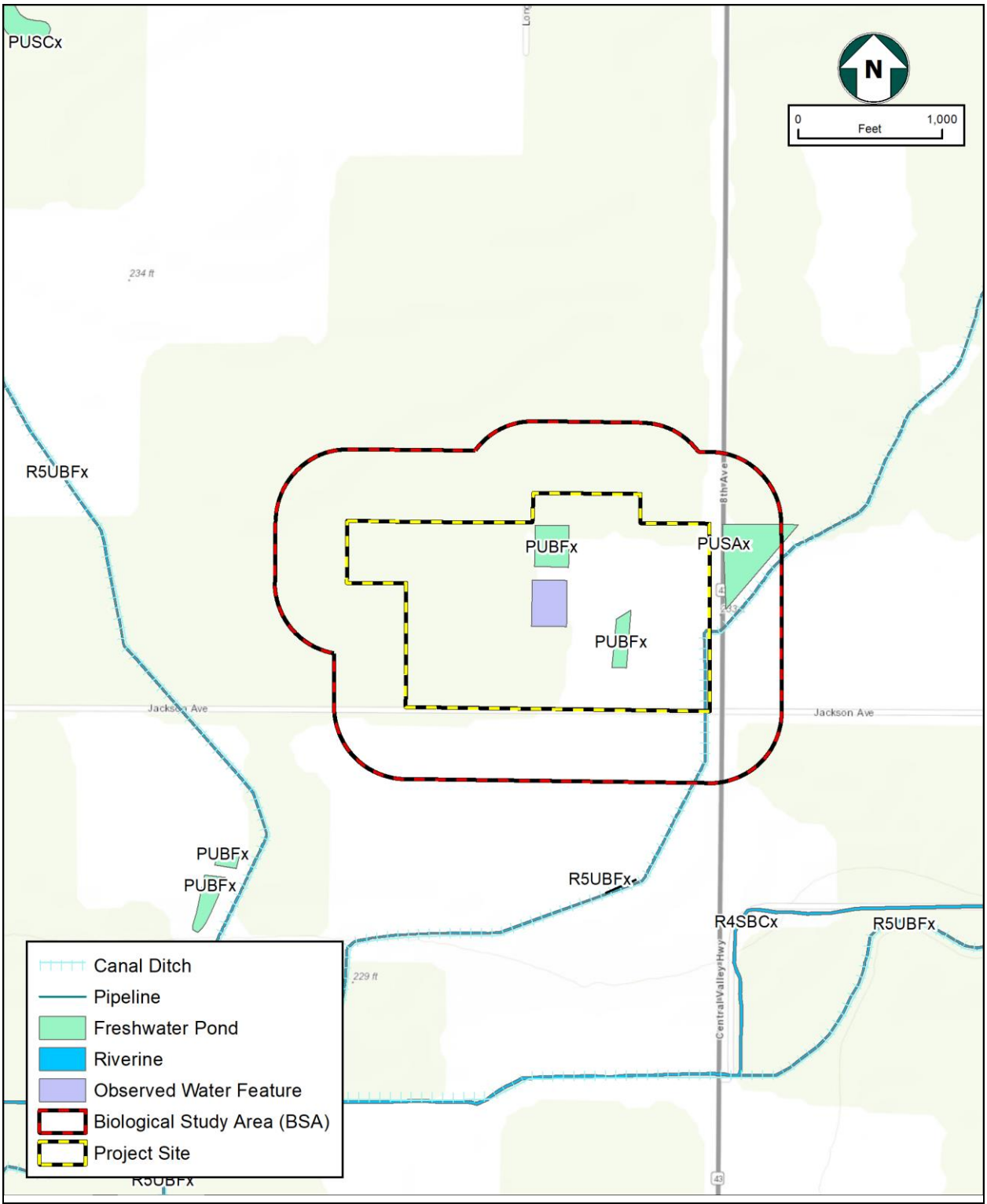

Figure 4-2
NWI, NHD and observed Aquatic Resources
High Roller Dairy Expansion Project,
Kings County, California

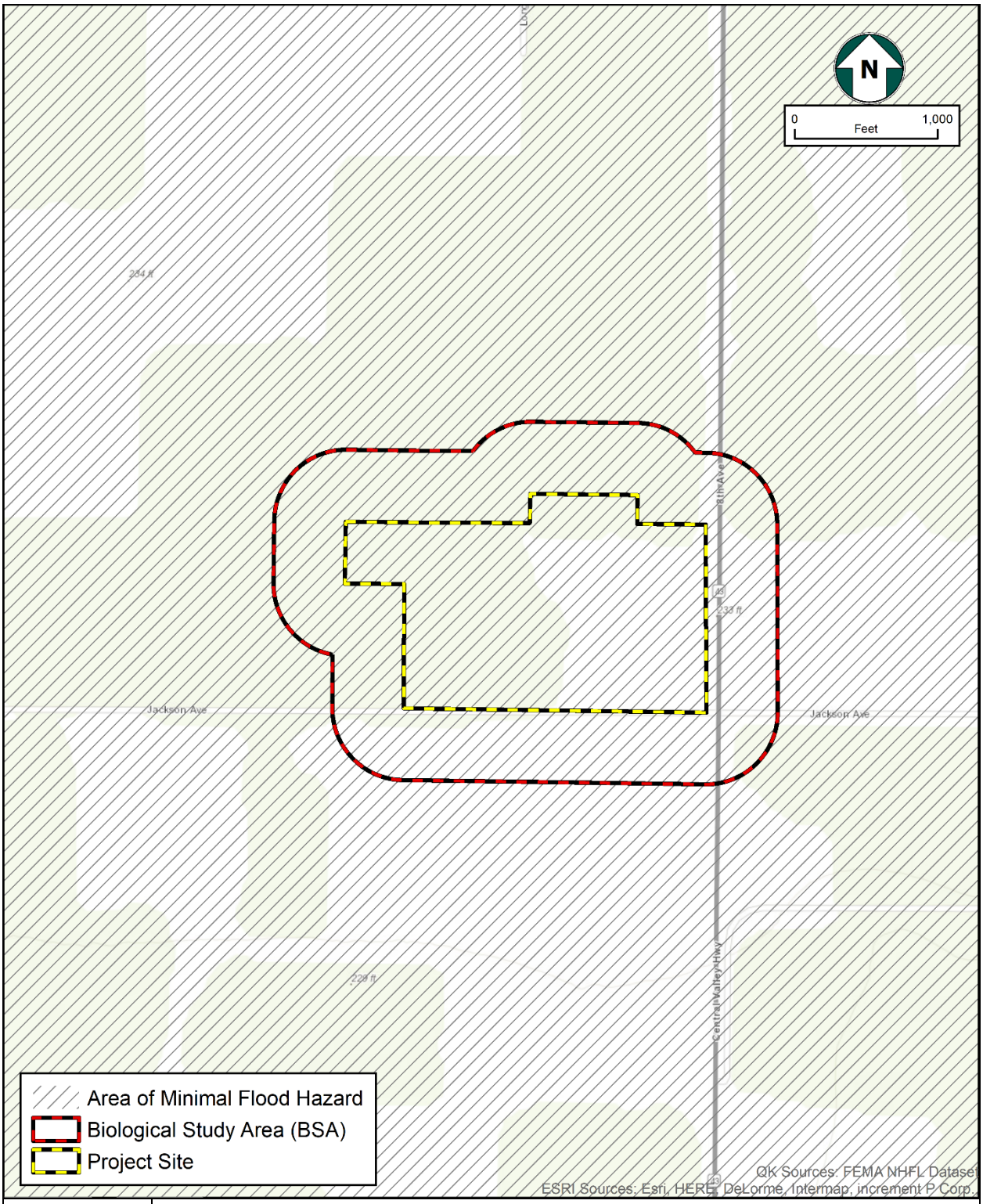

Figure 4-3
FEMA Flood Zone Map
High Roller Dairy Expansion Project,
Kings County, California

4.2 - Vegetation and Other Land Cover

Four habitat types were observed within the BSA: Irrigated Grain Crops, Deciduous Orchard Barren, and Urban (Figure 4-4). The habitats observed on-site have been described in the context of the CWHR (Mayer and Laudenslayer 1988). Habitat type acreage within the BSA and Project site are listed in Table 4-2.

Table 4-2
Habitat Acreages Observed On-Site

Habitat Type	Acreages	
	BSA	Project Site
Barren	1.23	0
Deciduous Orchard	32.21	0
Irrigated Grain Crops	65.85	7.57
Urban	61.86	57.76

Barren

This non-vegetated habitat is defined by the absence of vegetation. Any habitat with less than 2 percent total vegetation cover by herbaceous, desert, or non-wildland species and less than 10percent cover by tree or shrub species is defined this way. Barren habitat may be found in combination with many different habitats, depending on the region of the State. Where there is little or no vegetation, structure of the non-vegetated substrate becomes a critical component of the habitat. Certain bird species nest on rock ledges and open ground covered with sand or gravel to construct scrape nests. Rocky canyon walls above open water are preferred foraging habitat for many bats. The physical settings for permanently barren habitat represent extreme environments for vegetation.

A small area on the southeast portion of the BSA outside the Project site boundary consists of barren habitat (Figure 4-4). Less than 2 percent vegetation cover was observed in this habitat and most of the vegetation consisted of ruderal species.

Deciduous Orchard

Deciduous orchards are typically monoculture operation with trees arranged in rows. Trees are spaced uniformly trimmed to be low and bushy so the fruit is reachable during harvest. Common species are almonds, apples, pomegranates, cherries, figs, plums, and pistachios. Trees range from 10 to 15 feet with certain species being allowed to grow much higher. Some farmers allow grasses like rye or sorghum to grow between the rows but mostly they are barren with small patches of non-native grasses and herbs scattered throughout. Small mammals are often found along orchard rows or adjacent to fence posts. Nests in orchard trees are uncommon but birds may use orchard and vineyards for perching or hunting. Other animals may traverse these lands but limited foraging, breeding, and sheltering occurs here. Deciduous orchards are most often placed on flat ground.

Deciduous orchard habitat occurs directly east and south of the Project site (see Figure 4-4). According to historical imagery, these areas have supported orchards consistently for the past two decades (Netronline 2020). Almond orchards are currently present within these areas.

Irrigated Grain Crops

This developed habitat includes a variety of sizes, shapes and growing patterns that primarily include annuals like corn, dry beans, safflower, barley, and wheat. Irrigated grain and seed crops are established on the State's most fertile soils, which historically supported an abundance of wildlife unequalled in other sites. Croplands have greatly reduced the wildlife habitat richness and diversity in California. Many species of rodents and birds have adapted to croplands and are controlled by fencing, trapping, and poisoning to prevent excessive crop losses. Irrigated grain and seed crops are located on flat to gently rolling terrain.

Irrigated grain crops habitat dominates most of the northern and western portions of the BSA (see Figure 4-4). According to historical imagery, this area has supported row crops consistently for the past two decades (Netronline 2020). These areas currently support flood irrigated barley crops.

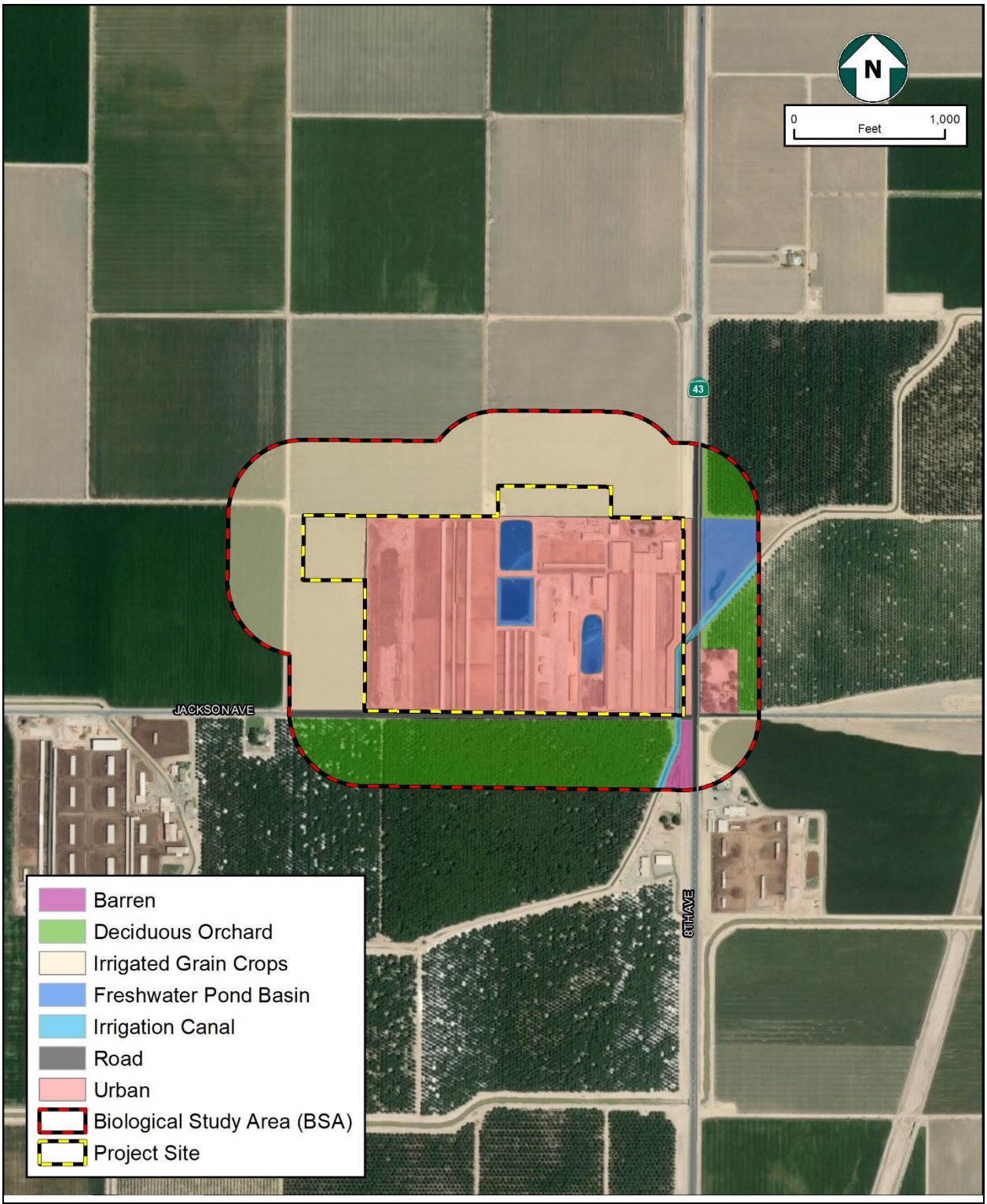

Figure 4-4
Vegetation Communities within the BSA
High Roller Dairy Expansion Project,
Kings County, California

Urban

This developed habitat includes five types of vegetative structure which includes tree grove, street strip, shade tree/lawn, lawn, and shrub cover. Species composition in urban habitats varies with planting design and climate. Monoculture is commonly observed in tree groves and street tree strips. Three urban categories relevant to wildlife are distinguished: downtown, urban residential, and suburbia. There is a progression outward of decreasing development and increasing vegetative cover. Species richness and diversity is extremely low in the inner cover. Urban habitats are not limited to any particular physical setting.

A large portion of the BSA consists of Urban habitat (see Figure 4-4). Most of the Project site is urban except for two small areas that are irrigated grain crop habitat. A small area directly east of the Project site is also urban. These areas include paved roads, residential and commercial development, and associated landscaping. Vegetation commonly associated with urban habitat includes ornamental herbs (grass lawns, weeds, and flowers), shrubs, hedges, and trees, as well as ruderal species. Species observed during the survey included Eucalyptus (*Eucalyptus sp.*), Mexican fan palm (*Washingtonia robusta),* London rocket (*Sisymbrium irio*), and shepherd's purse (*Capsella bursa*).

4.3 - General Wildlife Observations

Wildlife species observed during the survey were typical for urban and agricultural habitats in the Central Valley. Bird species included American crow (*Corvus brachyrhynchos*), northern harrier (*Circus hudsonius*), mourning dove (*Zenaida macroura*) and house sparrow (*Passer domesticus*). Erosion was evident along the edge of a lagoon digester. The erosion resembled small mammal burrows and may be potentially used as such. A complete list of wildlife observed is included in Appendix C.

SECTION 5 - SPECIAL-STATUS RESOURCES

Local, State, and federal agencies regulate special-status species and other sensitive biological resources and require an assessment of their presence or potential for presence to be on-site prior to the approval of proposed development on a property. This section discusses sensitive biological resources observed within the BSA and evaluates the potential for the BSA to support additional sensitive biological resources. Assessments for the potential occurrence of special-status species were based upon known ranges, habitat preferences of the species, species occurrence records from the CNDDB and CNPS, species occurrence records from other sites in the vicinity of BSA, previous reports for the project site, and the results of surveys conducted on the BSA.

5.1 - Special-Status Species

Table 5-1 presents the list of special-status plant and animal species determined to have potential to occur on-the BSA and identifies if the Project may affect the species and threaten the viability of the species population. The complete list of species collected from literature and database searches evaluated for this Project are included in Appendix D. From this search, it was determined that five species have potential to occur on the BSA. Each of these five species are further discussed in the subsections below.

Table 5-1
Special-Status Species with Potential to Occur On-Site

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Potentially Affected by Project? Yes/No	Viability Threat? Yes/No
Birds			
Agelaius tricolor tricolored blackbird	-/ST -/-	Yes	No
Athene cunicularia burrowing owl	-/- SSC	Yes	No
Buteo Swainsoni Swainson's hawk	-/ST -/-	Yes	No
Mammals			
Taxidea taxus American badger	-/- SSC	Yes	No
Vulpes macrotis mutica San Joaquin kit fox	FE/ST -/-	Yes	No

FE Federally Endangered
ST State Threatened
SSC State Species of Special Concern

5.1.1 - SPECIAL-STATUS PLANT SPECIES

The literature and database review identified eight (8) special-status plant species known or with potential to occur in the vicinity of the Project (Appendix D). None of these species occur on-site due to the lack of suitable habitat conditions or because the BSA is located outside of the species' known range.

5.1.2 - SPECIAL-STATUS ANIMAL SPECIES

The literature review identified 23 special-status animal species known or with potential to occur in the vicinity of the Project (Appendix D). Of those, five (5) were determined to have a potential to occur on-site:

- **Tricolored blackbird** (*Agelaius tricolor*) – State Threatened
- **Burrowing owl** (*Athene cunicularia*) – CDFW Species of Special Concern
- **Swainson's hawk** (*Buteo swainsoni*) – State Endangered
- **American badger** (*Taxidea taxus*) – CDFW Species of Special Concern
- **San Joaquin kit fox** (*Vulpes macrotis mutica*) – Federally Endangered, State Threatened

Tricolored blackbird

AGELAIUS TRICOLOR

Status: State Threatened

The tricolored blackbird is native to California and can occur locally in Oregon, Washington, Nevada and coastal Baja California (Shuford and Gardali 2008). The tricolored blackbird is a colonial breeder that prefers freshwater, with tall, dense cattails or tules. Recently, a higher percentage of tricolored blackbirds have been documented nesting in triticale fields (Beddy et al. 2017). This species forages in pastures, grain fields, and similar habitats near breeding areas.

Two areas within the Project site contained cropland habitat that could provide forging and potential nesting habitat for this species. The larger BSA also contains and is surrounded by croplands. The nearest CNDDB occurrence is from 2000, approximately 4.5 miles southeast of the BSA and is presumed extant (EONDX 98888). No tri-colored blackbird or nests were observed during the survey.

Western Burrowing Owl

ATHENE CUNICULARIA HYPUGAEA

Status: CDFW Species of Special Concern

The western burrowing owl is a small ground-dwelling owl that can be found throughout western North America (Klute et al. 2003). Typically, this species can be found in a variety of habitat types including grasslands, deserts, or other open habitats where food resources are available and contain treeless areas with low vegetation cover and gently sloping terrain (Rodewald 2015).

Burrowing owls utilize earthen burrows, typically relying on other fossorial mammals to construct their burrows such as prairie dog (*Cynomys* ssp.) or American badger (USFWS 1998). In California, they are most often associated with California ground squirrels (Winchell 1994). They use a burrow throughout the year for temperature regulation, offspring rearing, shelter, and escape from predators. While burrows are most often earthen, they have been documented using atypical burrows such as pipes, culvers, and other man-made structures as burrows, most often as shelter (Shuford and Gardali 2008). Burrowing owls can have several burrows close to one other that they may use frequently to avoid predators.

The nearest recorded CNDDB occurrence (EONDX 73157) is approximately 7.3 miles southeast of the BSA (CDFW 2020a) where 16 adults were observed at a burrow site in 2000. That occurrence is presumed extant.

Based on site conditions during the reconnaissance survey, suitable nesting habitat does not exist within the BSA, although, the agricultural fields could provide potential foraging habitat. The BSA is highly developed and constantly subjected to disturbance. No burrowing owls or diagnostic signs of burrowing owls were observed during the reconnaissance survey but there is some potential for burrowing owls to be present from time to time as transient foragers.

Swainson's Hawk

BUTEO SWAINSONI

Status: State Threatened

Swainson's hawks occur in grassland, desert, and agricultural landscapes throughout the Central Valley and Antelope Valley (Bechard, et al. 2010, Zeiner et al. 1990). Some hawks may be residents, especially in the southern portion of their range, while others may migrate between winter and breeding habitats. They prefer larger isolated trees or small woodlots for nesting, usually with grassland or dry-land grain fields nearby for foraging. They have been known to nest in large eucalyptus trees along heavily traveled freeway corridors. Swainson's hawks forage in grassland, open scrub, pasture, and dry-land grain agricultural habitats, primarily for rodents. Swainson's hawks exhibit a moderate to high nest site fidelity at successful nest sites.

The nearest CNDDB occurrence (EONDX 104507) was recorded in 2016 approximately 1.9 miles south of the BSA (CDFW 2020a). The occurrence documented one adult nesting in a Eucalyptus tree. Based on site conditions during the reconnaissance survey, there is potential for Swainson's hawks to forage within the BSA and in the surrounding agricultural lands. Suitable nesting trees occur on the southeast corner of the BSA, on a lot currently occupied by a food market and adjacent to the intersection of Jackson Ave and SR 43. The high level of vehicle and foot traffic in the BSA would decrease the likelihood of Swainson's hawk nesting activity on the Project site. There were no nests or nest sites observed in the BSA during the survey.

American Badger

TAXIDEA TAXUS

Status: CDFW Species of Special Concern

The American badger is an uncommon permanent resident at lower elevations throughout California except for the northern North Coast (CDFG 1995). They can typically be found in grasslands, deserts, and drier habitats. Badgers are typically nocturnal and hunt or forage at night while spending daylight hours below ground. Normally, they have a single den entrance that is approximately eight to 12 inches in width, in an elliptical or half-moon shape, similar to their body shape. Dens are usually found in friable soils, which are easier to dig in. American badgers spend most of their time near a den; however, they may have multiple dens in an area that can be used at the same time. American badgers are known to be able to dig a new den each night. During cooler nights the entrance to the den may be partially plugged with soil to help regulate temperatures.

American badgers primarily feed on small mammals that they capture from digging out the prey's burrows. Such prey may include pocket gophers, mice, chipmunks, and ground squirrels (CDFG 1995). Other prey may include birds, bird eggs, reptiles, invertebrates, and carrion.

There is no CNDDB recorded occurrence of the American badger within nine quads of the Project site. There was no sign of the species observed during the survey, however, it is a highly mobile species and may by present on the Project site as a transient.

San Joaquin Kit Fox

VULPES MACROTIS MUTICA

Status: Federally Endangered and State Threatened

San Joaquin kit foxes are a subspecies of kit fox that is endemic to the Central Valley of California (USFWS 1998, USFWS 2010). They are found primarily in the San Joaquin Valley, Carrizo Plain, and Cuyama Valley, as well as other small valleys in the western foothills of the Central Valley. They are only found west of the Sierra Nevada crest. They occupy arid to semi-arid grasslands, open shrublands, savannahs, and grazed lands with loose-textured soils. San Joaquin kit foxes are well-established in some urban areas and are highly adaptable to human-altered landscapes. They generally avoid intensively maintained agricultural land. San Joaquin kit foxes uses subterranean dens year-round for shelter and pup-rearing. They are nocturnally active but may be above ground near their dens during the day, particularly in the spring. They feed primarily on small mammals, but will consume a variety of prey, and will scavenge for human food.

The nearest CNDDB occurrence (EONDX 67952) was recorded in 1975 approximately 1.8 miles southwest of the BSA (CDFW 2020a). Based on site conditions during the reconnaissance survey, the BSA and surrounding land are highly developed and provide minimal denning and foraging habitat. No San Joaquin kit fox or diagnostic signs of kit fox were observed in the BSA during the survey. However, San Joaquin kit foxes are historically known to occur in the area and may pass through the BSA as transients from time to time.

5.1.3 - OTHER PROTECTED SPECIES

Nesting Birds

Habitat within the BSA supports nesting native bird species, which are protected by the federal Migratory Bird Treaty Act (MBTA) and the California Fish and Wildlife Code. The reconnaissance survey was conducted at the beginning of the nesting bird season (February 1 to September 15), and although no nests were observed, several bird species were seen on or in the vicinity of the BSA. Various species of migratory birds will construct nests in a variety of habitats and structures, and nests may be found in trees or shrubs, in man-made structures, and directly on the ground. Because the BSA support several types of habitat suitable for nesting birds, it is likely that birds will nest within the BSA.

5.2 - Sensitive Natural Communities

5.2.1 - SENSITIVE PLANT COMMUNITIES

The database and literature review identified one sensitive plant community within 10-miles of the BSA. Valley Sacaton Grassland (EONDX 8665) is recorded approximately 9.0 miles north of the BSA (CDFW 2020a).

No sensitive plant community occurs within the BSA because all lands in the vicinity have been regularly disturbed since at least the 1990s for agricultural and urban uses.

5.2.2 - CRITICAL HABITATS

There is no critical habitat present within the BSA or in its immediate vicinity. There are designated critical habitats for two special-status species northeast and southeast of the BSA, the closest of which is 9.3 miles away, Vernal pool tadpole shrimp and Vernal pool fairy shrimp (Figure 5-1).

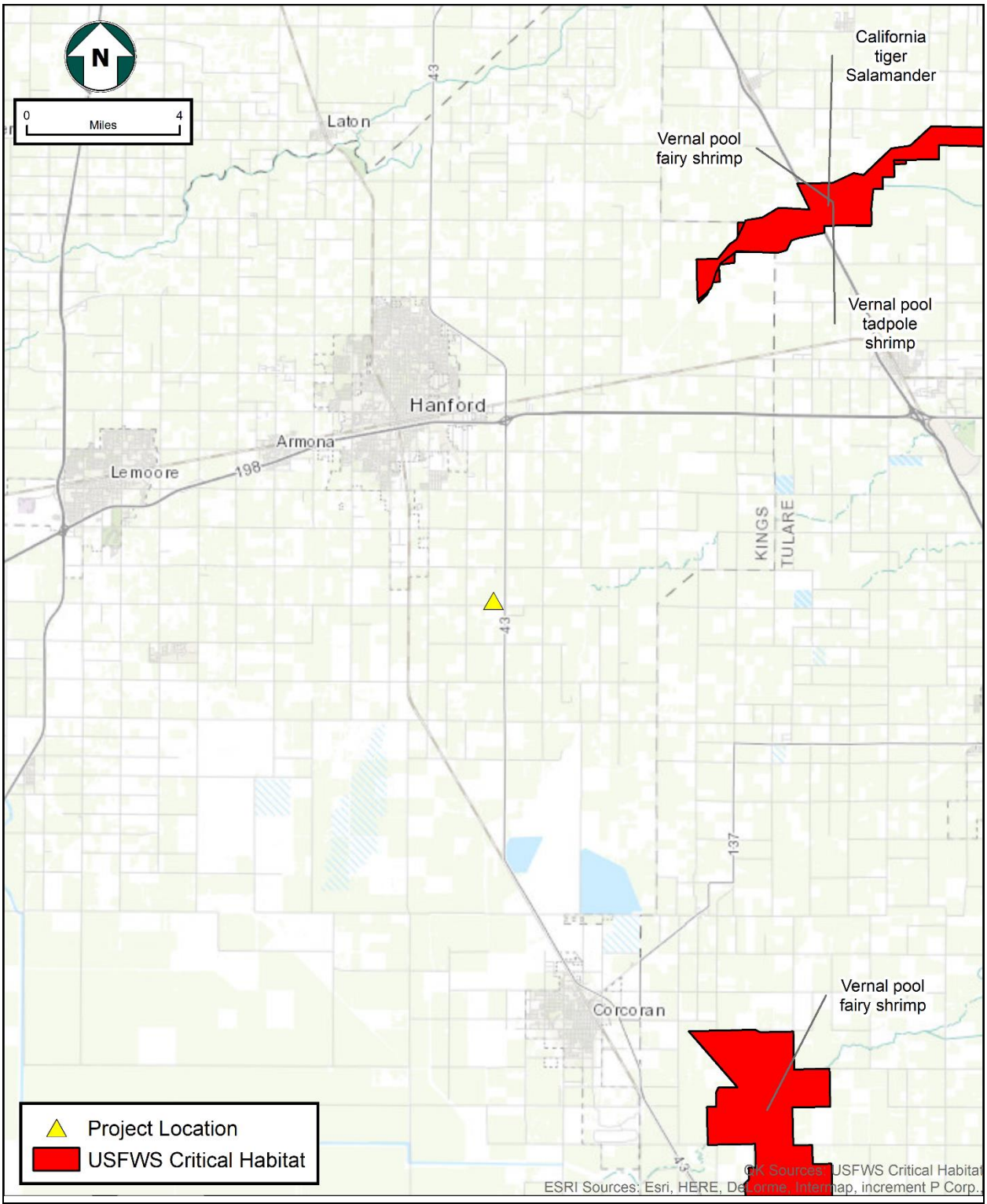

Figure 5-1
Critical Habitat in the Project Vicinity
High Roller Dairy Expansion Project,
Kings County, California

5.3 - Jurisdictional Aquatic Resources

The NHD (see Figure 4-2) indicated one stream feature and three manmade basins within the BSA (USGS 2020a). A fourth manmade basin was present within the BSA during the survey (see Figure 4-2). The stream feature designated as a canal/ditch by the NHD originates at East Branch Peoples Ditch that is a tributary to the Kings River. The Kings River flows north before joining into the San Joaquin River northeast of Mendota in Fresno County. The San Joaquin River is a known traditionally navigable water. The stream feature would be considered a tributary to a traditionally navigable water. Any impacts to the Ordinary High-Water Mark (OHWM) of the stream feature would likely require a Section 404 notification and compensatory mitigation. Impacts to this stream feature are not anticipated by the Project action.

The four manmade basins are not connected to any jurisdictional water and therefore not USACE jurisdictional waters. However, the CDFW and the Regional Water Quality Control Board (RWQCB) have regulatory authority over State aquatic resources that could potentially be impacted by development activities. These basins are used for agricultural purposes and are routinely maintained; therefore, it is not anticipated that the state will claim regulatory authority over them. Project impacts to these four manmade basins is not anticipated.

5.4 - Wildlife Movement

Wildlife movement corridors, also referred to as dispersal corridors or landscape linkages, are generally defined as linear features along which animals can travel from one habitat or resource area to another. Wildlife movement corridors can be large tracts of land that connect regionally important habitats that support wildlife in general, such as stop-over habitat that supports migrating birds or large contiguous natural habitats that support animals with very large home ranges (e.g., coyotes [*Canis latrans*] and mule deer [*Odocoileus hemionus californicus*]). They can also be small scale movement corridors, such as riparian zones, that provide connectivity and cover to support movement at a local scale.

The BSA is not located within any identified wildlife movement corridors and there are no features on-site that would specifically lend themselves to wildlife movement (e.g., riparian corridors, ridgelines). The BSA is surrounded by land used for agricultural purposes, so it does not serve as a connector between valuable wildlife habitat. The nearest regional wildlife movement corridor is approximately 2 miles east of the BSA (Figure 5-2).

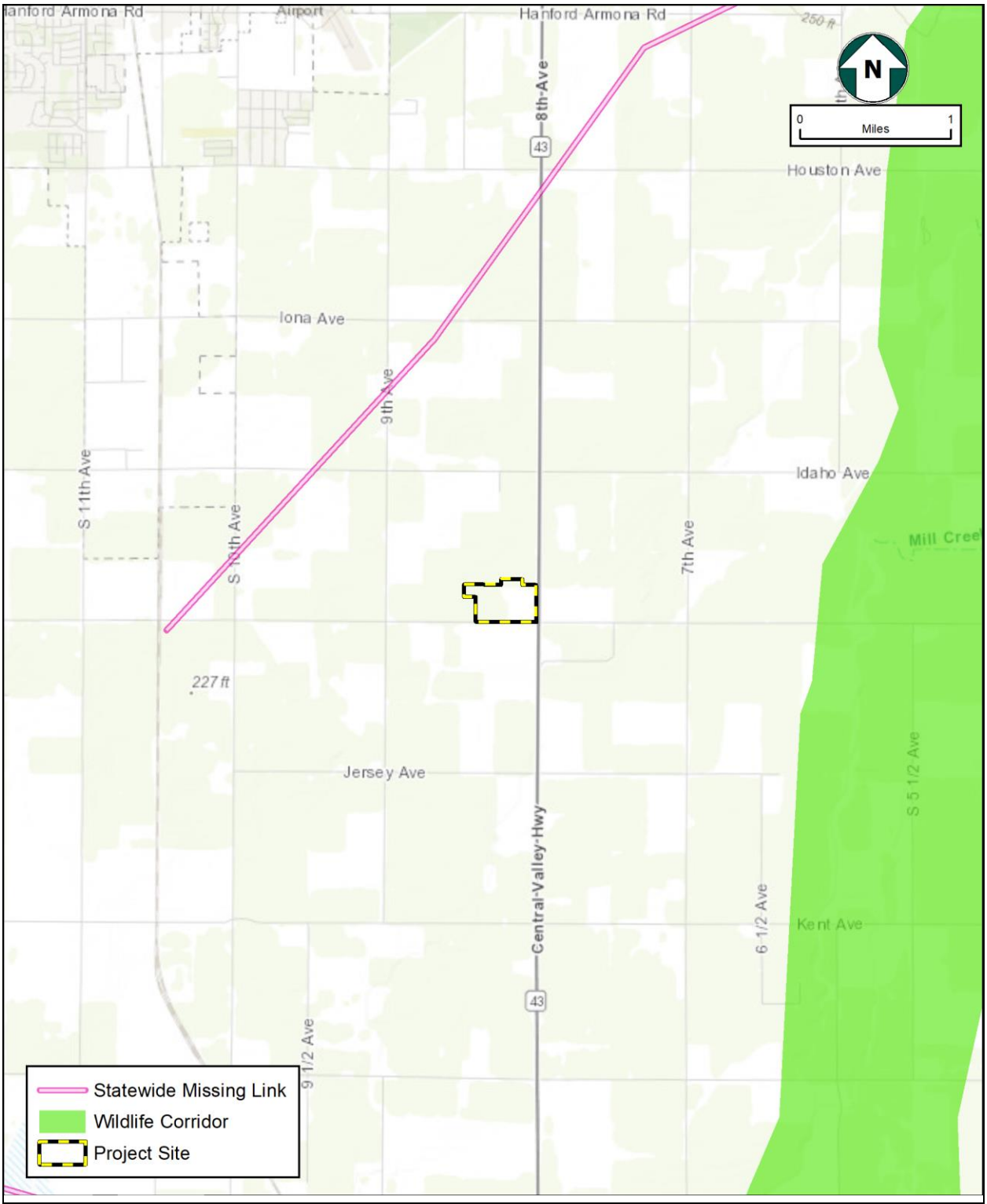

Figure 5-2
Corridor and linkages
High Roller Dairy Expansion Project,
Kings County, California

5.5 - Resources Protected by Local Policies and Ordinances

The Project is within the area covered by the Kings County General Plan, which contains policies aimed at the preservation of biological resources and promotes coordination with federal and State resource agencies (Kings County 2010). Included within the General Plan is Resource Conservation Goal D_1 through D_3 and Goal E_1. The purpose of the policy is to provide for long-term preservation, enhancement, and enjoyment of plant, wildlife, and aquatic habitat. The implementation policies are:

Require that development in or adjacent to important natural plant and animal habitats minimize the disruption of such habitats,
Maintain compatible land uses in natural wetland habitats designated by State and federal agencies,
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, and
Require mitigation measures to protect important plant and wildlife habitats.

The proposed Project does not include and is not adjacent to significant habitat areas or natural areas of high ecological value, nor is it a flood control or drainage Project. As such, habitat mitigation would not be required, and the proposed Project would not conflict with the County's General Plan objective for the protection of special-status species.

5.6 - Habitat Conservation Plans

The Project is located within an area covered by the PG&E San Joaquin Valley Operation and Maintenance Habitat Conservation Plan (HCP). That HCP only applies to maintenance and operations of PG&E facilities and does not apply to this Project.

SECTION 6 - IMPACT ANALYSIS AND RECOMMENDED MITIGATION MEASURES

This section provides an analysis of the potential for special-status biological resources to be impacted by the proposed Project. The analysis was developed using the CEQA Appendix G questions, but also provides sufficient information to support National Environmental Policy Act (NEPA) documentation.

6.1 - Special-Status Species

The proposed project would have a significant effect on biological resources if it would:

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

6.1.1 - PROJECT IMPACTS TO SPECIAL-STATUS PLANT SPECIES

No special-status plant species have potential to occur within the BSA because of existing habitat and soil conditions. No impacts to special-status plant species will occur.

6.1.2 - PROJECT IMPACTS TO SPECIAL-STATUS ANIMAL SPECIES

Five special-status wildlife species have potential to occur within the BSA: tricolored blackbird, western burrowing owl, Swainson's hawk, American badger and San Joaquin kit fox.

Tricolored Blackbird

The irrigated grain crop habitat within the BSA and surrounding area could provide foraging habitat and potential nesting habitat for tricolored blackbird, but there is no evidence that these areas are being used as such. The Project site contains 7.57-acres of irrigated grain crop habitat; however, this habitat does not provide substantial breeding habitat because grains are usually harvested prior to fledging. Construction activities will not take place in areas of cropland that have not been harvested. Additionally, the high level of vehicle and foot traffic within those areas accompanied by the daily activities at the dairy facility may decrease the likelihood of tricolored blackbird nesting or foraging in the BSA. The Project would not significantly impact tricolored blackbirds nor would it result in take of tricolored blackbirds.

Western Burrowing Owl

There is no evidence that the western burrowing owl is present within the BSA. There were only a few potential small mammal burrows present, indicating a low potential for nesting. The agricultural and urban habitat types provide some foraging habitat but there is no evidence that those areas are used for foraging. However, because the species is present in

the region year-round it is possible for a transient burrowing owl to occur on-site at any time. Direct impacts to burrowing owl could occur if there is an active burrow or transient individual within the BSA during the period of construction activities. Construction activities could result in crushing or destroying a burrow with a burrowing owl inside. Noise and vibration from the Project construction activities could alter the daily behaviors of individual owls and effect foraging activities or rearing of young. Implementation of Measures BIO-1 through BIO-4 and BIO-7, listed below, would reduce any impacts to the species to a less than significant level.

Swainson's Hawk

The Project site does not contain suitable nesting habitat for Swainson's hawk and only a small amount of foraging habitat exits. The BSA outside the Project site boundary contains more suitable nesting and foraging habitat. The southeast corner of the BSA outside the Project site boundary contains large eucalyptus trees that can be used for nesting and crop fields that can be used for foraging exist within and around the BSA. There is no evidence that these areas are being used for nesting or foraging. The high level of vehicle and foot traffic within those areas accompanied by the daily activities at the dairy facility may decrease the likelihood of Swainson's hawk nesting activity on the BSA. If nesting Swainson's hawks are present in the vicinity of the Project during construction, then noise and vibration and the presence of construction workers, could alter normal behaviors and possibly lead to nest failure. Implementation of Measures BIO-4 through BIO-7 would reduce any impacts to the species to below significant levels.

American Badger

There is no positive evidence that the American badger is present within the BSA, but potential denning and foraging habitat exists outside the Project site boundary. Because this species is highly mobile, this species may be present on the site as a transient forager. Direct impacts could include injury or death of individuals, entrapment in trenches or pipes, and loss of foraging and denning habitat. Construction activities could result in crushing or destroying a den with a badger inside. Noise, vibration, and the presence of construction workers could alter normal behaviors if badgers are present, which could affect reproductive success. Increased human presence at the new residential homes following Project activities could indirectly impact American badgers by deterring them from denning or foraging in the vicinity of the Project. Implementation of Measures BIO-1 through BIO-3 and BIO-7 would reduce any impacts to the species to below significant levels.

San Joaquin Kit Fox

There is no evidence that the San Joaquin kit fox is present within the BSA. The BSA and surrounding land are highly developed and provide minimal denning and foraging habitat, but the species is known to inhabit the region and is adaptable to urban environments. Because this species is highly mobile, it may be present from time to time on the BSA as a transient forager or part-time resident. Noise, vibration, and the presence of construction workers may alter normal behaviors, which could affect reproductive success.

Implementation of Measures BIO-1 through BIO-3 and BIO-7 would reduce impacts to the species to a less than significant level.

Nesting Birds

The BSA contains suitable habitat for a wide variety of nesting native bird species, including Tricolored blackbirds. There is no evidence that the Tricolor blackbirds are present within the BSA. Within the Project site urban habitat and irrigated grain crop habitat would support birds that nest in trees, shrubs, grasses and herbs and man-made structures. However, irrigated grain crop habitat does not provide substantial breeding habitat because grains are usually harvested prior to fledging. Also, demolition of existing structures is not anticipated. There were no nests observed on the Project site during the survey. If birds were to nest on the Project site, construction-related vibration, noise, and dust production, and human presence could alter the normal behaviors of nesting birds in the vicinity of the Project and lead to nest failure. Implementation of Measures BIO-4 and BIO-7 would reduce impacts to these species to below significant levels.

Avoidance and Minimization Measures

The limited disturbance footprint of this Project, the extent of existing disturbances, and the short duration of activities at any given location, coupled with implementation of the avoidance and minimization measures listed below would reduce impacts of the Project to special-status wildlife species to level that would be less than significant. The following measures are recommended to avoid and minimize impacts to the western burrowing owl, Swainson's hawk, San Joaquin kit fox, and nesting birds.

BIO-1 **Pre-activity Surveys for San Joaquin kit fox dens, American badger dens, and western burrowing owl burrows.** Within 14 days of the start of Project activities, a pre-activity survey should be conducted by a qualified biologist knowledgeable in the identification of these species. The pre-activity survey should include walking transects to identify presence of burrowing owls and their burrows, American badgers and their dens, and San Joaquin kit foxes and their dens. The transects should be spaced at no greater than 30-foot intervals in order to obtain a 100 percent coverage of the Project site and a 250-foot buffer. Areas devoid of habitat incapable of supporting these species would not require surveys. If no evidence of these special-status species is detected, no further action is required.

BIO-2 **Avoidance of Burrowing Owl Burrows and American Badger and San Joaquin Kit Fox Dens**. If dens or burrows that could support these species are discovered during the pre-activity survey conducted under Measure BIO-1, avoidance buffers outlined below should be established. No work should occur within these buffers unless a qualified biologist approves and monitors the activity.

Burrowing Owl (active burrows)

- Non-breeding season: September 1 – January 31 – 160 feet
- Breeding season: February 1 – August 31 – 250 feet

American Badger and San Joaquin Kit Fox
- Potential or Atypical den – 50 feet
- Known den – 100 feet
- Natal or pupping den – Contact agencies for further guidance

Any ESA buffer established should remain in place until the species has left on its own. Once the species has left, the burrow may be monitored using trail cameras or tracking medium such as diatomaceous earth. If no species are detected for a minimum of three consecutive days/nights, the burrow may be hand excavated under the direct supervision of a qualified biologist. All burrow tunnels must be examined to ensure that the tunnel is free of animals before backfilling to ensure no burrowing owls, kit foxes, or other animals are hiding inside.

Alternatively, burrowing owls can be passively excluded from a non-nest burrow through the installation of one-way doors. Prior to engaging in such passive exclusion activities, an Exclusion Plan should be prepared following the guidance outlined in the CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). The Exclusion Plan would need to provide documentation that other burrows exist nearby for the owl to use, or that artificial dens be installed. The Exclusion Plan should be submitted to the CDFW for review and approval prior to implementation. Once approved, one-way doors may be installed at non-nest burrows. The doors should be monitored for a minimum of three days to ensure burrowing owls have left the burrow. The burrow may then be excavated as described above. If at any time during excavation a burrowing owl is detected within the burrow, excavation activities should immediately cease, and the one-way door reinstalled and monitored until the owl has left the burrow. Hand excavation may then resume. Exclusion efforts should be documented.

BIO-3 **Avoidance and Minimization Measures for San Joaquin Kit Fox, American Badger, and Burrowing Owl.** The following avoidance and minimization measures should be implemented during all phases of the Project to reduce the potential for impact from the Project. They are modified from the *U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance* (USFWS 2011). The standard measures for the protection of the San Joaquin kit fox are provided in full in Appendix E.

a. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all Project areas, except on County roads and State and federal highways.

b. All Project activities should occur during daylight hours, but if work must be conducted at night then a night-time construction speed limit of 10-mph should be established.

c. Off-road traffic outside of designated Project areas should be prohibited.

d. To prevent inadvertent entrapment of kit foxes or other animals during construction of the Project, all excavated, steep-walled holes or trenches more than two feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks should be installed.

e. Before holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the USFWS and the CDFW should be contacted before proceeding with the work.

f. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the USFWS and CDFW should be contacted for guidance.

g. All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes and burrowing owls before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

h. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or Project site.

i. No pets, such as dogs or cats, should be permitted on the Project site.

j. Project-related use of rodenticides and herbicides should be restricted.

k. A representative should be appointed by the Project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative should be identified during the employee education program and their name and telephone number should be provided to the USFWS and CDFW.

l. Upon completion of the Project, all areas subject to temporary ground disturbances (including storage and staging areas, temporary roads, pipeline corridors, etc.) should be recontoured if necessary, and revegetated to promote restoration of the area to pre-Project conditions.

An area subject to "temporary" disturbance means any area that is disturbed during the Project, but after Project completion will not be subject to further disturbance and has the potential to be revegetated.

m. Any Project personnel who are responsible for inadvertently killing or injuring one of these species should immediately report the incident to their representative. This representative should contact the CDFW (and USFWS in the case of San Joaquin kit fox) immediately in the case of a dead, injured or entrapped San Joaquin kit fox, American badger, or western burrowing owl.

n. The Sacramento Fish and Wildlife office and CDFW Region 4 office should be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during Project related activities. The CDFW should be notified in the case of accidental death to an American badger or western burrowing owl. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information.

o. New sightings of San Joaquin kit fox, American badger, or western burrowing owl shall be reported to the CNDDB. A copy of the reporting form and a topographic map clearly marked with the location of where a San Joaquin kit fox was observed should also be provided to the USFWS.

BIO-4 **Pre-activity Surveys for Nesting Birds.** If Project activities must occur during the nesting season (February 1 to September 15), pre-activity nesting bird surveys should be conducted within seven days prior to the start of construction at the construction site plus a 250-foot buffer for Tricolor blackbirds, songbirds and a 500-foot buffer for raptors (other than Swainson's hawk). If no active nests are found, no further action is required. However, existing nests may become active and new nests may be built at any time prior to and throughout the nesting season, including when construction activities are in progress. If active nests are found during the survey or at any time during construction of the Project, an avoidance buffer ranging from 50 feet to 500 feet may be required, with the avoidance buffer from any specific nest being determined by a qualified biologist. The avoidance buffer will remain in place until the biologist has determined that the young are no longer reliant on the adults or the nest. Work may occur within the avoidance buffer under the approval and guidance of the biologist, but full-time monitoring may be required. The biologist should have the ability to stop construction if nesting adults show any sign of distress.

BIO-5 **Pre-activity Surveys for Swainson's Hawk Nests**. If Project activities must occur during the nesting season (February 15 to August 31), pre-activity surveys should be conducted for Swainson's hawk nests in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley*, Swainson's Hawk Technical Advisory

Committee (CDFG 2000). The surveys would be conducted on the Project site plus a 0.5-mile buffer.

If no Swainson's hawk nests are found, no further action is required.

BIO-6 **Swainson's Hawk Nest Avoidance.** If an active Swainson's hawk nest is discovered at any time within 0.5-mile of active construction, a qualified biologist should complete an assessment of the potential for current construction activities to impact the nest. The assessment would consider the type of construction activities, the location of construction relative to the nest, the visibility of construction activities from the nest location, and other existing disturbances in the area that are not related to construction activities of this Project. Based on this assessment, the biologist will determine if construction activities can proceed and the level of nest monitoring required. Construction activities should not occur within 500 feet of an active nest but depending upon conditions at the site this distance may be reduced. Full-time monitoring to evaluate the effects of construction activities on nesting Swainson's hawks may be required. The qualified biologist should have the authority to stop work if it is determined that Project construction is disturbing the nest. These buffers may need to increase depending on the sensitivity of the nesting Swainson's hawk to disturbances and at the discretion of the qualified biologist.

BIO-7 **Worker Environmental Awareness Training.** Prior to the initiation of construction activities, all personnel should attend a Worker Environmental Awareness Training program developed by a qualified biologist. The program should include information on the life histories of special-status species with potential to occur on the Project, their legal status, course of action should these species be encountered on-site, and avoidance and minimization measures to protect these species.

Significance After Mitigation. Implementation of the avoidance, and minimization measures above will reduce impacts to special-status wildlife species to a less than significant level.

6.2 - Sensitive Natural Communities and Critical Habitat

The proposed project would have a significant effect on biological resources if it would:

b) Have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.

The BSA does not overlap critical habitat and there are no sensitive natural communities present. Therefore, the Project would have no impacts to sensitive natural communities and no measures are warranted.

6.3 - Jurisdictional Aquatic Resources

The proposed project would have a significant effect on biological resources if it would:

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

The proposed developments are located on disturbed upland areas and would not affect aquatic features. There are no jurisdictional aquatic resources that would be affected by the Project, and no measures are warranted.

6.4 - Wildlife Movement

The proposed project would have a significant effect on biological resources if it would:

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

The Project is not located within a wildlife movement corridor or linkage and there are no features on-site that specifically lend themselves to wildlife movement. The Project does not serve as a connector between any patches of valuable wildlife habitat. As such, the Project would not have any impacts to wildlife movement and no measures are warranted.

6.5 - Local Policies and Ordinances

The proposed project would have a significant effect on biological resources if it would:

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

The proposed Project does not conflict with the Kings County General Plan. There are no impacts with respect to local policies and ordinances and no measures are warranted.

6.6 - Adopted or Approved Plans

The proposed project would have a significant effect on biological resources if it would:

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

The Project is located within an area covered by the PG&E San Joaquin Valley Operation and Maintenance HCP. This HCP applies only to PG&E's activities and does not apply to this Project.

SECTION 7 - LIMITATIONS, ASSUMPTIONS, AND USE RELIANCE

This Biological Analysis Report has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The findings and opinions conveyed in this report are based on findings derived from site reconnaissance, jurisdictional areas, and specified historical and literature sources. The biological investigation is limited by the scope of work performed. Reconnaissance biological surveys for certain taxa may have been conducted as part of this assessment but were not performed during a particular blooming period, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. In particular, mobile animal species could occupy the site on a transient basis or re-establish populations in the future. No other guarantees or warranties, expressed or implied, are provided.

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APPENDIX A

REGULATORY SETTING

Regulatory Setting

Federal Laws and Regulations

FEDERAL ENDANGERED SPECIES ACT OF 1973 (USC, TITLE 16, SECTIONS 1531 -1543)

The federal Endangered Species Act (FESA) and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. The FESA defines species as threatened or endangered and provides regulatory protection for listed species. The FESA provides a program for the conservation and recovery of threatened and endangered species as well as the protection of designated critical habitat that USFWS determines is required for the survival and recovery of listed species.

Section 9 lists actions that are prohibited under the FESA. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of "harm" includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. "Harass" is defined as actions that create the likelihood of injury to listed species by disrupting normal behavioral patterns related to breeding, feeding, and shelter significantly.

Section 7 of the FESA requires federal agencies, in consultation with and assistance from the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction of adverse modification of critical habitat for these species. The USFWS and National Marine Fisheries Service (NMFS) share responsibilities for administering the FESA. Regulations governing interagency cooperation under Section 7 are found in California Code of Regulations (CCR) Title 50, Part 402. If an activity could result in "take" of a listed species as an incident of an otherwise lawful activity, then a biological opinion can be issued with an incidental take statement that exempts the activity from FESA's take prohibitions.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found at CFR Title 50, Sections 13 and 17 for species under the jurisdiction of USFWS and CFR, Title 50, Sections 217, 220, and 222 for species under the jurisdiction of NMFS. Section 10 would apply to the Project if take of a species (as defined in Section 9) were determined to occur.

Section 4(a)(3) and (b)(2) of the FESA requires the designation of critical habitat to the maximum extent possible and prudent based on the best available scientific data and after considering the economic impacts of any designations. Critical habitat is defined in section 3(5)(A) of the FESA: 1) areas within the geographic range of a species that are occupied by individuals of that species and contain the primary constituent elements (physical and biological features) essential to the conservation of the species, thus warranting special

management consideration or protection; and 2) areas outside of the geographic range of a species at the time of listing but that are considered essential to the conservation of the species.

MIGRATORY BIRD TREATY ACT (USC, TITLE 16, SECTIONS 703 - 711)

The MBTA, first enacted in 1918, is a series of treaties that the United State has with Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird" (U.S. Code Title 16, Section 703). The MBTA currently includes several hundred species and includes all native birds.

BALD AND GOLDEN EAGLE PROTECTION ACT OF 1940 (USC, TITLE 16, SECTION 668)

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 protects bald eagles (*Haliaeetus leucoephalus*) and golden eagle (*Aquila chrysaetos*) by prohibiting the taking, possession, and commerce of these species and established civil penalties for violation of this act. Take of bald and golden eagles includes to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." To disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially inferring with normal breeding, feeding, or sheltering behavior. (Federal Register [FR], volume 72, page 31132; 50 CFR 22.3).

FEDERAL CLEAN WATER ACT (USC, TITLE 33, SECTIONS 1521 - 1376)

The Federal Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires that a Project applicant that is pursuing a federal license or permit allowing a discharge to waters of the U.S. to obtain State Certification of Water Quality, thereby ensuring that the discharge will comply with provisions of the CWA. The Regional Water Quality Control Board (RWQCB) administers the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S. Section 404 establishes a permit program administered by the United States Army Corps of Engineers (USACE) that regulates the discharge of the dredged or fill material into waters of the U.S., including wetlands. The USACA implementing regulations are found in CFR, Title 33, Sections 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the United States Environmental Protection Agency (EPA) in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Applicable State Laws and Regulations

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CALIFORNIA PUBLIC RESOURCES CODE, SECTIONS 21000 - 21178, AND TITLE 14 CCR, SECTION 753, AND CHAPTER 3, SECTIONS *15000 - 15387)*

The California Environmental Quality Act (CEQA) is California's broadest environmental law. CEQA helps guide the issuance of permits and approval of projects. Courts have interpreted CEQA to afford the fullest protection of the environment within the reasonable scope of the statutes. CEQA applies to all discretionary projects proposed to be conducted or approved by a State, County, or City agency, including private projects requiring discretionary government approval.

The purpose of CEQA is to disclose to the public the significant environmental effects of a proposed discretionary project; prevent or minimize damage to the environment through development of project alternatives, mitigation measures, and mitigation monitoring; disclose to the public the agency decision making process to approve discretionary projects; enhance public participation in the environmental review process; and improve interagency coordination.

State CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or State list of protected species nonetheless may be considered rare or endangered for purposed of CEQA if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals.

CALIFORNIA ENDANGERED SPECIES ACT (CALIFORNIA FISH AND GAME CODE SECTION 2050 ET SEQ.)

The California Endangered Species Act (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve Projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For Projects that would result in take of a species listed under the CESA, a project proponent would need to obtain a take permit under Section 2081(b). Alternatively, the CDFW has the option of issuing a Consistency Determination (Section 2080.1) for Projects that would affect a species listed under both the CESA and the FESA, as long as compliance with the FESA would satisfy the "fully mitigate" standard of CESA, and other applicable conditions.

PORTER-COLOGNE WATER QUALITY CONTROL ACT

Under Section 401 of the CWA, the RWQCB must certify that actions receiving authorization under Section 404 of the CWA also meet State water quality standards. The RWQCB regulates waters of the State under the authority of the Porter-Cologne Water Quality Control Act (Porter Cologne Act). The RWQCB requires Projects to avoid impacts to wetlands whenever feasible and requires that Projects do not result in a net loss of wetland acreage or a net loss

of wetland function and values. The RWQCB typically requires compensatory mitigation for impacts to wetlands and/or waters of the State. The RWQCB has jurisdiction over waters deemed 'isolated' or not subject to Section 404 jurisdiction under the Solid Waste Agency of Northern Cook County (SWANCC) decision. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste into waters of the State, and such discharges are authorized through an Order of Waste Discharge (or waiver of discharge) from the RWQCB.

VARIOUS SECTIONS OF THE CALIFORNIA STATE AND FISH AND GAME CODE

Section 460 and Sections 4000-4003

Chapter 5 of the California Fish and Game Code (FGC) describes regulations concerning the take of furbearing mammals, including defining methods of take, seasons of take, bag and possession limits, and areas of the State where take is allowed. Section 4000-4003 defines furbearing mammals, and the issuance of permits by the Department. Sections 460 and 4000 identifies fisher, marten, river otter, desert kit fox and red fox as furbearing mammals, and Section 460 prohibits take of these species at any time. This section of the California Fish and Game Code (FGC) has historically been interpreted to apply to restriction on furbearer trapping permit but has recently been expanded by CDFW to apply to any forms of take and treated as if these species were listed under CESA.

Sections 1600 through 1616

Under these sections of the FGC, a Project operator is required to notify CDFW prior to any Project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the California Code of Regulations, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports of has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events. Preliminary notification and Project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFW is required to propose reasonable Project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement.

Sections 3511, 4700, 5050, and 5515

The protection of fully protected species are described in Sections 3511, 4700, 5050, and 5515 of the FGC. These statues prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species, except as allowed for in an approved Natural Communities Conservation Plan (NCCP), or through direct legislative action.

Sections 1900 through 1913 - Native Plant Protection Act

California's Native Plant Protection Act (NPPA) requires all State agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provision of the NPPA prohibit that taking of listed plants from the wild and require notification of CDFW at least ten days in advance of any change in land use. This allows CDFW to salvage listed plant species that otherwise would be destroyed. A Project proponent is required to conduct botanical inventories and consult with CDFW during Project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

Local and Regional Laws, Regulations, and Policies

KINGS COUNTY GENERAL PLAN

Kings County Resource Conservation Element includes goals, policies, and implementation programs for preservation of natural resources including riparian areas, fish and wildlife habitat, and vegetation.

Table A-1
Resource Conservation element
Kings County General Plan

Goal	
Goal D_1:	Preserve land that contains important natural plant and animal habitats.
Goal D_2:	Maintain the quality of existing natural wetland areas as required by the California Department of Fish and Game, the United States Fish and Wildlife Service and the United States Army Corp of Engineers.
Goal D_3:	Protect and manage riparian environments as valuable resources.
Goal E_1:	Balance the protection of the County's diverse plant and animal communities with the County's economic needs.
Policies	
Policy $D_{1.1.1}$:	Evaluate all discretionary land use applications in accordance with the screening procedures contained in the Biological Resources Survey located in Appendix C. If the results of the project screening indicates the potential for important biological resources to exist on the site a biological evaluation (consistent with Appendix C) shall be performed by a qualified biologist. If the evaluation indicates that the project could have a significant adverse impact, mitigation shall be required or the project will be redesigned to avoid such impacts. Mitigation shall be provided consistent with the California

	Environmental Quality Act (CEQA), and applicable state and federal guidelines as appropriate. Mitigation may include habitat improvement or protection, acquisition of other habitat, or payment to an appropriate agency to purchase, improve, or protect such habitat.
Policy $D_{1.1.2}$:	Require project applicants to consult with the California Department of Fish and Game and the United States Fish and Wildlife Service and to obtain appropriate authority for any such take pursuant to Endangered Species Act requirements if new development or other actions are likely to result in incidental take of any threatened or endangered species.
Policy $D_{2.1.1}$:	Follow state and federal guidelines for the protection of natural wetlands. Require developers to obtain authorization from the appropriate local, state, or federal agency prior to commencement of any wetland fill activities.
Policy $D_{2.1.2}$	Use the California Environmental Quality Act (CEQA) process to assess wetland resources, and require mitigation measures for development which could adversely impact a designated wetland.
Policy $D_{2.1.3}$	"Prior Converted Croplands" as defined by state and federal regulations shall be exempt from consideration as wetlands under the County planning process.
Policy $D_{3.1.1}$	Designate the Kings River as a resource conservation area, implemented by use of the Natural Resource Conservation overlay zone district.
Policy $D_{3.1.2}$	Encourage the Kings River Conservation District to avoid substantial alteration of the Kings River channel and its riparian vegetation, consistent with their flood control responsibilities.
Policy $D_{3.1.3}$	Evaluate the potential impact on the riparian environment of proposed development adjacent to the Kings River, beyond the boundaries of the designated floodway. Conservation of fish and wildlife habitat and protection of scenic qualities should be the guiding principle.
Policy $D_{3.1.4}$	Prohibit development within riparian environments over which the County has jurisdiction. However, allow or consider for approval if it is determined that significant disturbance of the riparian environment would not occur, the following passive uses or activities: • Streamside maintenance and repair for mandated flood control or water delivery purposes, facilities, and equipment; • Road and utility line crossings; • Grazing and similar agricultural production activities not involving structures or cultivation;

	• Vegetation removal for integrated pest management programs under guidelines; • Passive recreational uses such as riverside parks and bikeways.
Policy $D_{3.1.5}$	Refer all discretionary permit applications for projects along the Kings River and Cross Creek to the appropriate local, state, and federal agencies for review and approval.
Policy $D_{3.1.6}$	Evaluate Fish and Game approved conservation plans and wildlife corridor studies prepared by government or private non-profit biological resource entities that analyze Kings County's wildlife and riparian habitat, and where feasible, accommodate implementation of wildlife corridor plans.
Policy $E_{1.1.1}$	Complete the inquiry process outlined in Appendix C in the initial project review for development permits to determine whether the project is likely to have a significant adverse impact on any threatened or endangered species habitat locations, and to assure appropriate consideration of habitat preservation by development. Maintain current copies of California Department of Fish and Game and United States Fish and Wildlife Service maps showing locations of known threatened and endangered species habitat. If shown to be necessary, require the developer to consult with the California Department of Fish and Game, the United States Fish and Wildlife Service, and the United States Army Corps of Engineers as to potential impacts, appropriate mitigation measures, and required permits.
Policy $E_{1.1.2}$	Require as a primary objective in the review of development projects the preservation of healthy native oaks and other healthy native trees.
Policy $E_{1.1.3}$	Maintain to the maximum extent practical the natural plant communities utilized as habitat by threatened and endangered species (see Appendix C for a listing and map of these plant communities).

Source: (Kings County, 2010)

APPENDIX B

REPRESENTATIVE PHOTOGRAPHS

Photograph 1: Overview of proposed open lot corrals from southeast corner, facing west.
GPS coordinates: 36.258281°N. -119.602779°W
Photograph taken by Eric Madueno on March 12, 2020.

Photograph 2: Overview of proposed open lot corrals from northwest corner, facing east.
GPS coordinates: 36.258570°N. -119.605197°W
Photograph taken by Eric Madueno on March 12, 2020.

Photograph 3: Overview of proposed free stall barn, facing west.
GPS coordinates: 36.257676°N. -119.602750°W
Photograph taken by Eric Madueno on March 12, 2020.

Photograph 4: Overview of proposed haybarns, facing south.
GPS coordinates: 36.256787°N. -119.603390°W
Photograph taken by Eric Madueno on March 12, 2020.

Photograph 5: Overview of proposed reception pit with rotating pumps, facing southwest.
GPS coordinates: 36.255689°N. -119.602823°W
Photograph taken by Eric Madueno on March 12, 2020.

Photograph 6: Overview of proposed digester, facing southwest.
GPS coordinates: 36.258526°N. -119.608170°W
Photograph taken by Eric Madueno on March 12, 2020.

Photograph 7: Overview of proposed digester, digester flush box and biogas mechanical pad, facing south.
GPS coordinates: 36.258281°N. -119.602779°W.
Photograph taken by Eric Madueno on March 12, 2020.

Photograph 8: Overview of proposed 300ft sandlane, facing south.
GPS coordinates: 36.257405°N. -119.608146°W
Photograph taken by Eric Madueno on March 12, 2020.

Photograph 9: Overview of proposed 300 ft sandlane and digester, facing north.
GPS coordinates: 36.257405°N. -119.608146°W
Photograph taken by Eric Madueno on March 12, 2020.

Photograph 10: Overview of proposed dual screen pedestal and stacking slab, facing northwest.
GPS coordinates: 36.255071°N. -119.607188°W
Photograph taken by Eric Madueno on March 12, 2020.

APPENDIX C

PLANT AND ANIMAL SPECIES OBSERVED WITHIN THE BIOLOGICAL STUDY AREA

Table C-1
Plant Species Observed within the Biological Study Area on March 12, 2020
High Roller Expansion Project, Kings County, California

Scientific Name	Common Name	Status	Native or Introduced
Trees			
Cupressus sp.	cypress	None	Introduced
Cycas revoluta	sago palm	None	Introduced
Eucalyptus sp.	eucalyptus	None	Introduced
Populus fremontii	cottonwood	None	Native
Prunus dulcis	almond	None	Introduced
Washingtonia robusta	Mexican fan palm	None	Introduced; Cal-IPC Moderate
Herbs			
Amsinckia intermedia	Common fiddleneck	None	Introduced
Capsella bursa-pastoris	Shepherd's purse	None	Introduced
Malva neglecta	dwarf mallow	None	Introduced
Schismus arabicus	Arabian schismus	None	Introduced
Sisymbrium irio	London rocket	None	introduced
Grasses			
Triticum aestivum	common wheat	None	introduced

*Cal-IPC = California Invasive Plant Council.
Rating system: **High** = several ecological impacts; **Moderate** = substantial but not severe ecological impacts; **Limited** = minor ecological impacts or not enough information to justify higher score; **Alert** = species ranked as High or Moderate with limited distribution, but potential to spread; **Watch** = could pose a high risk of becoming invasive in the future.

Table C-2
Animal Species Observed within the Biological Study Area on March 12, 2020
High Roller Expansion Project, Kings County, California

Scientific Name	Common Name	Status	Native or Introduced
Birds			
Agelaius phoeniceus	red-winged blackbird	None	Native
Anas platyrhynchos	mallard	None	Introduced
Circus hudsonius	northern harrier	None	Native
Corvus corax	common raven	None	Native
Passer domesticus	house sparrow	None	Introduced
Sturnus vulgaris	common starling	None	Introduced
Zenaida macroura	mourning dove	None	Native
Mammals			
Bos taurus	cow	None	Introduced

APPENDIX D

SPECIAL-STATUS SPECIES DATABASE SEARCH RESULTS

Table D-1
Special-Status Species in the Regional Vicinity of the Project Site
High Roller Dairy Expansion Project, Kings County, California

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Sensitive Plant Communities				
Northern Claypan Vernal Pool	-/- -/S1.1	This community consists of a low, herbaceous community dominated by annual herbs and grasses. Germination and growth begin with winter rains, often continuing even when inundated. Rising spring temperatures evaporate the pools, leaving concentric bands of vegetation. Claypan vernal pools are typically small and contain less cover than northern hardpan vernal pools.	No	Suitable habitat absent from the Project site. Nearest CNDDB occurrence is from 1983 and approximately 12.0 miles northeast of the Project (EONDX 26434).
Valley Sacaton Grassland	-/- -/S1.1	This community is dominated by alkali sacaton, a tuft formed grass. It is found in areas with fine textured, poorly drained and usually alkaline soils with high water tables, or that are flooded during winter months.	No	Suitable habitat absent from the Project site. Nearest CNDDB occurrence is from 1985 and approximately 9.0 miles northeast of the Project (EONDX 8665).
Plants				
Atriplex cordulata var. *cordulata* heartscale	-/- 1B.2/-	Found in alkali grasslands on saline and alkaline soils in and around scald areas. Found in chenopod scrub and valley and foothill grassland habitats.	No	Suitable habitat absent from the Project site. Nearest CNDDB occurrence is from 1938 and approximately 11.0 miles northeast of the Project and is presumed extant (EONDX 3244).
Atriplex cordulata var. *erecticaulis Earlimart orache*	-/- 1B.2/-	Annual herb that occurs in saline or alkaline soils at elevations under 100 meters (m). Blooms between August and September.	No	Suitable habitat absent from the Project site. Nearest CNDDB occurrence is from 2002 and approximately 3.8 miles southeast of the Project and is presumed extant (EONDX 47219).
Atriplex depressa brittlescale	-/- 1B.2/-	Annual herb found on alkali soils that typically occur in barren areas within alkali grassland, alkali meadow, and alkali scrub habitat. It is occasionally found on margins of alkali vernal pools.	No	Suitable habitat absent from the Project site. Nearest CNDDB occurrence is approximately 12.2 miles northwest of the Project and is presumed extant (EONDX 7077).

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Atriplex minuscula lesser saltscale	-/- 1B.1/-	Annual plant; occurs in chenopod scrub, grasslands, and alkali sink habitats, but is also known to occur in wet areas. Blooms from April to October. Occurs at elevations under 330 feet.	No	Suitable habitat absent from the Project site. Nearest CNDDB occurrence is approximately 7.8 miles south of the Project and is presumed extant (EONDX 112600).
Atriplex subtilis subtle orache	-/- 1B.1/-	Annual herb; blooms June – October; occurs in chenopod scrub, grassland, and alkali sink habitats, sometimes wet areas, at elevations under 70 m.	No	Suitable habitat absent from the Project site. Nearest CNDDB occurrence is approximately 3.9 miles southeast of the Project and is presumed extant (EONDX 41361).
Delphinium recurvatum recurved larkspur	-/- 1B.1/-	Perennial herb; commonly found in chenopod scrub, valley and foothill grassland and cismontane woodland; most common on sandy or clay alkaline soils, at elevations between 30 and 600 m; blooms March – June.	No	Suitable habitat absent from the Project site. Nearest CNDDB occurrence is approximately 2.6 miles southwest of the Project and is presumed extant (EONDX 51929).
Nama stenocarpa mud nama	-/- 2B.2/-	Annual/perennial herb; commonly found along freshwater lake margins, riverbanks, marshes and swamps. Occurs at elevations between 5 and 500 m; blooms January – July.	No	Suitable habitat absent from the Project site. Nearest CNDDB occurrence is approximately 4.6 miles southwest of the Project and is presumed extant (EONDX 81338).
Puccinellia simplex California alkali grass	-/- 1B.2/-	Annual herb found on alkaline soils, vernally mesic habitats, sinks, flats, and lake margins. Typically associated with chenopod scrub, meadows and seeps, valley and foothill grasslands, and vernal pools, at elevations under 3,050 feet. Blooms between March and May.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is approximately 4.2 miles north of the Project and is presumed extant (EONDX 100164).
Invertebrates				
Branchinecta conservation conservancy fairy shrimp	FE/- -/-	This crustacean in endemic to the grasslands of the northern Central Valley and is found in seasonal large, turbid pools, often located in swales formed by old, braided alluvium. Pools are typically located in valley and foothill grasslands.	No	Habitat to support this species is absent from the Project site. There are no recorded occurrences for the species within 10 miles of the Project.
Branchinecta lynchi vernal pool fairy shrimp	FT/- -/-	Occur a variety of vernal pool habitats that range from small, clear pools to large, turbid and alkaline pools; more common in pools less than 0.05 acre, typically as part of larger vernal pool complexes; adults active from early December to early May; pools must hold water for at least 18 days, the	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is approximately 7.4 miles southeast of the Project and presumed extant (EONDX 43430).

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		minimum to complete the life cycle if temperatures are optimal; eggs laid in spring and persist through dry season as cysts; current California distribution includes the Central Valley and coast ranges; threatened by habitat loss, degradation, and fragmentation, and interference with vernal pool hydrology.		
Cicindela tranquebarcia ssp. San Joaquin tiger beetle	-/- -/-	This species commonly inhabits alkali sinks, flats, and playas. Can be found on sandy floodplains along rivers or streams. Known only from Tulare and Kings county.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is approximately 6.6 miles southwest of the project and presumed extant (EONDX 61672).
Lepidurus Packardi vernal pool tadpole shrimp	FE/- -/-	This species inhabits seasonal vernal pools and swales in the Sacramento Valley. Pools are often found in grass-bottomed swales of unplowed grasslands, and pools will be used even if highly turbid. May also be found in roadside ditches and ruts.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is approximately 10.0 miles northeast of the project and presumed extant (EONDX 41568).
Fish				
Hypomesus transpacificus delta smelt	FT/SE -/-	Small fish endemic to the San Francisco Estuary and the larger Sacramento-San Joaquin Delta; moves between freshwater and low salinity water throughout year; most spawning happens in tidally influenced backwater sloughs and channel edgewaters; historical distribution did not extend beyond Mossdale on the San Joaquin River and Sacramento on the Sacramento River.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Amphibians				
Ambystoma californiense California tiger salamander	FT/ST -/WL	Occurs in ephemeral pools or ponds that mimic them, and that remain inundated for 12 weeks or more; can occupy artificial ponds (ranch stock ponds) if ponds are allowed to go dry in the summer; requires nearby upland habitat containing small mammal burrows or crevices that provide refugia; restricted to grasslands and low foothills; lives underground most of the year.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 1990 and approximately 9.8 miles northeast of the Project and presumed extant (EONDX 44980).

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Rana draytonii California red-legged frog	FT/- -/SSC	Occurs primarily in and near ponds in forests, woodlands, grasslands, coastal scrub, and stream sides with plant cover; mostly in lower elevations; breeding habitat may be permanent or ephemeral; estivates in animal burrows or other moist refuges when ephemeral habitat is dry; endemic to California and northern Baja California; found throughout coastal California from Mendocino County south; inland distribution includes northern Sacramento Valley and foothills of Sierra Nevada south to Tulare County (possibly Kern County); elevation from sea level to 5,000 feet.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Spea hammondii western spadefoot	-/- -/SSC	Species relies on vernal pools for breeding where predators cannot become established; open areas with sand or gravelly soils in a variety of habitats: grasslands, coastal scrub, woodlands, chaparral, sandy washes, lowland river floodplains, alkali flats, foothills, and mountains; endemic to California and northern Baja California; distribution from Redding south throughout Central Valley and foothills, throughout South Coast Ranges into coastal southern California to Transverse mountains and Peninsular mountains; elevation from sea level to 4,500 feet.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 2017 approximately 9.9 miles northeast of the Project and is presumed extant (EONDX 44979).
Reptiles				
Gambelia silus [=sila] blunt-nosed leopard lizard	FE/SE -/FP	Occurs in semiarid habitats within the southern Central Valley and Cuyama Valley; habitats typically are flat and have large open areas with scattered shrubs for refuge; uses small mammal burrows for shelter; spends most of year underground, surfacing in spring/early summer to breed and eat; hatchlings surface in fall to eat; may interbreed with long-nosed leopard lizard in Cuyama Valley; threatened by habitat loss/fragmentation and drought; elevation from 100-2,400 feet.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 1990 approximately 6.5 miles southwest of the Project and is presumed extant (EONDX 34953).

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Emys marmorata western pond turtle	-/- -/SSC	Highly aquatic and diurnally active; found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with vegetation and rocky/muddy bottoms; wide variety of habitats; need basking areas near water (logs, rocks, vegetation mats, banks); may enter brackish water and even seawater; digs nest on land near water; range from north of San Francisco Bay area south, including Central Valley.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is approximately 4.0 miles southwest of the Project and is presumed extant (EONDX 3611926).
Thamnophis gigas giant gartersnake	FT/ST -/-	Highly aquatic snake found in marshes and sloughs, drainage canals, and irrigation ditches; prefers vegetation close to water for basking; does not venture more than 200 feet from aquatic habitat; elevation from sea level to 400 feet; endemic to California; currently ranges from Glenn County to southern edge of San Francisco Bay Delta, and from Merced County to northern Fresno County.	No	Habitat to support this species is absent from the Project site. There are no recorded occurrences for the species within 10 miles of the Project.
Birds				
Aechmoophorus clark clark's grebe	-/- -/MBTA	A migratory and piscivorous aquatic bird that can be found mostly on saltwater bays during the winter. During the breeding season, they prefer freshwater wetlands with a mix of open water and emergent vegetation. Breeds from early January to late December; forages farther from shore and in deeper waters.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Agelaius tricolor tricolored blackbird	-/ST BCC/SSC	Colonial breeder that prefers freshwater, emergent wetlands with tall, dense cattails or tules, but also thickets of willow, blackberry, wild rose, and tall herbs; breeding colonies are minimum ~50 pairs; forages in pastures, grain fields, and similar habitats near breeding areas.	Yes	There is potential foraging habitat within the Project site. Nearest CNDDB occurrence is from 2014 approximately 4.5 miles southeast of the Project and is presumed extant (EONDX 98888).
Athene cunicularia burrowing owl	-/- -/SSC	Occupies variety of open, semi-arid to arid habitats throughout central and southern California, including desert regions; prefers open habitats with few shrubs or trees; most active around sunrise and	Yes	The species could be a potential transient forager in the vicinity of the Project site. Nearest CNDDB occurrence is approximately

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		sunset; utilizes burrows constructed by mammals year-round for shelter and nesting; well documented in urban areas where patches of undeveloped areas are present (e.g., canals, airports, drainage basins), and in areas of dense agricultural development where, particularly where canals provide burrow habitat; forages primarily for rodents and insects within several miles of burrow, usually in open grassy habitats if available; has been observed hunting bats and insects around parking lot lights; threats include development resulting in habitat loss/fragmentation.		7.3 miles southeast of the Project and is presumed extant (EONDX 73157).
Buteo swainsoni Swainson's hawk	-/ST -/-	Occurs in grassland, desert and agricultural landscapes in the Central Valley and Antelope Valley; hawks may be resident or migrant; breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannah; also observed breeding in large eucalyptus trees along freeways and in trees over rural residences surrounded by agriculture; may nest on ground if no suitable trees are available; nests are platform of sticks, bark, and fresh leaves at or near top of trees; breeds from late March to late August; forages in grassland, open scrub, and grain fields, primarily for rodents.	Yes	There is suitable foraging habitat, and suitable nest trees exist in the vicinity. Nearest CNDDB occurrence is approximately 1.9 miles south of the Project and presumed extant (EONDX 104507).
Limosa fedoa Marbled godwit	-/- -/BCC	Large shorebirds that nest in native prairie habitats; wet meadows and grassy areas near water. During their migration period and winter, they are coastal, foraging on mudflats, salt marshes, estuaries, and coastal pools.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Numenius americanus Long-billed curlew	-/- -/BCC	Large shorebird that traditionally breed in dry grasslands and shrub savannahs. During their migration period and winter, they can be found on coastal mudflats and marshes, and less commonly in fields and grasslands.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Mammals				

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
Dipodomys nitratoides exilis Fresno kangaroo rat	FE/SE -/-	Occurs on alkali open grassland on bare alkaline clay-based soils; nocturnal species; burrows with tunnels approximately 12 to 15 inches below ground; threatened by predation and disease; historically occurred on the valley floor in Kings, Fresno, Madera, and Merced counties, but may be extirpated.	No	Habitat to support this species is absent from the Project site. There are no recorded CNDDB occurrences for the species within 10 miles of the Project.
Dipodomys nitratoides nitratoides Tipton kangaroo rat	FE/SE -/-	Occurs in alkali marshes and on plains. Use saltbrush scrub and sink scrub communities of scattered woody shrubs such as saltbush, iodine bush, and mesquite (Prosopis sp.) that are sparsely scattered over the terrain with scant ground cover of grasses and forbs. They require slightly elevated terrain, with fine–textured, soft friable and alkaline soils where they can build burrows above the winter and spring floods. Dig burrows in elevated soil mounds at bases of shrubs, canal embankments, road berms, or railroad beds. Unable to live on cultivated land.	No	Habitat to support this species is absent from the Project site. Nearest CNDDB occurrence is from 1985 approximately 4.0 miles southeast of the Project and is presumed extant (EONDX 14607).
Eumops perotis californicus western mastiff bat	-/- -/SSC	Occurs in open, semi-arid to arid habitats throughout southeastern San Joaquin Valley and Coast Ranges from Monterey County southward; also in urban areas; feeds on insects captured in flight; roosts in cliff faces, high buildings, trees, and tunnels; nursery roosts most often in tight rock crevices or crevices in buildings; maternity season begins in March with young flying on their own by September.	No	There are no suitable roosting sites within the Project site. Nearest CNDDB occurrence is from 1899 approximately 14.5 miles northeast of the Project and is presumed extant (EONDX 66424).
Lasiurus cinereus hoary bat	-/- -/-	Can be found anywhere in California from sea level to 13,200 feet; winters on coast and in southern California; breeds inland and north of winter range; bear young in woodlands and forests; feeds primarily on moths; roosts in dense foliage of medium-large trees; requires water; prefer open habits or habitat mosaics; maternity season from	No	There are no suitable roosting trees within the Project site. Nearest CNDDB occurrence is from 1991 approximately 4.7 miles northwest of the Project and is presumed extant (EONDX 68794).

Scientific Name Common Name	Status Fed/State ESA CRPR/CDFW	Habitat Requirements	Potential to Occur	Rationale
		mid-May through early July; forages with other bat species; high incidence of rabies.		
Taxidea taxus American badger	-/- -/SSC	Occurs mostly in open, drier stages of shrub, forest, and herbaceous habitats, with friable soils; feeds mostly on fossorial rodents; digs burrows for cover and reproduction; can dig new den each night; litters born mostly in March and April; somewhat tolerant of human activities, but avoids cultivated agricultural habitats.	Yes	There is potential denning and foraging habitat on the Project site. No CNDDB recorded occurrences within 10 miles.
Vulpes macrotis mutica San Joaquin kit fox	FE/ST -/-	Endemic to the Central Valley; found primarily in San Joaquin Valley, Carrizo Plain, Salinas Valley, Cuyama Valley, and other small valleys in western foothills; occurs in arid to semi-arid grasslands, open shrublands, savannahs, and grazed lands with loose-textured soils; highly adaptable and documented in urban developed areas; uses burrows year-round for shelter, escape from predators, and rearing young; will use man-made structures, such as pipes, for denning; feeds primarily on small mammals, but will also consume birds, reptiles, insects, and scavenge for human food; intensively-maintained agricultural areas avoided; threatened by habitat loss and fragmentation, vehicle strikes, and disease; current mange outbreak in urban population in Bakersfield and in nearby natural areas.	Yes	The species could be a potential transient forager in the vicinity of the Project site. Nearest CNDDB occurrence is from 1975 approximately 1.8 miles southwest of the Project (EONDX 67800). Recent CNDDB occurrence is from 2006 approximately 6.7 miles northwest of the Project and is presumed extant (EONDX 69953).

CRPR (California Rare Plant Rank):
- 1A Presumed Extinct in California
- 1B Rare, Threatened, or Endangered in California and elsewhere
- 2A Plants presumed extirpated in California, but more common elsewhere
- 2B Plants Rare, Threatened, or Endangered in California, but more common elsewhere

CRPR Threat Code Extension:
- .1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- .2 Fairly endangered in California (20-80% occurrences threatened)
- .3 Not very endangered in California (<20% of occurrences threatened)

- FE Federally Endangered
- FT Federally Threatened
- FC Federal Candidate Species
- FS Federally Sensitive
- SE State Endangered
- ST State Threatened
- SC State Candidate
- SS State Sensitive
- SSC State Species of Special Concern
- SFP State Fully Protected
- SR State Rare
- WL Watch List

MEMO

Date: June 22, 2020 **Project No.: 200098**

To: Nathan Nisly, Project Manager

From: Jaymie Brauer, Principal Planner

Subject: Energy Technical Memorandum for the High Roller Dairy Project

cc:

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1. Introduction

This Energy Technical Memorandum has been prepared for the High Roller Dairy Project, located at 14782 8th Avenue, Hanford, CA 93230 (Project), in compliance with the California Environmental Quality Act (CEQA) Statute and Guidelines, as required under CEQA §15126.2, Appendix F, and as stipulated by the Kings County Community Development Agency.

The Natural Resources Agency adopted revisions to CEQA guidelines, which were approved by the Office of Administrative Law and filed with the Secretary of State on January 1, 2019. These CEQA guidelines revisions included the addition of the energy section of Appendix G. The following impact questions must be addressed:

- Impact 1: Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation?

- Impact 2: Would the project conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

It is acknowledged that an energy impact analysis is subject to the rule of reason, and must focus on energy demand that the project could actually cause, as opposed to a full "lifecycle" analysis that would account for energy used in building materials and consumer products

2. Project Description

The Project includes the construction of an anaerobic lagoon digester and associated infrastructure adjacent to the western boundary of the dairy. The digester is located approximately 1,194 feet from the nearest residence. The digester is 300 feet x 264 feet x 32 feet and will hold approximately 10.5 million gallons. In addition, several new dairy-related structures are proposed, including barns, corrals and free stalls. Once the digester and biogas infrastructure are operational, the site will generate approximately 20,749 million BTU/year. The proposed site plan is included as Attachment A.

5080 California Avenue, Suite 220 ◆ Bakersfield, California 93309-1697 ◆ Tel (661) 616-2600 ◆ Fax (661) 616-5970
www.qkinc.com

The existing High Roller Dairy facility includes 5,333 dairy cows (Animal Units) housed in open lot shade structures and free stall barns. Existing manure travels to an existing storage lagoon in the center of the parcel, and cows are milked in the northeast corner. There is no proposed increase in the number of Animal Units.
The Project proposes to install the following new items:

- Anaerobic Covered Lagoon Digester
- Associated Digester Infrastructure:
  - Biogas Blower/ Mechanical Building
  - Separator
  - Sand lane
  - Biogas Pipe
  - Moisture Trap and Pad
  - Stacking Slab
  - Reception pit with rotating pumps and screen bypass pump

- Dairy Structures:
  - Three open lot corrals
  - One free stall barn
  - Three hay barns

3. Environmental Setting

The existing High Roller Dairy is located at 14782 8th Avenue, approximately 2-miles southeast of Hanford, California at the intersection of State Route (SR) 43 and Jackson Avenue. It is within the Remnoy, California U.S. Geological Survey (USGS) 7.5-minute quadrangle, and within the southwest quarter of the southeast quarter of Section 20, Township 19 South, Range 22 East, Mount Diablo Base and Meridian. The proposed Project will be built on a portion of the southern section of Assessor Parcel Number (APN) 028-400-160. The Project site is surrounded by cropland and agriculturally related businesses to the north, east, south, and west.

4. Regulatory Setting

Federal Regulations

Energy Policy and Conservation Act
The Energy Policy and Conservation Act (EPCA) of 1975 was enacted for the purpose of serving the nation's energy demands and promoting conservation methods when feasibly obtainable. Since being enacted on December 22, 1975, EPCA has been amended to:
Grant specific authority to the President to fulfill obligations of the United States under the international energy program.

- Provide for the creation of a Strategic Petroleum Reserve capable of reducing the impact of severe energy supply interruptions.
- Conserve energy supplies through energy conservation programs, and the regulation of certain energy uses.

- Provide for improved energy efficiency of motor vehicles, major appliances, and certain other consumer products.
- Provide a means for verification of energy data to assure the reliability of energy data.
- Conserve water by improving the water efficiency of certain plumbing products and appliances.

National Energy Act of 1978

The National Energy Act of 1978 includes the following statutes: Public Utilities Regulatory Policies Act of 1978 (PURPA; Public Law 95-617), Energy Tax Act, National Energy Conservation Policy Act (NECPA), Power Plant and Industrial Fuel Use Act, and the National Gas Policy Act. The Power Plant and Industrial Fuel Use Act restricted the fuel used in power plants; however, these restrictions were lifted in 1987. The Energy Tax Act was superseded by the Energy Policy Acts of 1992 (EPACT92) and 2005. The National Gas Policy Act gave the Federal Energy Regulatory Commission authority over natural gas production and established pricing guidelines. NECPA set minimum energy performance standards, which replaced those in EPCA and the federal standards preempted those set by the state. NECPA was amended by the EPCA Amendments of 1985. Due to its relevance to electricity considerations, PURPA is discussed in more depth below.

PURPA

The Public Utility Regulatory Policies Act (PURPA) was established in response to the unstable energy climate of the late 1970s. PURPA sought to promote conservation of electric energy. Additionally, PURPA created a new class of non-utility generators, small power producers, from which, along with qualified co-generators, utilities are required to buy power.

PURPA was in part intended to augment electric utility generation with more efficiently produced electricity and to provide equitable rates to electric consumers. Utility companies are required to buy all electricity from a qualifying facility (QF). PURPA expanded participation of non-utility generators in the electricity market and demonstrated that electricity from non-utility generators could successfully be integrated with a utility's own supply. PURPA requires utilities to buy whatever power is produced by QFs (usually cogeneration or renewable energy). The Fuel Use Act of 1978 (FUA) (repealed in 1987) also helped QFs become established. Under the FUA, utilities were not allowed to use natural gas to fuel new generating technologies, but QFs, which were by definition not utilities, were able to take advantage of abundant natural gas and abundant new technologies (such as combined-cycle).

EPACT92

EPACT92 is comprised of 27 titles. It was passed by Congress and set goals, created mandates, and amended utility laws to increase clean energy use and improve overall energy efficiency in the United States. EPACT92 was amended as part of the Energy Conservation and Reauthorization Act of 1998.

Energy Policy Act of 2005

The Energy Policy Act of 2005 addresses energy efficiency; renewable energy requirements; oil, natural gas and coal; alternative-fuel use; tribal energy, nuclear security; vehicles and vehicle fuels; hydropower and geothermal energy; and climate change technology. The act provides revised annual energy reduction goals (two percent per year beginning in 2006), revised renewable energy purchase goals, federal procurement of Energy Star or Federal Energy Management Program designated products, federal green building standards, and fuel cell vehicle and hydrogen energy system research and demonstration.

Energy Independence and Security Act of 2007 (EISA)

EISA was signed into law on December 19, 2007. The objectives for EISA are to move the United States toward greater energy independence and security, increase the production of clean renewable fuels, protect consumers, increase product, building and vehicle efficiency, promote greenhouse gas (GHG) research, improve the energy efficiency of the federal government, and improve vehicle fuel economy. The renewable fuel standard in EISA established appliance energy efficiency standards for boilers, dehumidifiers, dishwashers, clothes washers, external power supplies, commercial walk-in coolers and freezers; federal buildings; lighting energy efficiency standards for general service incandescent lighting in 2012; and standards for industrial electric motor efficiency.

State Regulations

California Building Energy Efficiency Standards: Title 24
California established statewide building energy efficiency standards following legislative action. The legislation required the standards to be cost-effective based on building life cycle and to include both prescriptive and performance-based approaches. The 2005 Building Energy Efficiency Standards were first adopted in November 2003 and took effect October 1, 2005. Subsequently the standards have undergone various updates including 2013, 2016 2019 and now 2020.

The 2013 Building Energy Efficiency Standards went into effect on July 1, 2014. The 2016 standards, which went into effect on January 1, 2017 and will continue to improve upon the current 2013 Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 Building Energy Efficiency Standards improve upon the 2016 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. Buildings permitted on or after January 1, 2020, must comply with the 2019 Standards. The California Energy Commission updates the standards every three years.

The 2022 Building Energy Efficiency Standards (Energy Code) will improve upon the 2019 Energy Code for new construction of, and additions and alterations to, residential and nonresidential buildings.

SB 1368 – GHG Emissions Performance Standards for Major Power Plant Investments
SB 1368 was passed in September 2006 and requires the CEC to develop and adopt a GHG emissions performance standard for long-term procurement of electricity by local publicly owned utilities. The CPUC and CEC had adopted specific regulations regarding GHG emissions performance standards for electricity service providers. Compliance with these standards is expected to improve fuel efficiency.

California Solar Initiative
On January 12, 2006, the CPUC approved the California Solar Initiative (CSI), which provides $2.9 billion in energy-related incentives between 2007 and 2017. CSI is part of the Go Solar California campaign, and builds on ten years of state solar rebates offered to areas services by California's investor-owned utilities (IOU): Pacific Gas and Electric (PG&E), Southern California Edison (SCE), and San Diego Gas and Electric (SDG&E.) The CSI is overseen by the CPUC and includes a $2.5 billion program for commercial and existing residential customers, funded through revenues and collected from gas and electric utility distribution rates. Furthermore, the CEC will manage $350 million targeted for new residential building construction, utilizing funds already allocated to the CEC to foster renewable projects between 2007 and 2011.

Current incentives provide an upfront, capacity-based payment for a new system. In its August 24, 2006

decision, the CPUC shifted the program from volume-based to performance-based incentives and clarified many
elements of the program's design and administration. These changes were enacted in 2007.

AB 2514 – Energy Storage Systems
AB 2514 requires the CPUC to adopt an energy storage system procurement target, if determined to be appropriate, to be achieved by each load-serving entity by December 31, 2015 and a second target to be achieved by December 31, 2020. The bill would require the governing board of a local publicly owned electric utility to adopt an energy storage system procurement target, if determined to be appropriate, to be achieved by that utility by December 31, 2016; second target by December 31, 2021. The bill would require each load serving entity and local publicly owned electric utility to report certain information to the CPUC (load-serving entity) or to the Energy Commission (local publicly owned electric utility).

Renewables Portfolio Standard (RPS)
California's RPS requires retail sellers of electricity to increase their procurement of eligible renewable energy resources by at least one percent per year so that 20 percent of their retail sales are procured from eligible renewable energy resources by 2017. If a seller falls short in a given year, they must procure more renewables in succeeding years to make up the shortfall. Once a retail seller reaches 20 percent renewable resources, they need not increase their procurement in succeeding years. RPS was enacted through SB 1078 – The Renewable Portfolio Standard, signed in September 2002. The CEC and the CPUC are jointly implementing the standard. In 2006, RPS was modified by SB 107 to require retail sellers of electricity to reach the 20 percent renewables goal by 2010. In 2011, RPS was further modified by SB 2 to require retailers to reach 33 percent renewable energy by 2020.

SB 350
SB 350 was approved on October 7, 2015. SB 350 will: (1) increase the standards of the California RPS program by requiring that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030; (2) require the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030; (3) provide for the evolution of the Independent System Operator into a regional organization; and (4) require the state to reimburse local agencies and school districts for certain costs mandated by the state through procedures established by statutory provisions. Among other objectives, the Legislature intends to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

Executive Order (EO) B-18-12
EO B-18-12 was signed into law on April 25, 2012 and directed state agencies to reduce their grid- based energy purchases by at least 20 percent by 2018, as compared to a 2003 baseline. Pursuant to EO B-18-12, all new state buildings and major renovations beginning design after 2025 shall be constructed as Zero Net Energy facilities with an interim target for 50 percent of new facilities beginning design after 2020 to be Zero Net Energy. State agencies shall also take measures toward achieving Zero Net Energy for 50 percent of the square footage of existing state-owned building area by 2025 and reduce water usage by 20 percent by 2020. Additionally, the following measures relevant to energy are required:

- Any proposed new or major renovation of state buildings larger than 10,000 square feet shall use clean, on-site power generation, such as solar photovoltaic, solar thermal and wind power generation, and clean back-up power supplies, if economically feasible.
- New or major renovated state buildings and build-to-suit leases larger than 10,000 square feet shall obtain a Leadership in Energy and Environmental Design (LEED) "Silver" certification or higher using the applicable version of LEED.
- New and existing buildings shall incorporate building commissioning to facilitate improved and efficient building operation.
- State agencies shall identify and pursue opportunities to provide electric vehicle charging stations and accommodate future charging infrastructure demand, at employee parking facilities in new and existing buildings.

California Environmental Quality Act

Appendix F of the CEQA Guidelines describes the types of information and analyses related to energy conservation that are to be included in Environmental Impact Reports that are prepared pursuant to CEQA. Energy conservation is described in Appendix F of the CEQA Guidelines in terms of decreased per capita energy consumption, decreased reliance on natural gas and oil, and increased reliance on renewable energy sources. To assure that energy implications are considered in project decisions, EIRs must include a discussion of the potentially significant energy impacts of proposed projects, with emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

Projects have long relied on existing energy-reduction requirements in building codes, and on the beneficial side effects of reducing greenhouse gases, to demonstrate that a project's energy use will not be wasteful or inefficient. That approach is no longer sufficient under CEQA, however, without an express assessment (based on facts) of the "before" and "after" energy requirements of proposed projects for construction and operational impacts from all sources (stationary, mobile and area).

Local Regulations

Kings County 2035 General Plan – Resource Conservation Element

The County's mild climate and agricultural economy make solar heating and waste-to-energy projects viable alternatives to traditional fossil fuel production sources. Sources of biomass, or raw material suitable for conversion to energy, include manure from dairy operations and municipal waste at landfill sites. To improve air quality and achieve greenhouse gas emissions reductions mandated by recent State legislation (AB 32), sustainable and renewable alternative energy sources including wind, solar, hydroelectric and biomass energy can be promoted, and energy conservation measures encouraged. The construction of commercial solar farms in agriculturally zoned land is a conditional use in Kings County and should be directed to lower priority farmland. Future consideration should explore standards to streamline permitting under the site plan review process.

RC OBJECTIVE G1.2 - Promote the development of sustainable and renewable alternative energy sources, including wind, solar, hydroelectric and biomass energy.

RC Policy G1.2.1 - Review proposed biomass energy projects through the conditional use permit process of the County Zoning Ordinance and ensure that such projects meet all air quality requirements.

RC Policy G1.2.2 - Encourage and support efforts to develop commercial alternative energy sources in lower priority agricultural lands within Kings County, when appropriately sited.

RC Policy G1.2.3 - Support the development and use of small-scale alternative energy sources that provide energy for individual homeowners and businesses.

5. Analysis

The analysis herein is based on the Air Quality Impact Analysis/ Greenhouse Gases Analysis prepared for the Project ((Trinity Consultants, 2020). Energy usage for construction and operations were developed using the California Emissions Estimator Model (CalEEMod) output files. Project energy consumption levels were estimated for both construction and operations scenarios. These estimates include: 1) fuel use for construction off-road equipment and construction on-road vehicles; 2) fuel use from vehicle trips generated by the Project operations; 3) operational natural gas estimates; and 4) operational electricity estimates.

Table 1 – Land Use

Land Use	Area
General Light Industry	38,750 sq ft

Source: (Trinity Consultants, 2020)

Estimates of average daily traffic (ADT) volumes generated by the proposed dairy expansion are presented in the tables below. Estimates of additional heavy trucks and employees attributable to the expansion were provided by the applicant. Both the heavy truck and employee ADT estimates account for incoming and outgoing trips.

The estimates supplied were the anticipated trucks per month and year for each category. It was assumed from the information that the trips would be evenly spread through the month and therefore, would be a maximum of one additional truck per day for each category. This would equate to two trips (inbound and outbound) for each category of delivery.

Table 2 – Heavy Truck ADT

Load Type	Additional Trucks		ADT
	Monthly	Yearly	
Commodity	11	--	2
Seasonal Forage	--	207	2
Milk	15	--	2
Total			6

Source: (Trinity Consultants, 2020)

Based on the ADT estimates above, Table 3 presents the anticipated fuel usage during Project construction. Based on the land use assumptions and the default energy consumption factors for operations included in CalEEMod, Table 4 presents the estimated annual fuel use, and Table 5 illustrates operational electricity and natural gas consumption. Since the Project does not propose to increase

operational activities, there is no anticipated increase in current energy usage, which would be considered baseline.

Table 3 – Construction Fuel Usage Estimates

Construction Phase	Number of Days	Off Road Equipment Hours	Daily ADT	Total Fuel Usage
Site Preparation	5	40	12	568
Grading	5	40	14	608
Building Construction	42	336	14	28,432
Total Fuel Usage				29,608 gallons

Table 4 – Annual Operational Fuel Usage Estimates

Land Use	Annual ADT	Annual Fuel Consumption
General Light Industry	3,650	7,300 gallons

Table 5 – Annual Operational Energy Consumption Estimates

Land Use	Area	Operational Natural Gas (kBTU/year) (unmitigated)	Operational Electricity (kWh/yr)
General Light Industry	38,750 sq ft	808,712	341,775

Thresholds of Significance

CEQA requires that an EIR identify the significant environmental effects of the Project (CEQA Guidelines Section 15126) but does not promulgate specific thresholds for significance. Instead, CEQA Guidelines Section 15064(b) states that "the determination…calls for careful judgment on the part of the public agency involved…"and that an ironclad definition of significant effect is not possible because the significance of an activity may vary with the setting." CEQA encourages lead agencies to develop and publish their own thresholds of significance for the purpose of determining the significant effects of their projects. The fundamental definition of significant effect under CEQA is "a substantial adverse change in physical conditions." This criterion underlies the evaluation of environmental impacts for most of the impact issues identified in the CEQA Environmental Checklist Form (Guidelines Appendix G).

A proposed change to CEQA Guidelines Section 15064.7 provides that lead agencies may use regulatory standards as thresholds of significance. In order to serve as a threshold, the standard must: (1) be adopted by some formal mechanism; (2) be adopted for environmental protection; (3) govern the impact at issue; and (4) govern the project type. In the case of Energy Impacts Assessment in Kings County, there is not yet a specific threshold of significance.

[1] Off road equipment are conservatively estimated to use 2 gallons per hour operating in place and medium duty diesel trucks are conservatively estimated to use 8 gallons per mile (rounded).
[2] Heavy duty trucks are conservatively estimated to use 20 gallons per day, and employee vehicles use 2 gallons per day.

Typically, there would be a significant energy impact if the increase in demand for electricity or gas would impact the current capacities of the electric and natural gas utilities.

Energy Impacts

Based on the Project gas and electricity consumption estimates summarized above in Tables 4, 5, and 6 above, Table 6 summarizes relative Project energy impacts compared to Kings County 2019 usage. The proposed Project would generate substantially less than one percent of the County's usage.

Table 6 - Summary of Project's Operational Energy Consumption

Project Total	Operational Natural Gas (kBTU/year) (unmitigated)	Operational Electricity (kWh/yr)
	808,712	341,775
County Total	34,200,000	37,700,000
Percent	0.023	0.009

The Project's relative consumption would be minimal, and less than one percent of the County's usage, which is considered *de minimis*. The proposed Project would not require any increase in annual consumption rates of fuel, electricity and gas. Therefore, natural gas and electricity providers would not need to extend distribution networks and support facilities to serve the proposed Project. However, once the digester and biogas infrastructure are operational, the site will generate approximately 20,749 million BTU/year, thus reducing dependence on fossil fuels that generate air pollution and greenhouse gases emissions, meeting the County and State's climate and energy goals to reduce energy usage, increase energy efficiency and increase the use of forms of renewable energy.

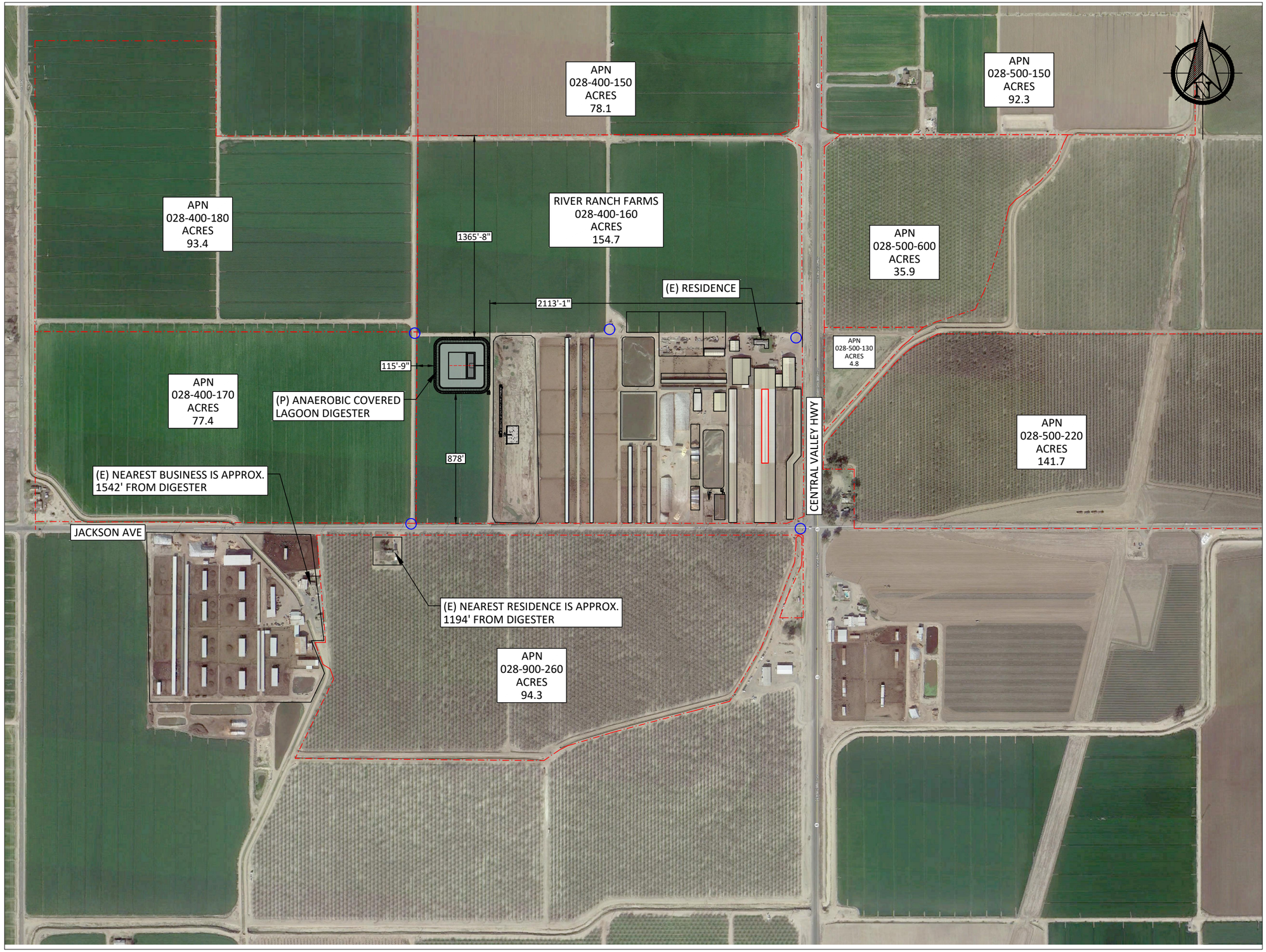
Therefore, the Project would not a) result in impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, or b) obstruct a State or local plan.

References

Kings County 2035 General Plan

Trinity Consultants. (2020). *Air Quality Impact Analysis.*

ATTACHMENT A
SITE PLAN



General Notes

CONFIDENTIAL

(P) PROPOSED (E) EXISTING

APN BOUNDARY

DAIRY ENTRANCES

MAAS ENERGY WORKS

Firm Address

3711 Meadow View Dr.
Suite 100
Redding, CA, 96002

Project Name and Address

High Roller Dairy
14782 8th Avenue,
Hanford, California 93230

Scale Bar

0 650' 1300'

1" 2"

Drawn By	Date	Version
Kelli Eusted	3/31/20	2.04
Sheet Size	Page #	
11" x 17"	1 of 2	

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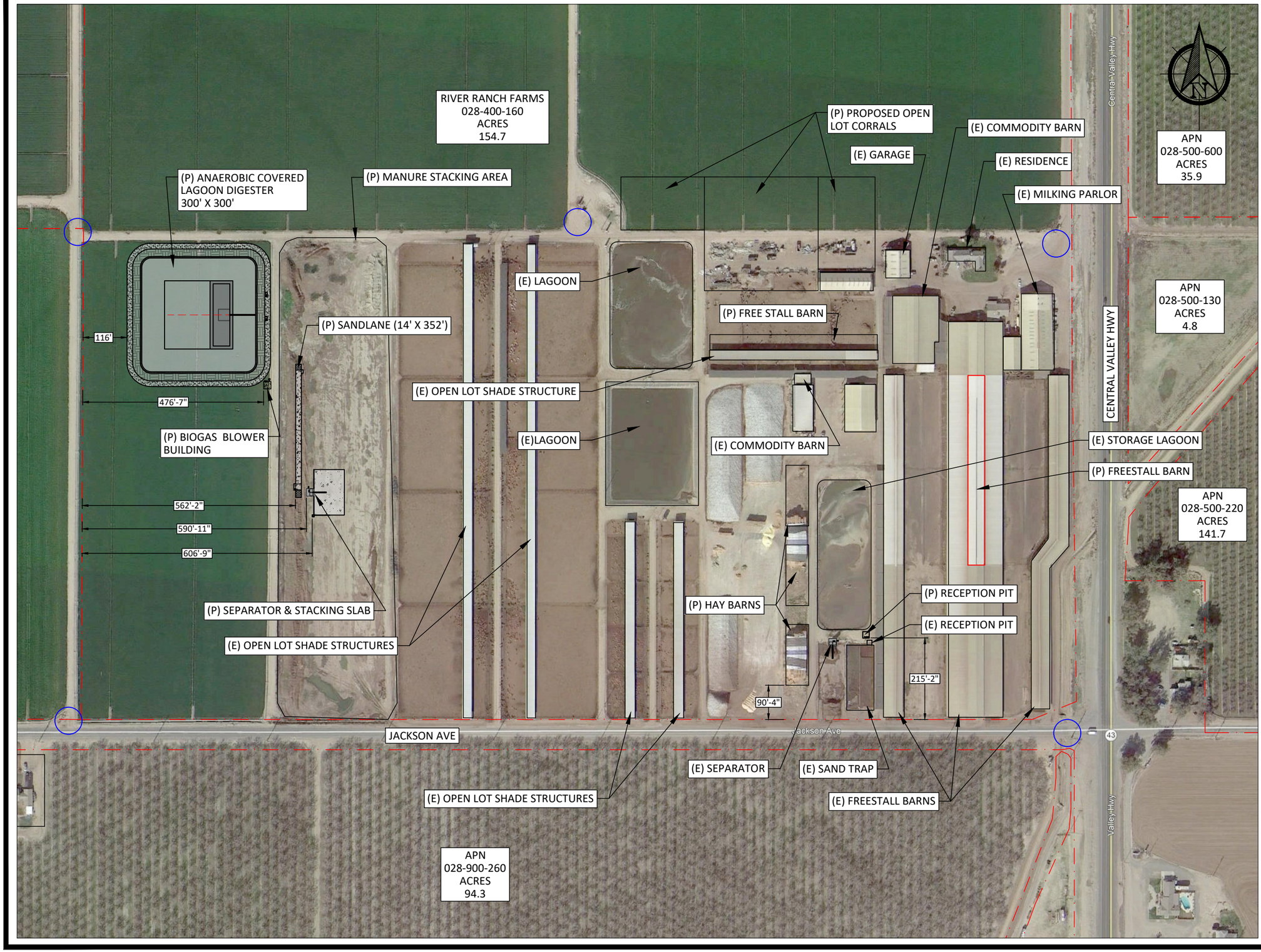

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June 8, 2020 257-55
Electronic Mail

Ms. Jaymie Brauer
Principal Planner/Project Manager
Quad Knopf, Inc. dba QK
5080 California Avenue, Suite 220
Bakersfield, California 93309

REF: Traffic Investigation and VMT Evaluation for Proposed Expansion of High Roller Dairy in Kings County

Dear Ms. Brauer:

This letter is in response to your request for a traffic investigation and vehicle miles traveled (VMT) evaluation for a proposed expansion of the High Roller Dairy in Hanford, California. It is our understanding that the expansion would involve increasing the herd size by 400 milking cows.

Trip Generation

Estimates of average daily traffic (ADT) volumes generated by the proposed dairy expansion are presented in the tables below. Estimates of additional heavy trucks and employees attributable to the expansion were provided by the applicant. Both the heavy truck and employee ADT estimates account for incoming and outgoing trips.

The estimates supplied were the anticipated trucks per month and year for each category. It was assumed from the information that the trips would be evenly spread through the month and therefore would be a maximum of one additional truck per day for each category. This would equate to two trips (inbound and outbound) for each category of delivery.

Table 1
Trip Generation
Heavy Truck ADT

Load Type	Additional Trucks		ADT
	Monthly	Yearly	
Commodity	11	- - -	2
Seasonal Forage	- - -	207	2
Milk	15	- - -	2
		Total	6

The expansion will add a maximum of two additional employees, which, as shown in table 2, would equate to 4 additional vehicle trips per day.

Table 2
Trip Generation
Employee ADT

Vehicle Type	Additional Employees		ADT
	IN Daily	OUT Daily	
Passenger	2	2	4
		Total	4

In conformance with California Department of Transportation guidelines, the Kings County threshold condition for requiring an analysis of traffic impacts is the addition of 50 project trips to one or more intersections during the peak hour of adjacent street traffic. The peak hour of adjacent street traffic typically occurs on a weekday during the AM or PM peak hour for commuter traffic.

It is estimated that the dairy expansion will generate a total ADT of 10 project trips. Given that peak hour trips are a fraction of daily trips, the dairy expansion would not meet the trip generation threshold of 50 peak hour trips. Therefore, being below thresholds to require analysis, no traffic impacts are anticipated due to the increase in trips.

Vehicle Miles Traveled (VMT) Evaluation

An evaluation of vehicles miles traveled (VMT) was conducted based on applicable California Environmental Quality Act (CEQA) guidelines. The evaluation involved reviewing VMT attributable to the proposed dairy expansion and assessing whether such "project VMT" would result in a significant transportation impact.

Guidelines for assessing project VMT as part of a transportation impact analysis under CEQA are contained in the State of California, Office of Planning and Research's "Technical Advisory on Evaluating Transportation Impacts in CEQA," dated December 2018. This advisory includes methodology recommendations for analyzing project VMT, including the following regarding vehicle type (page 4).

> **Vehicle Types.** Proposed (CEQA Guideline) Section 15064.3, subdivision (a), states, "For the purposes of this section, 'vehicle miles traveled' refers to the amount and distance of automobile travel attributable to a project." Here, the term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks.

The proposed dairy expansion would result in an increase in both heavy truck trips and passenger vehicle trips. Based on the excerpt above, only the passenger vehicle trips would be subject to VMT analysis under CEQA. The table below provides the location and distance of population centers located near the dairy from which new employee-based passenger vehicle trips would likely be generated.

Table 3
Local Population Centers

City	Direction from Dairy	Distance (miles)
Hanford	N	7
Lemoore	NW	10
Tulare	SE	15
Visalia	NE	17

It is important to note that new employees would be drawn from the same population centers as existing employees. Therefore, the proposed dairy expansion is not anticipated to impact passenger vehicle VMT, and consequently, per CEQA Guideline Section 15064.3, subdivision (b), is presumed to result in a less than significant transportation impact.

Summary

It is estimated that the proposed herd expansion at the High Roller Dairy in Hanford, California, will generate a total of 10 project trips per day, which is significantly lower than the traffic impact study threshold of 50 peak hour trips. Therefore, no traffic impacts are anticipated for the project.

In addition, since new employees would likely be drawn from the same population centers as existing employees, the proposed expansion is not expected to have an impact on VMT. Therefore, project VMT would not result in a significant transportation impact.

Please contact me should you have any questions.

Very truly yours,

Ian J. Parks
RCE #58155

IJP/ljh