INITIAL STUDY

FOR THE

NUNES DAIRY EXPANSION PROJECT

CONDITIONAL USE PERMIT APPLICATION NO. CUP16-001

COUNTY OF MERCED
DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT
2222 'M' Street
Merced, CA 95340

Prepared with the Technical Assistance of:

environmental PLANNING PARTNERS, INC.
2934 Gold Plan Court, Ste 3
Rancho Cordova, CA 95670

June 2020

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NOTICE OF INTENT
TO ADOPT A MITIGATED NEGATIVE DECLARATION
FOR THE NUNES DAIRY EXPANSION PROJECT

To: Interested Persons

From: County of Merced
Department of Community and Economic Development
2222 'M' Street
Merced, CA 95340
Phone: (209) 385-7654
pam.navares@countyofmerced.com

Contact: Pam Navares, Planner II

Subject: Notice of Intent to Adopt a Mitigated Negative Declaration

Merced County is the Lead Agency pursuant to the California Environmental Quality Act (CEQA) for the proposed Nunes Dairy Expansion Project. Merced County intends to adopt a Mitigated Negative Declaration for the proposed project.

The project site is located on the east side of South Healy Road, 750 feet north of Reilly Road, and south of the City of Merced in unincorporated Merced County as described in the attached Initial Study/Mitigated Negative Declaration (IS/MND). Merced County is considering Conditional Use Permit Application No. CUP16-001 to allow the construction of a new freestall barn within the existing dairy footprint and modification of the dairy to increase the number of animals housed from 1,276 to 2,100.

The proposed IS/MND would normally be available for public review at the offices of the Merced County Community and Economic Development Department. Due to Covid 19, however, the County offices are closed at this time. The document can be found online at the Merced County website:

www.co.merced.ca.us/index.aspx?nid=414

The public comment period on the IS/MND begins on June 9, 2020 and closes on July 10, 2020. Comments may be submitted to "pam.navares@countyofmerced.com" and should include the phrase "Nunes Dairy Expansion Project IS/MND" in the subject line. The public hearing for the project is tentatively scheduled to be heard at 9:00 a.m. on July 22, 2020, during the Planning Commission Meeting, located at 2222 'M' Street, Merced, CA 95340, Third Floor, Board Chambers. Although the public may not attend the meeting in person, the live broadcast will be available to the public via a link on the Planning Commission page of the Merced County website:

www.co.merced.ca.us/planning/index.html.

The County will accept comments for consideration during the meeting via email according to the following protocol:

IMPORTANT NOTICE AND GUIDANCE
REGARDING COVID-19 & PUBLIC HEARINGS

Based on guidance from the California Department of Public Health and the California Governor's Office, in order to minimize the spread of the COVID-19 virus, please comply with the following:

1. Meeting location(s) will be unavailable to the public in order to limit potential transmission of COVID-19.
2. You are strongly encouraged to observe the live stream of the Planning Commission meetings remotely by visiting https://www.co.merced.ca.us/2229/Planning-Commission-Meetings
3. If you wish to make a comment on a specific agenda item, please submit your comment via email by 5:00 p.m. on the Monday prior to the Planning Commission meeting. Please submit your comment to the Planning Department at planning@countyofmerced.com. Your comment will be placed into the record at the meeting.
4. If you are watching the live stream of the Planning Commission meeting and wish to make either a general public comment or to comment on a specific agenda item as it is being heard, please submit your comment, limited to 250 words or less, to planning@countyofmerced.com. Every effort will be made to read your comment into the record, but some comments may not be read due to time limitations. Comments received after an agenda item is heard will be made part of the record if received prior to the end of the meeting.

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Appendices

Bound Separately – Available from the Merced County Department of Community and Economic Development

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INITIAL STUDY AND ENVIRONMENTAL EVALUATION

Project Title:	Nunes Dairy Expansion Conditional Use Permit No. CUP16-001
Project Location:	1730 South Healy Road Merced, CA 95340
Lead Agency Name and Address:	Merced County Community and Economic Development Department 2222 'M' Street Merced, CA 95340
Contact Person and Phone Number:	Pam Navares, Planner II Phone: (209) 385-7654
General Plan Designation:	Agricultural (Merced County General Plan)
Zoning:	A-1 (General Agricultural; Merced County)

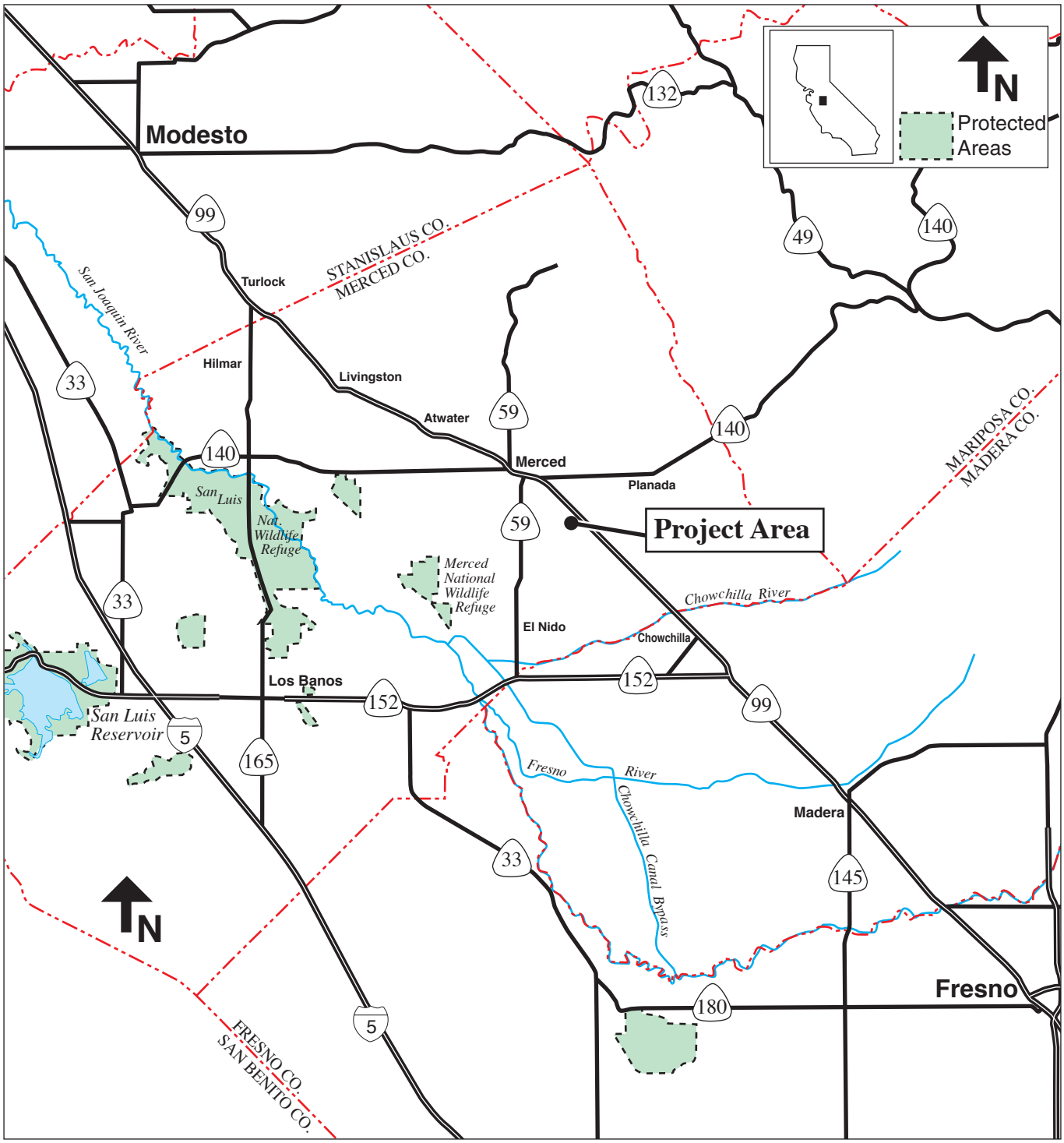
1. DESCRIPTION OF PROJECT

The project under evaluation in this Initial Study (IS) is the expansion of an existing dairy facility located in rural Merced County, south of the City of Merced. This Initial Study focuses on whether the proposed project may cause significant effects on the environment. In particular, consistent with Section 21083.3 of the Public Resources Code, this Initial Study is intended to assess any effects on the environment, which are peculiar to the proposed project or to the parcel on which the project would be located. The Initial Study is also intended to assess whether any environmental effects of the project are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or by other means [Section 15152(d)(2) of the Guidelines for the California Environmental Quality Act (CEQA)]. If such revisions, conditions or other means are identified, they will be imposed as mitigation measures.

This initial study relies on CEQA Guidelines Sections 15064 – 15064.7 in its determination of the significance of environmental effects. According to Section 15064(f), the finding as to whether a project may have one or more significant effects shall be based on substantial evidence in the record, and that controversy alone, without substantial evidence of a significant effect, does not trigger the need for an EIR.

LOCATION

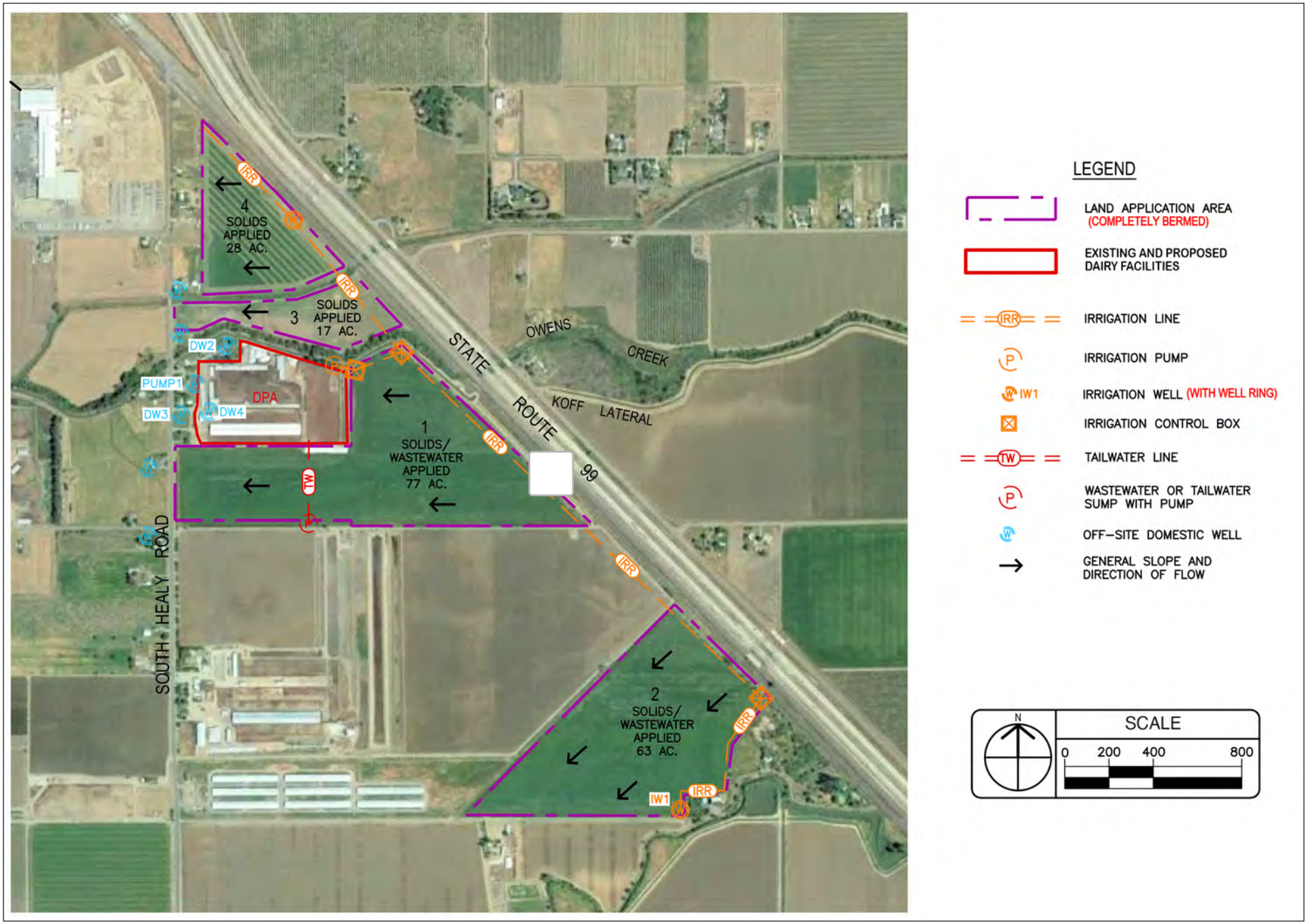
The Nunes Dairy is located on 18± acres of an existing farm totaling approximately 207 acres in unincorporated Merced County. The project site is located on the east side of South Healy Road, 750 feet north of Reilly Road, and south of the City of Merced. The project's location is within the central California region (see Figures 1 and 2). The project cropland application area consists of 185± acres located on portions of four parcels (see Figure 3 and Table 1 for Merced County Assessor's Parcel Numbers (APN) and cropped fields). The project site is located in Section 3, Township 8 South, Range 14 East, Mount Diablo Base and Meridian; 37° 15' 37.60" N, 120° 25' 59.90" W.



SOURCE: Planning Partners 2020

Nunes Dairy Project CUP16-001

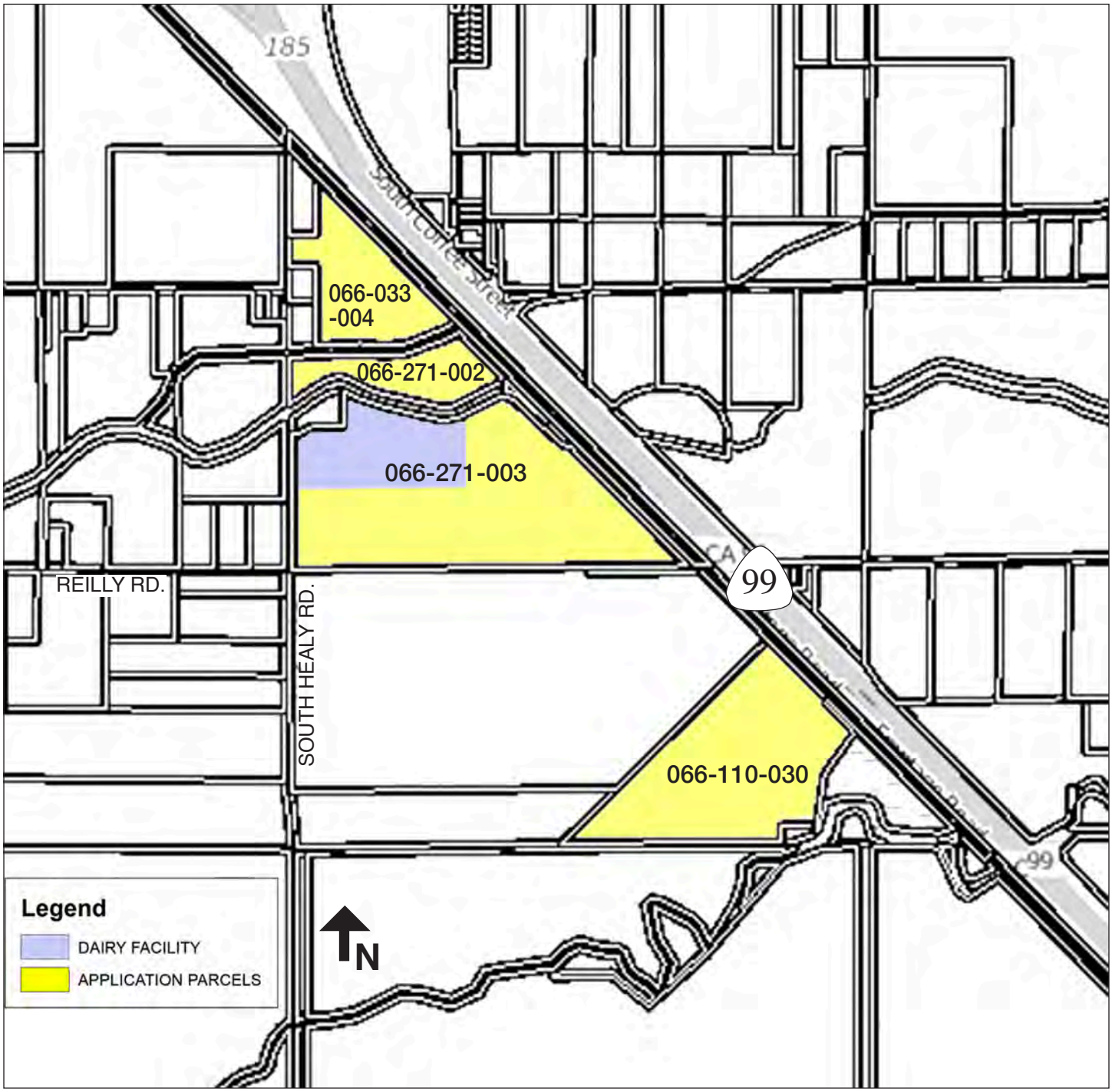
Figure 1
Regional Location



Nunes Dairy Project CUP16-001

SOURCE: Sousa Engineering 2017; Planning Partners 2020

Figure 2
Project Location



Nunes Dairy Project CUP16-001

SOURCE: Merced County GIS May 2016, updated January 2020

Figure 3

Project Site Assessor Parcel Numbers

Table 1 Nunes Dairy Project Parcels, Acreage, and Use						
APN	**Field Name**	**Gross Acres**	**Cropped Acreage ***	**Use**	**Nutrients Applied**	**Irrigation Source**
066-271-003	Active Dairy	92	-	Dairy	-	-
	Field 1		77	Oats/Sudangrass silage	WW	Canal/Well
066-110-030	Field 2	65	63	Oats/Corn silage	DM	Canal/Well
066-271-002	Field 3	22	17	Pasture	Other	Well
066-033-004	Field 4	28	28	Oats silage	Other	Canal
Total		**207**	**185**			

APN = Assessor's Parcel Number. WW = wastewater. DM = Dry Manure

* Approximate acreage. Cropped acreage is based on the Proposed Conditions Nutrient Management Plan dated 10/03/2017. Nutrients may not be applied to the gross acreage of the parcel listed, but only the cropped acreage listed.

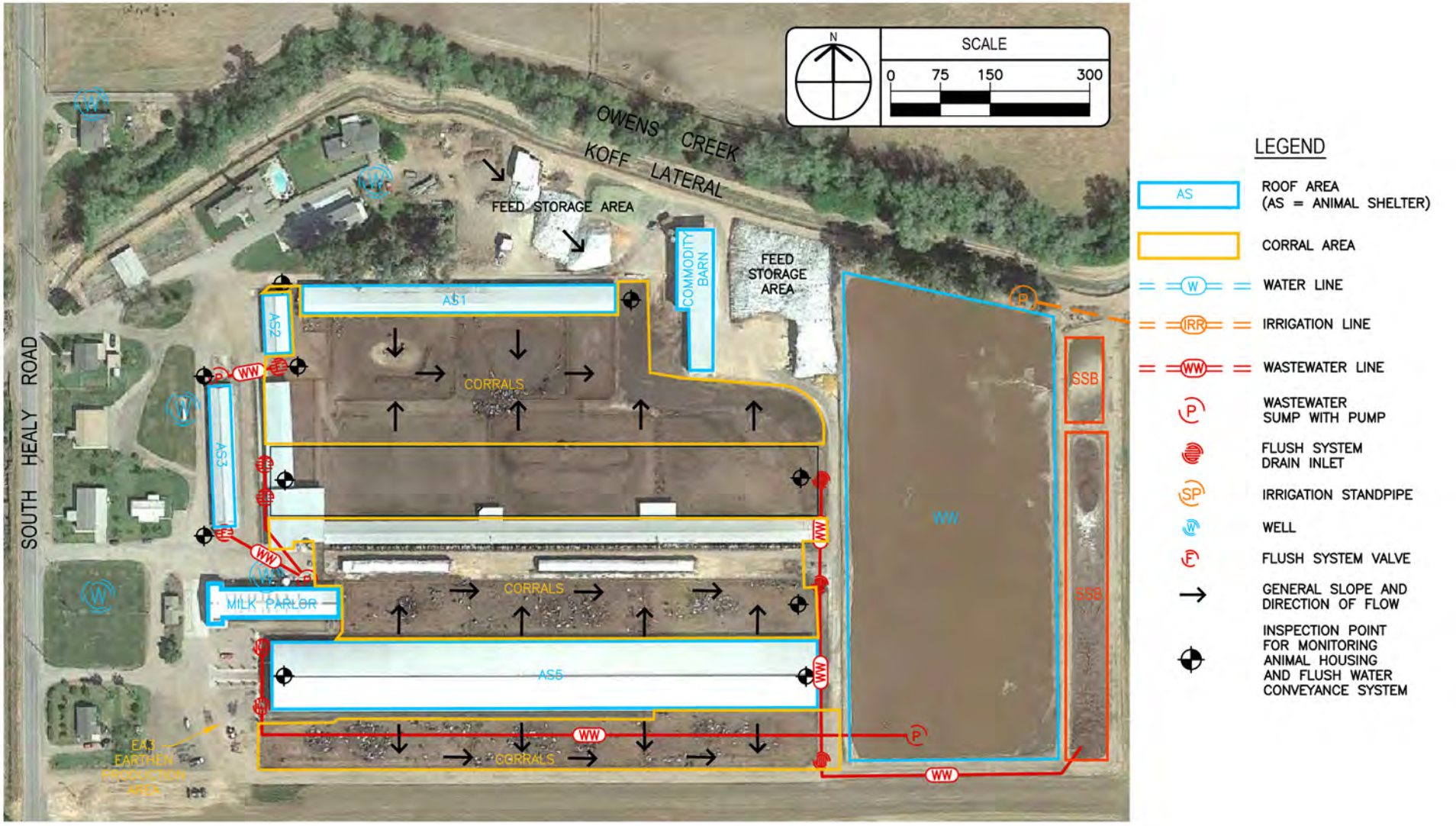
** APN 066-271-001 is also owned by the dairy applicant. This 2-acre parcel includes dairy residences, but does not include active dairy operations.

Source: Project Applicant, June 2016; Proposed Conditions Nutrient Management Plan (10/03/2017); Merced County GIS May 2016, updated January 2020.

EXISTING CONDITIONS

The existing dairy includes approximately 179,455 square feet of structures that are located on an approximate 18-acre portion of APN 066-271-003 (see Figure 4). The facilities include:

- freestall barn
- animal housing structures
- compost area
- commodity barn
- feed storage area
- open corrals
- milking parlor
- wastewater storage pond
- two settling basins



Nunes Dairy Project CUP16-001

SOURCE: Sousa Engineering 2015, Planning Partners 2020

Figure 4

Existing Dairy Facilities

Approximately 185± acres of the project area are used for the production of crops; approximately 140± of these acres (Fields 1 and 2) are currently used for the application of manure process water and/or solid manure[1] (see Figures 2 and 3). The remaining project acres consist of field roads and ancillary farm uses.

Definition of the Project Site – For the purposes of this Initial Study, the "project site" refers to the area of active dairy facilities. The larger project also includes cropland associated with the dairy farm. Throughout this document, "project area" refers to all parcels that are part of the project, including the active dairy facilities and dairy farm cropland.

As established at the time of Initial Study preparation (April 2020), there are approximately 676 milk cows, 100 dry cows, and 500 support stock (calves, heifers), totaling 1,276 animals at the dairy. The predominant breed of cows housed at the dairy is Holstein. The cows are housed in the freestall barn, open corrals, and barn structures. Dry manure is used for animal bedding.

The existing facility consists of flush and scrape systems that are used to collect and process wastewater and solid manure. Animal wastes from freestall and other concrete-surfaced areas are flushed with recycled water to an on-site waste management system that consists of two solid settling basins and a wastewater storage pond (retention pond). The area of active dairy facilities has been graded to direct corral runoff to the existing waste management system. Stormwater runoff from impervious surfaces and roofed areas is routed to the wastewater pond, except for rainwater from a barn roof, which is routed to a nearby yard. Recycled water is used to clean the milk parlor floor and is the source of sprinkler pen water. The settling basins are monitored and solids are removed from the surface as necessary using an excavator.

Dry manure is removed from corrals twice a year, usually in the spring and fall after harvest. The dry manure is stockpiled before it is used as bedding, hauled offsite as piles accumulate, or processed for application to cropland for use as fertilizer and soil amendments. Manure solids are separated in the solids settling basins with 50 percent solids separation efficiency – there is no mechanical separator. Approximately 3,500 tons of solid manure (or 45 percent of previously separated solids) is exported and applied to offsite fields. Commercial fertilizer is used as a starter at planting on some of the project area fields. As reflected in the Nutrient Management Plan (NMP), solid manure is exported from the facility and applied to offsite agricultural fields. While the exact location of these offsite cropland parcels may vary throughout operations, the disposal of solid manure and/or wastewater at offsite locations and the necessary acreage necessary to properly dispose of manure liquids and solids are accounted for in the project NMP.

Wastewater is mixed with irrigation water supplied by Merced Irrigation District (MID) canal surface water and groundwater from two farm irrigation wells and applied to cropland. Receiving fields are graded to guide excess applied wastewater to an existing tailwater return system or maintained on the project area with berms. Collected tailwater from Field 1 is recycled and pumped back to the top of the field for reapplication. Field application methods include flood irrigation, manure spreading, and injection (generally performed every two to three years).

[1] The existing conditions NMP includes no manure applied to Fields 3 and 4. In 2016, Field 3 was used for beef cattle grazing (not dairy cattle from the dairy facility), and Field 4 was fallow. The dairy applicant can apply solids to Fields 3 and 4, and has done so in the past. The NMP would be modified at that time to reflect its use.

All of the crops grown on site are used for dairy feed crops and supplement imported grain and hay. Fields are cropped in oats silage, maintained as pasture, or double-cropped with oats silage-soft dough and corn silage, and oats silage-soft dough and sudangrass silage. Feed is stored in four silage piles and in an on-site commodity barn.

The operators of the Nunes Dairy currently hire a pest control service to minimize the fly population on the dairy site. The service includes bi-monthly spray visits for the residences and milking parlor. Employees apply fly bait as necessary (Project Applicant 2016).

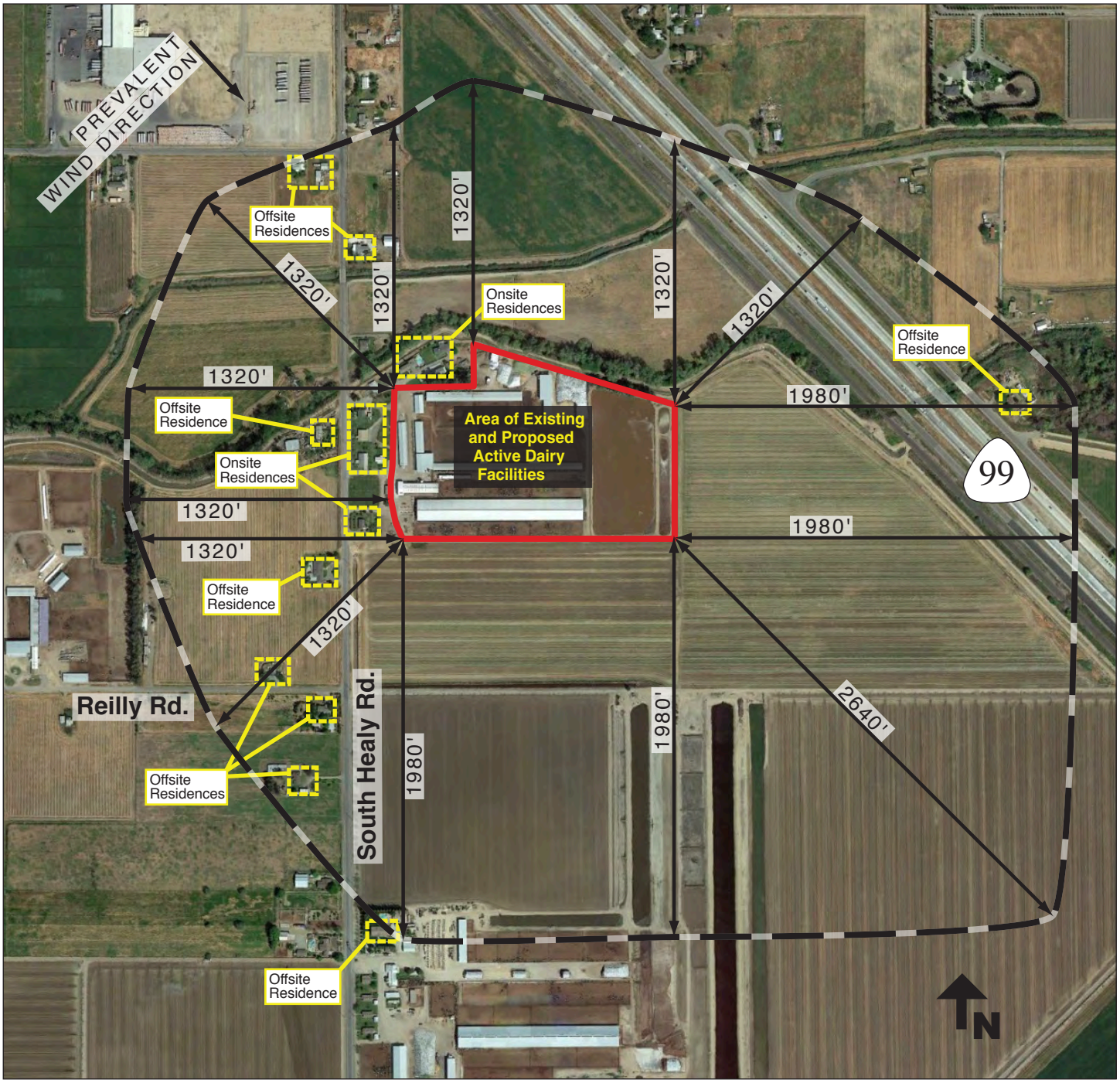
There are five on-site employee residences located at the dairy facility. There are additional residences located on APN 066-271-001 owned by the project applicant. Domestic water is delivered to the site by several on-site domestic water wells. Sewer service is provided by on-site septic systems. There is one diesel generator on site located at the milking parlor.

Operations at the dairy are 24 hours per day, 365 days per year, with most operations concentrated during daylight hours. Night lighting at the facility includes building-mounted dawn-to-dusk lights on the animal shelters and the milk barn. The dairy currently employs a staff of approximately seven workers.

Currently, heavy trucks (milk tankers, commodity deliveries) and other vehicles serve the project site. Existing daily trips by all classes of vehicles are estimated at 21.2 average daily trips (ADT), with approximately 3.9 heavy truck trips. All dairy-related trips currently access the site via Healy Road. State Route (SR) 99 to the east provides regional access to the site. The dairy currently provides on-site parking areas for employees and visitors.

SURROUNDING LAND USES AND SETTING

There are offsite single-family residences associated with neighboring agricultural operations surrounding the project site (see Table 2). There are several offsite residences located within the windshed of the dairy (defined as an area of 1,320 feet upwind to 2,640 downwind of the periphery of the animal facility) (see Figure 5). The closest offsite residence is located approximately 380 feet west of the feed storage area on Healy Road. Additional nearby offsite residences include several residences within 1,000 feet: a residence 720 feet north of dairy facilities on the east side of Healy Road; a residence 465 feet west of the facility on the west side of Turner Avenue; a single family residence 965 feet southwest of the facility along Reilly Avenue; and two residences 920 feet and 985 feet southwest of the facility at the intersection of Healy Road and Reilly Road (see Figure 6).

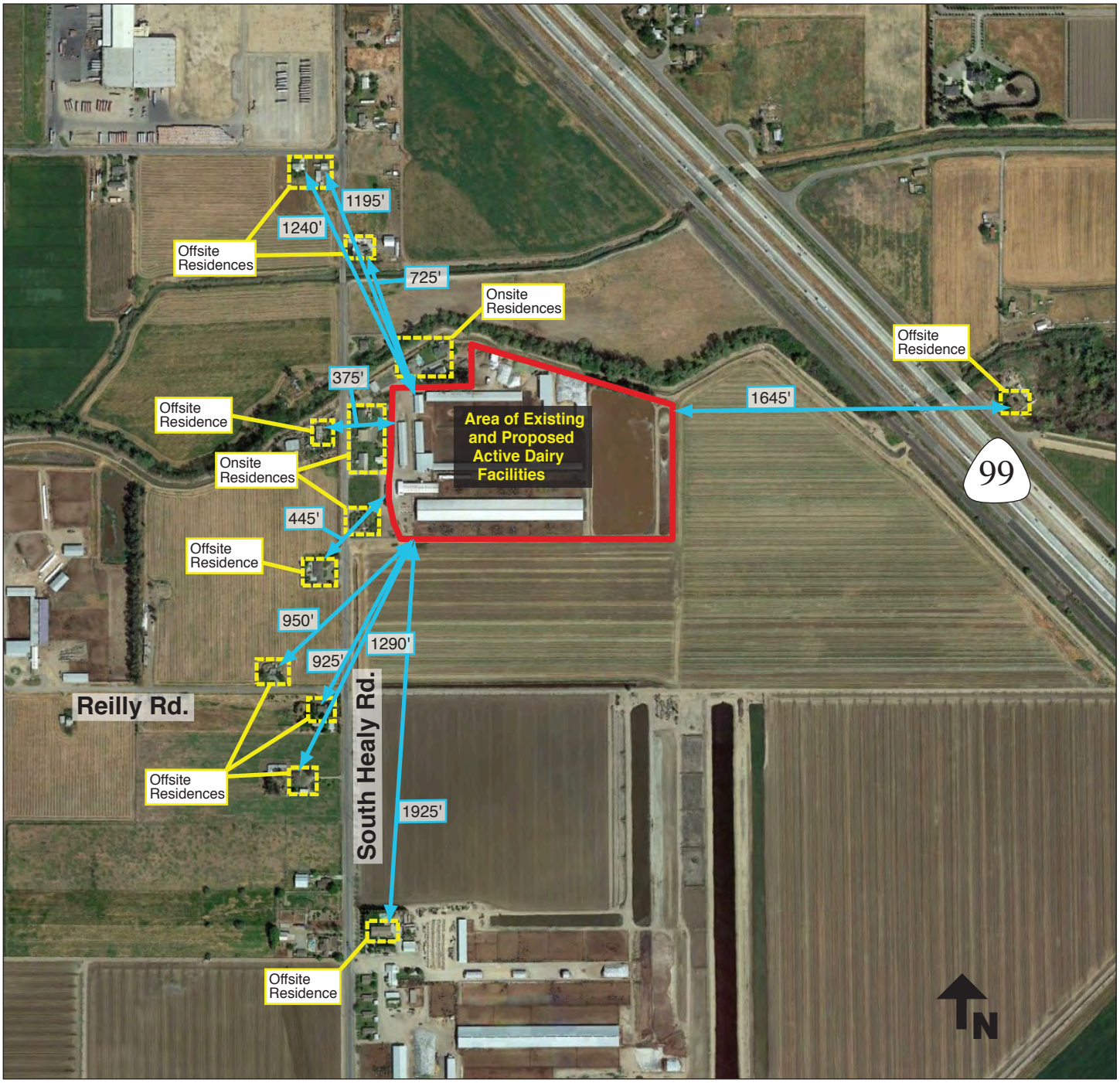


Nunes Dairy Project CUP16-001

SOURCE: Google Earth 2016; Planning Partners 2020

Figure 5

Active Dairy Facilities and Nearby Residences Located in the Windshed



Nunes Dairy Project CUP15-014

SOURCE: Google Earth 2016; Planning Partners 2016

Figure 6

Distance of Nearest Off-Site Residences to Existing and Proposed Active Dairy Facilities

Table 2 Surrounding Land Uses at the Nunes Dairy			
Location	**Land Use**	**General Plan**	**Zoning**
ON SITE	Dairy / Agriculture / Residences	Agricultural	General Agricultural A-1
NORTH	Agriculture / Residences / Owens and Miles Creek / SR 99	Agricultural	General Agricultural A-1
EAST	Agriculture / Residences / SR 99	Agricultural	General Agricultural A-1
SOUTH	Agriculture / Residences /Animal Confinement Facility	Agricultural	General Agricultural A-1
WEST	Agriculture / Residences /Animal Confinement Facility	Agricultural	General Agricultural A-1

Source: Project Site Visit, June 8, 2016; Project Applicant, May 2020.

There are Merced Irrigation District (MID) surface water canals within the vicinity of the project site, and the Koff Lateral is located immediately north of the project site. Both Owens Creek and Miles Creek are located north of the project site. State Route (SR) 99 runs diagonally from west to east along the eastern side of the project area (see Figure 2). The City of Merced is located approximately 0.7 miles from the active dairy facilities. The boundary of the Grasslands Focus Area is located directly south and west of the project area, and the Grasslands Ecological Area boundary is located approximately 0.6 miles south of active dairy facilities.

Project details such as adjacent land uses and cropping patterns could change over the course of evaluation, and from those existing at the time of this Initial Study. These changes, however, these changes would consist of agricultural and ancillary uses consistent with the 2030 Merced County General Plan, and would not affect the analysis contained in this Initial Study.

PROJECT CHARACTERISTICS

The project sponsor has applied for a new Conditional Use Permit (CUP16-001) from Merced County to modify the existing dairy to house 1,500 milk cows with a total of 2,100 animals (see Table 3). With the dairy modification, mature cows and calves would be increased, while heifer support stock would be removed from the dairy, resulting in an overall increase of 824 animals from existing numbers.

Table 3 Existing and Proposed Herd at the Nunes Dairy Expansion Project								
	Milk Cows	**Dry Cows**	**Bred Heifers (15-24 mo.)**	**Heifers (7-14 mo.)**	**Calves (4-6 mo.)**	**Calves (0-3 mo.)**	**Mature Bulls**	**Total Animals**
Existing	676	100	238	190	72	0	0	1,276
Proposed	1,500	300	0	0	150	150	0	2,100
Change	**824**	**200**	**-238**	**-190**	**78**	**150**	**0**	**824**

Note: This evaluation considers maximum buildout.

Source: Project Applicant, May 2016 and May 2020.

The proposed project would include the removal of 41,200 square feet of existing animal shelter structures and construction of one 85,800 square-foot freestall barn. All construction would occur in the existing footprint of the dairy.

With construction of the proposed facilities, cropped acreage would remain the same at 185± acres, and crops grown on site would continue to be used for dairy feed crops and supplement imported grain and hay. The number of silage piles would remain the same. See Figure 7 for the proposed dairy site plan. Figure 8 shows a cross-section of a freestall dairy barn and Figure 9 illustrates the processes that occur at a dairy farm.

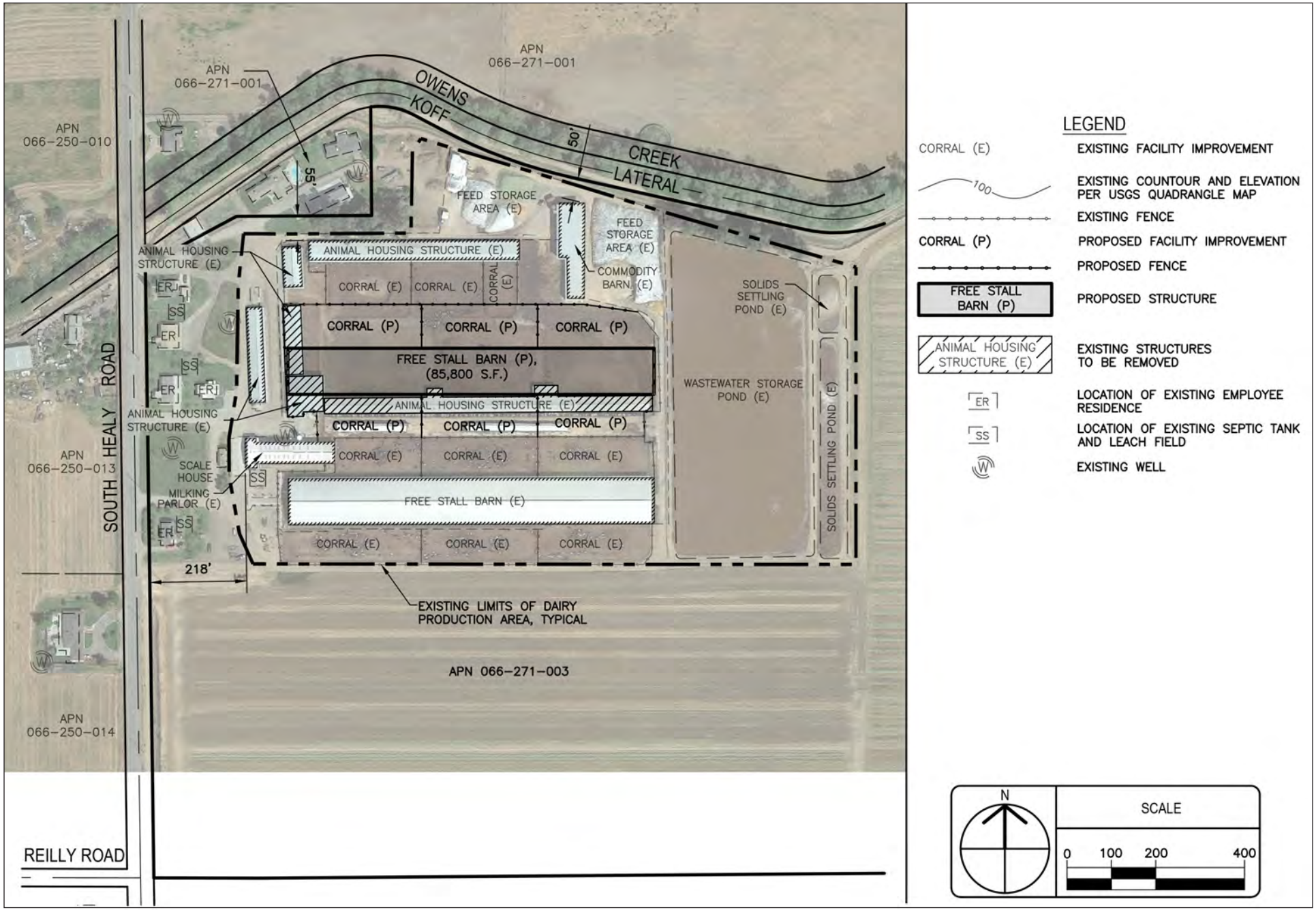
Animal wastes from freestall and other concrete-surfaced areas would continue to be flushed to an on-site waste management system, except for solid manure within corral areas, which would continue to be scraped. A sump and pump would be installed in the corral low point to collect wastewater and convey it to existing wastewater storage ponds. Liquid manure would continue to be directed to the settling basins and then treated in the wastewater storage pond.

Stormwater runoff from impervious surfaces and roofed areas would continue to be routed to the wastewater pond, except for rainwater from a barn roof, which would continue to be routed to a nearby yard. Wastewater would continue to be mixed with irrigation water and applied to the land. There would continue to be approximately 185 acres of cropland available for disposal of dairy wastewater and/or solid manure.

Solid manure that accumulates within corrals would continue to be removed two times per year. Dry manure would continue to be accumulated on site, then used for bedding or sold and hauled offsite for use as fertilizer and soil amendments. As reported in the NMP, approximately 8,200 tons of solid manure from separated solids (60 percent of previously separated solids) would be exported offsite with the proposed dairy expansion.

The proposed dairy expansion would rely on existing utilities, including domestic water, stormwater, and electrical services. No additional utilities would be required.

Operations at the dairy would continue to occur 24 hours per day, 365 days per year, with most operations concentrated during daylight hours. With implementation of the proposed project, the number of employees would increase from seven to approximately nine workers.

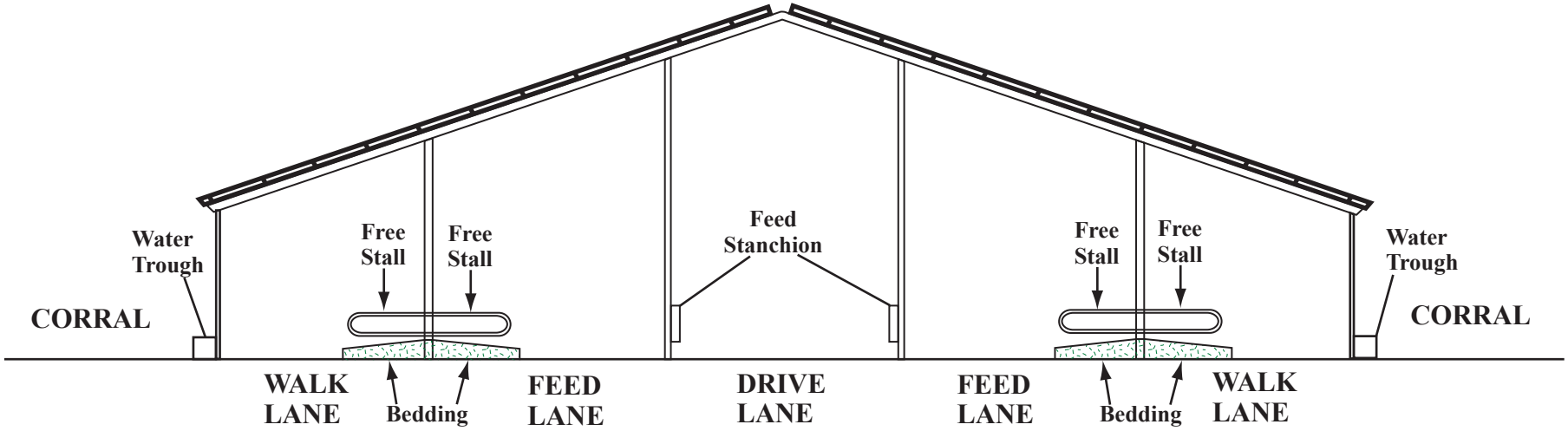


SOURCE: Sousa Engineering 2020

Nunes Dairy Project CUP16-001

Figure 7

Dairy Site Plan

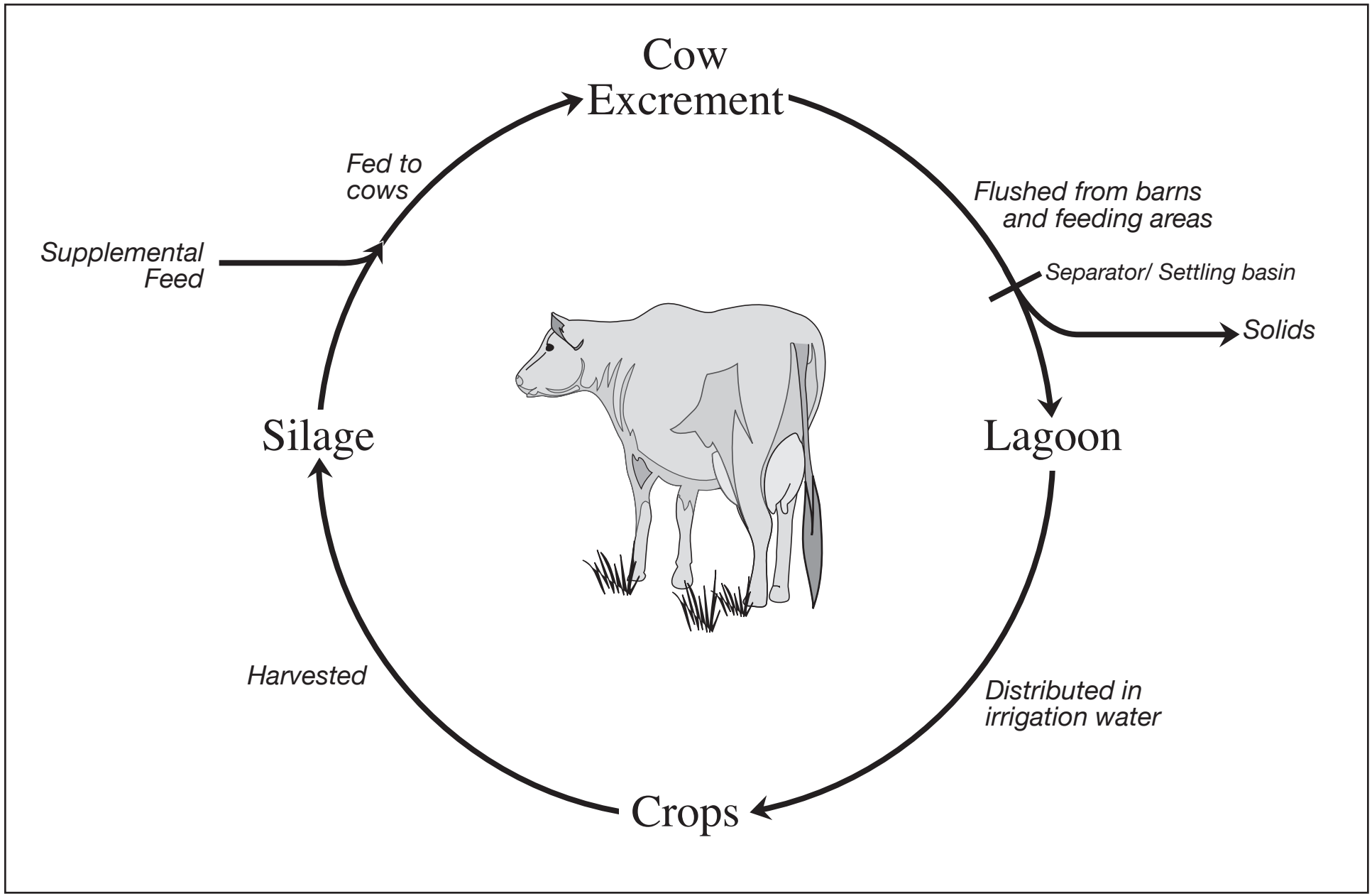


Nunes Dairy Project CUP16-001

SOURCE: Planning Partners 2020

Figure 8

Freestall Dairy Barn – Schematic Cross-Section



Nunes Dairy Project CUP16-001

SOURCE: Planning Partners 2020

Figure 9
Process Diagram

Circulation and Parking

The project site would continue to be served by heavy trucks (milk tankers, commodity deliveries), and other vehicles. Daily trips by all classes of vehicle are estimated to increase from approximately 21.2 to 30.9 average daily trips, with an increase of 9.7 daily trips, including 5.3 heavy truck trips per day (see Table 4). The majority of trips would consist of auto and light truck trips. All trips would continue to access Healy Road.

Table 4 Nunes Dairy Expansion Project Trip Generation and Assignment

Trip Type/Purpose	Daily Trip Generation Factor	Type of Vehicle	Daily Trips		Local Route of Trip
			Existing	With Project	
Residential Dwellings (on site)	2/residence *See Note 1	Auto/Light Truck	12	12	Healy Road.
Employees (offsite)	2/employee *See Note 2	Auto/Light Truck	2	6	Healy Road.
Milk Tanker	*See Note 3	Heavy Truck	2	6	Healy Road.
Commodities transport from offsite	*See Note 4	Heavy Truck	1	2	Healy Road.
Solid manure transport to offsite fields	*See Note 5	Heavy Truck	0.9	1.2	Healy Road.
Rendering Service	*See Note 6	Medium Truck	0.3	0.7	Healy Road.
Veterinarian	1/week	Light Truck	1	1	Healy Road.
Purveyor sales	2/facility office	Auto/Light Truck	2	2	Healy Road.
Total Auto/Light Truck Trips			**17**	**21**	
Total Medium Truck Trips			**0.3**	**0.7**	
Total Heavy Truck Trips			**3.9**	**9.2**	
Total Trips			**21.2**	**30.9**	

Notes: Trip Generation table based on Planning Partners assumptions and information obtained from project applicant.

1. There are five on-site employee residences located at the dairy facility. There are additional residences located on APN 066-271-001 owned by the project applicant. A trip generation factor of 2 trips per day for both the on-site residence and offsite employees is used for the dairy farm.
2. There are currently 7 employees. There would be 9 total employees with the proposed dairy expansion.
3. There are 14 milk tanker truck trips to the dairy per week, and there would be 42 per week with the proposed dairy expansion.
4. There are 7 commodity truck trips from offsite per week, and there would be 14 with the proposed dairy expansion.
5. Currently, approximately 330 diesel trucks export dry manure to offsite fields per year in the spring and fall; under proposed operations, approximately 440 diesel trucks would export dry manure to offsite fields per year.
6. There are approximately 2 truck trips per week for rendering service. There would be 5 truck trips per week with the proposed dairy expansion.

Source: Planning Partners, July 2016 and May 2020; Project Applicant, July 2016 and May 2020.

PROJECT CONSTRUCTION AND PHASING

Construction of the proposed dairy expansion is scheduled to begin approximately 3-5 years after project approval depending on market conditions.

PROJECT PERMITTING HISTORY

Merced County records indicate there are several permits on file for the project site, including land use entitlements for the dairy barn and 210 cows in 1972. The NMP indicates that the facility has been in operation since 1955.

To allow for the expansion of the dairy, the applicant has submitted an application for issuance of a new Conditional Use Permit (CUP16-001) from the County. It is this action that is the subject of this Initial Study. The CVRWQCB and the San Joaquin Valley Air Pollution Control District (SJVAPCD) both regulate the existing dairy. As responsible agencies, they will be required to use the County's environmental document in their consideration of the proposed dairy expansion.

The CVRWQCB regulates the existing dairy under the Reissued Waste Discharge Requirements General Order for Existing Milk Cow Dairies (Order R5-2013-0122). Coverage under the General Order requires approval and implementation of a NMP for the application of waste to land application areas, and a Waste Management Plan (WMP) to ensure proper compliance with the General Order (see Appendix B for a copy of the proposed conditions WMP and NMP). As established by the Report of Waste Discharge (ROWD) submitted for the existing dairy to the CVRWQCB in October 2005, the State-permitted herd size for the dairy is 776 milk and dry cows combined[2], with regulatory review required for expansions of greater than 15 percent above this value (892 milk and dry cows combined). The project applicant has submitted a Report of Waste Discharge for the proposed dairy expansion. To permit the proposed expansion, the CVRWQCB would be required to issue Individual Waste Discharge Requirements (WDR) for the operation.

The Permit to Operate (PTO) on file for the dairy facility (expiration date 12/31/2019) issued by the SJVAPCD allows 1,012 milk cows (not to exceed a combined total of 1,221 mature cows) and 979 support stock. An Authority to Construct (ATC) application would be required by the project applicant to modify the PTO from the SJVAPCD for the proposed dairy expansion. There is an existing Conservation Management Practices Plan (CMP) for the existing dairy, and the project does not include any changes to cropped acres.

ESTABLISHING THE PROPER "BASELINE" FOR THE PROPOSED DAIRY EXPANSION

To determine whether an impact is significant, a "baseline" set of environmental conditions is required against which agencies can assess the significance of project impacts. As established by California Environmental Quality Act (CEQA) Guidelines Section 15125(a)(1), the existing environmental setting, usually established at the time a Notice of Preparation is issued, should normally constitute the baseline, or if no notice of preparation is published, at the time environmental analysis is commenced. However, CEQA Guidelines Section 15125(a)(1) also allows that "[w]here existing conditions change or fluctuate over time, and where necessary to provide the most accurate picture practically possible of the project's impacts, a lead agency may define existing conditions by referencing historic conditions, or conditions expected when the project becomes operational, or both, that are supported with substantial evidence."

[2] The CVRWQCB regulates only mature cows (milk and dry) and does not establish any limits on calves, heifers, and other support stock.

In the case of the Nunes Dairy Expansion project, existing permits from the SJVAPCD and CVRWQCB allow for conflicting cow numbers, including a maximum of 1,221 mature cows and 892 mature cows, respectively. However, in accordance with CEQA, the baseline herd to be used in this environmental analysis is the herd count at the time that the Initial Study is circulated, comprising a total of 1,276 animals, including 676 milk cows.

REQUIRED APPROVALS, OTHER PROCESSES, AND CONSULTATIONS

A listing and brief description of the regulatory permits and approvals required to implement the proposed project is provided below. This environmental document is intended to address the environmental impacts associated with all of the following decision actions and approvals.

Merced County and Other Local and Regional Agencies

Merced County

The County has the following permitting authority related to the proposed Nunes Dairy Expansion project:

- Preparation and aapproval of an Initial Study / Mitigated Negative Declaration - Merced County will act as the lead agency as defined by the CEQA, and will have authority to determine if the IS/MND is adequate under CEQA.
- Approval of the Conditional Use Permit - Merced County will consider the proposed dairy project as a "Conditional Use Permit." Conditional Use Permits are discretionary permits for uses of land that require special review to ensure that they are compatible with the neighborhood and surrounding land uses. They are considered more likely to affect surrounding land uses than uses permitted by right in a zoning district or those uses permitted under Administrative Permits.
- Building Permit - Merced County will require a building permit for the proposed dairy expansion project.
- Demolition Permit - Merced County may require a demolition permit to remove the existing housing structures.
- Hazardous Material Business Plan (HMBP) - The on-site storage of any hazardous material over threshold quantities (55 gallons; 200 cu. ft.; or 500 pounds) would require a HMBP to be filed with the Merced County Division of Environmental Health (DEH). Any quantity of hazardous waste generated on site also requires that a HMBP be filed.
- A Vector Control Plan (dated November 2019) has been submitted to Merced County Department of Environmental Health.

San Joaquin Valley Air Pollution Control District

- Authority to Construct / Permit to Operate – The owner or operator of any facility or activity (including agricultural activities) that emits criteria air pollutants or their precursors above certain thresholds must first obtain an ATC from the SJVAPCD. All new sources exceeding thresholds will be required to apply for an ATC and PTO; this essentially is one permit that is issued in two steps. The applicant first obtains an ATC with specific conditions for implementation during construction; then an inspection is completed and, if all the conditions of the ATC are met during construction, the applicant is issued a PTO. Beyond the ATC and PTO, preparation of an air quality impact assessment (AQIA) would be required, in addition to compliance with other SJVAPCD regulations.

- Conservation Management Practices Plan – The owner or operator of any agricultural facility of 100 acres or more, or an animal confinement facility in excess of 500 mature cows (for a dairy operation), must have submitted a CMP plan to the SJVAPCD prior to June 30, 2004 for existing uses, and prior to operation for proposed uses. The project applicant may be required to submit a modification request to their existing CMP Plan based on their proposed dairy expansion. A CMP plan requires that farm operators implement dust reduction practices for each of the following categories: harvest; unpaved roads; unpaved equipment/vehicle yards; and, other. One CMP Plan must be submitted for each crop currently grown or that will be grown within the two-year time frame of each Plan.

State of California

State agencies have the following permitting authority related to the proposed Nunes Dairy Expansion project:

State Water Resources Control Board

- General Construction Activity – The State Water Resources Control Board (SWRCB) has adopted a General Construction Activity Storm Water Permit for storm water discharges associated with any construction activity, including clearing, grading, excavation, reconstruction, and dredge and fill activities, that results in the disturbance of at least one acre of total land area.

Regional Water Quality Control Board - Central Valley Region

- Waste Discharge Requirements – The owner or operator of any facility or activity that discharges, or proposes to discharge, waste that may affect groundwater quality or from which waste may be discharged in a diffused manner (e.g., erosion from soil disturbance) must first obtain a WDR permit from the CVRWQCB. The CVRWQCB regulates discharges from dairies and other confined animal facilities according to the anti-degradation requirements of the Porter-Cologne Water Quality Control Act and the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins. The project applicant has submitted a Report of Waste Discharge for the proposed dairy expansion. The CVRWQCB will be issuing Individual WDRs for the Nunes Dairy Expansion.

Federal Government

It is anticipated that no permitting from federal agencies would be required.

APPLICATION OF THE 2030 MERCED COUNTY GENERAL PLAN, MERCED COUNTY ANIMAL CONFINEMENT ORDINANCE, AND MERCED COUNTY ZONING CODE

2030 Merced County General Plan

The 2030 Merced County General Plan guides economic development, land use, agriculture, transportation and circulation, public facilities and services, natural resource, recreation and cultural resources, health and safety, air quality, water, and other matters of public interest and concern. The General Plan is intended to provide for orderly growth, and to convey the community's values and

expectations for the future. An EIR for the 2030 General Plan was certified and the General Plan was adopted by Merced County in December 2013. A Draft Background Report of existing environmental conditions within the County was finalized in December 2013 with certification of the General Plan EIR. The Background Report functions as the existing setting section for the General Plan EIR. The EIR, including the Background Report as updated, is used in this Initial Study, along with other resources, to establish the existing setting for the proposed project. The General Plan EIR will serve as the first tier of environmental analysis for the proposed project, including the evaluation of countywide and cumulative impacts. The 2030 General Plan EIR, including the Background Report, is hereby incorporated by reference pursuant to State CEQA Guidelines Section 15150 as though fully set forth herein. A copy of the General Plan, General Plan EIR, and Background Report can be obtained at the Department of Community and Economic Development, 2222 "M" Street, Merced, CA 95340. These documents are also available for download from the Merced County General Plan website at:

http://www.co.merced.ca.us/index.aspx?NID=1170

Merced County Animal Confinement Ordinance and Zoning Code

On October 22, 2002, Merced County adopted revisions to the County's Animal Confinement Ordinance (ACO). Additional revisions to the Merced County ACO and Merced County Code Chapter 18.02.02 (Zoning Code Agricultural Zones) were adopted on February 8, 2005 (the text of the ACO is included in Appendix A, bound separately). (The Merced County ACO is included as a section of Title 18 Zoning of the Merced County Code.) The ACO regulates the design, construction, and operation of animal confinement facilities within the county. Because the Ordinance is regulatory rather than permissive, all existing and proposed animal confinement facilities within the county are required to comply with the terms of the Ordinance, including the proposed Nunes Dairy Expansion project.

Following is a summary of major ACO provisions. Copies of the complete text of the Ordinance are available from: the Merced County Division of Environmental Health, 260 East 15th Street, Merced, California 95341; the Merced County Community and Economic Development Department, 2222 'M' Street, Merced, California 95340, and on the County's Internet site at <http://www.qcode.us/codes/mercedcounty/>

Merced County's ACO provides environmental compliance regulations that affect dairies and other animal confinement facilities in Merced County. The ACO requires that all animal confinement facilities, existing and new, complete and implement a Comprehensive Nutrient Management Plan (CNMP). For the construction of a new confined animal facility, or for modification or expansion of an existing animal confinement facility, the CNMP must be completed prior to construction. The purpose of the CNMP is to ensure a balance between manure/wastewater application and nutrient uptake by crops in order to minimize impacts to groundwater. Since adoption of the ACO, the CVRWQCB has issued new requirements for preparation of a NMP and WMP, which would serve in place of the CNMP as allowed by County Code Chapter 18.64.060K.

In addition to the CNMP, the ACO includes measures designed to increase protection of surface and groundwater resources. Both liquid and dry manure are regulated by the ACO under detailed management requirements. For example, the ACO prohibits the storage or application of manure (liquid or dry) within 100 feet of a surface water body or irrigation well unless adequate protection is provided. Dry manure storage and application is regulated to prevent groundwater or surface water

contamination. In addition, the liquid manure management system must include provisions for appropriate cropland application and collection of tailwater from cropland irrigated with liquid manure. The ACO requires that all off-site discharge of drainage water from cropland application areas meet the discharge and receiving water standards of the appropriate irrigation or drainage district and the CVRWQCB.

The ACO also includes design and management provisions for the construction of retention ponds and settling basins to prevent groundwater contamination, obnoxious odors, or excessive fly or mosquito breeding. The retention pond provisions of the ACO apply only to new or expanding animal confinement facilities. The ACO measures for retention ponds and settling basins include capacity requirements, maintenance guidelines, size restrictions, and minimum design standards of 10^{-6} centimeters per second seepage velocity or less.

To prevent nuisances from odors or vectors, the ACO requires animal confinement facilities to implement both odor control measures and a vector control plan. The need for specific control measures is determined by the Merced County DEH on a site-specific basis. Additionally, the ACO prohibits the location of new animal confinement facilities within one-half mile of urban areas or areas zoned for residential uses, or concentrations of rural residences. To provide additional protection from the nuisances mentioned above, the ACO generally prohibits the location of animal confinement facilities within 1,000 feet of an off-site residence, unless written permission from the off-site resident or property owner is given.

The ACO regulates the design, construction, and operation of animal confinement facilities within the County; all existing and proposed animal confinement facilities within the County are required to comply with the terms of the Ordinance, including the Nunes Dairy Expansion project. To ensure compliance with the provisions of the ACO, the Ordinance requires routine inspections of animal confinement facilities by Merced County DEH. Enforcement of the provisions contained in the revised ACO is conducted by Merced County DEH and the Community and Economic Development Department. In addition, the ACO includes penalties for any person who violates or fails to comply with the provisions of the ACO.

Merced County Animal Confinement Ordinance Revision EIR

The Merced County Board of Supervisors certified the EIR and adopted the revised ACO on October 22, 2002 (SCH #2000072024). The environmental conclusions of the 2002 EIR were subsequently reconfirmed in an Addendum to the EIR prepared and certified by the County on February 8, 2005. The ACO EIR comprehensively evaluated the potential environmental effects of implementing the revisions to the ACO and from approval of new or expanding animal confinement facilities. The ACO EIR identified a number of mitigation measures that would reduce the magnitude of these potential effects. Those measures were subsequently adopted by the County as conditions of approval for the revisions to the ACO, and a Mitigation Monitoring Program was adopted. Because the Nunes Dairy Expansion project is subject to the requirements of the ACO for new and expanding animal confinement facilities, those previously adopted mitigation measures and conditions apply to the Nunes Dairy Expansion project, and would continue to apply after approval of the currently requested actions.

The EIR for the ACO Revision contains a comprehensive analysis of environmental effects for new and expanding animal confinement facilities in Merced County, including a cumulative analysis through the year 2010 herd forecast conditions. The 2030 General Plan EIR updated and expanded the environmental analyses and conclusions presented in the 2002 ACO EIR regarding the cumulative condition for all project types, including proposed and expanding dairy facility projects such as the Nunes Dairy Expansion project. Because of its importance relative to understanding the environmental analysis that has occurred to date with respect to the potential environmental impacts associated with the construction and operation of animal confinement facilities in Merced County, the ACO EIR is hereby incorporated by reference pursuant to State CEQA Guidelines Section 15150 as though fully set forth herein. A copy of the ACO EIR can be reviewed at the Merced County Division of Environmental Health (DEH), 260 East 15th Street, Merced, California 95341.

TIERING FROM BOTH THE 2030 MERCED COUNTY GENERAL PLAN EIR AND THE MERCED COUNTY ANIMAL CONFINEMENT ORDINANCE EIR

"Tiering" refers to the relationship between a program-level EIR (where long-range programmatic cumulative impacts are the focus of the environmental analysis) and subsequent environmental analyses such as this subject document, which focus primarily on issues unique to a smaller project within the larger program or plan pursuant to Section 15168 of the State CEQA Guidelines. Through tiering, a subsequent environmental analysis can incorporate, by reference, discussion that summarizes general environmental data found in the program EIR that establishes cumulative impacts and mitigation measures, the planning context, and/or the regulatory background. These broad-based issues need not be reevaluated subsequently, having been previously identified and evaluated at the program stage.

Tiering focuses the environmental review on the project-specific significant effects that were not examined in the prior environmental review or are susceptible to substantial reduction or avoidance by specific revisions in the project, by the imposition of conditions, or by other means. Section 21093(b) of the Public Resources Code requires the tiering of environmental review whenever feasible, as determined by the Lead Agency.

In the case of the Nunes Dairy Expansion project, the environmental analysis for this Initial Study is tiered from the EIR for the 2030 Merced County General Plan. The Merced County Board of Supervisors certified the EIR and adopted the 2030 General Plan on December 10, 2013 (SCH #2011041067). The 2030 General Plan regulates the location, use, design, construction, and operation of developed land uses within the County; all existing and proposed land uses within the County are required to comply with the goals and policies of the 2030 General Plan, including the Nunes Dairy Expansion project. To reflect this, the requirements of the 2030 General Plan and conclusions of the environmental analysis contained in the 2030 General Plan EIR were incorporated into this Initial Study.

The 2030 General Plan EIR comprehensively evaluated the potential environmental effects of implementing the 2030 General Plan and from the approval of new or modified land uses. The 2030 General Plan EIR identified a number of mitigation measures that would reduce the magnitude of these potential effects. Those measures were subsequently adopted by the County in its approval of the 2030 General Plan, and a Mitigation Monitoring and Reporting Program was adopted. Because the Nunes Dairy Expansion project is consistent with, and implements, the 2030 General Plan, those previously adopted mitigation measures and conditions apply to the Nunes Dairy Expansion

project, and would continue to apply after approval of the currently requested actions. Therefore, the Nunes Dairy Expansion project is related to the 2030 General Plan EIR and, pursuant to Section 15152(a) of the CEQA Guidelines, tiering of environmental documents is appropriate.

The 2030 General Plan EIR can be reviewed at the location set forth above.

Incorporation of the 2030 Merced County General Plan EIR By Reference

Based on the reasoning set forth above, this environmental evaluation implements, and is consistent with, the environmental conclusions, mitigation measures, and study protocols adopted by Merced County in its certification of the 2030 General Plan EIR and its approval of the 2030 Merced County General Plan. Because of its importance relative to understanding the environmental analysis that has occurred to date with respect to the potential environmental impacts associated with the construction and operation of developed land uses in Merced County, the 2030 General Plan EIR is hereby incorporated by reference pursuant to CEQA Guidelines Section 15150 as though fully set forth herein.

Summary of the Impacts Analysis of the 2030 Merced County General Plan EIR

The 2030 Merced County General Plan EIR presents an assessment of the environmental impacts associated with the implementation of the General Plan and land uses developed consistent with the Plan in Merced County. The EIR evaluated the environmental impacts of the Plan on a comprehensive basis, including discussion of the full range of impacts that would occur because of future development. The EIR identified potential significant environmental impacts arising from implementation of the General Plan and land uses developed consistent with the Plan for the following issue areas:

Aesthetics: light and glare; and cumulative impacts to visual quality.

Agriculture and Forestry: conversion of Important Farmland to non-agriculture use; conflict with zoning for agricultural use or provisions of the Williamson Act; land use changes that would result in conversion of farmland to non-agricultural uses from urban development; land use changes that would result in conversion of farmland to non-agricultural uses due to the Minor Subdivision of Rural Parcels or due to inadequate parcel sizes; and cumulative impacts to agricultural resources.

Air Quality: operational emissions of PM_{10} and $PM_{2.5}$ associated with General Plan buildout; health risks associated with locating sensitive receptors near high volume roads; cumulative impacts to air quality.

Biological Resources: adverse effects to special status species and sensitive habitats due to conversion of farmlands and open space; adverse effect on wetlands, riparian habitat, and other sensitive natural communities; loss or modification of federally protected wetlands; interference with animal movement/migration patterns; cumulative impacts to biological resources.

Cultural Resources: adverse changes to the significance of a historical resource; adverse change in the significance of archaeological resources, paleontological resources, unique geological features, or disturbances to human remains; degradation or loss of traditional cultural properties where Native American customs and traditions are practiced; cumulative impacts to cultural resources.

Geology: use of septic tanks or alternative wastewater disposal systems in unfit soils that may result in increased nutrients or other pollutants reaching and damaging groundwater resources.

Global Climate Change: increase in GHG emissions associated with 2030 General Plan buildout; increase in GHG emissions that would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions; cumulative impacts to global climate change.

Hazards and Hazardous Materials: projects located on a site that is included on a list of hazardous materials sites resulting in a significant hazard to the public or to the environment; projects located within an airport land use plan or within the vicinity of a public or private airport resulting in a safety hazard for people working or residing in the area.

Hydrology and Water Quality: depletion of groundwater supplies or interference with groundwater recharge; modification of surface water drainage patterns resulting in detrimental flooding or substantial erosion or siltation; cumulative impacts to hydrology and water quality.

Land Use Compatibility: physical division of an established community.

Mineral Resources: loss of mineral resources; and cumulative loss of mineral resources.

Noise: permanent increase in ambient noise levels; traffic noise level increases at existing sensitive uses caused by development consistent with the 2030 General Plan; exposure of people to, or generation of excessive groundborne vibration or groundborne noise levels; cumulative impacts to noise.

Population and Housing: inducement of population growth, directly or indirectly.

Transportation and Circulation: conflict with an applicable plan, ordinance or policy establishing measures of effectiveness of county roads, State Highways, or streets within incorporated cities in Merced County; increase hazards due to a design feature or incompatible uses; inadequate emergency access; conflict with policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or decrease the performance or safety of those facilities; cumulative impacts to transportation and circulation.

Utilities and Service Systems: sufficient water supply resources available to accommodate continued development through buildout of the 2030 General Plan; cumulative impacts to utilities and service systems.

Other CEQA Topics: cumulative impacts to growth inducement and irreversible environmental changes.

2. ENVIRONMENTAL ANALYSIS

PURPOSE AND LEGAL BASIS FOR THE INITIAL STUDY

As a public disclosure document, this Initial Study provides local decision makers and the public with information regarding the environmental impacts associated with the proposed project. According to Section 15063 of the CEQA Guidelines, the purpose of an Initial Study is to:

1. Provide the Lead Agency with information to use as the basis for deciding whether to prepare an EIR or a Negative Declaration.
2. Enable an applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a Negative Declaration.
3. Assist in the preparation of an EIR, if one is required by:
    a. Focusing the EIR on the effects determined to be significant,
    b. Identifying the effects determined not to be significant,
    c. Explaining the reasons for determining that potentially significant effects would not be significant, and
    d. Identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project's environmental effects.
4. Facilitate environmental assessment early in the design of a project.
5. Provide documentation of the factual basis for the finding in a Negative Declaration that a project will not have a significant effect on the environment.
6. Eliminate unnecessary EIRs.
7. Determine whether a previously prepared EIR could be used with the project.

INITIAL ENVIRONMENTAL CHECKLIST

Following each major environmental category and topic in the Initial Study, there are four determinations by which to judge the project's impact. These categories and their meanings are shown below:

"No Impact" means that it is anticipated that the project will not affect the physical environment on or around the project area. It therefore does not warrant mitigation measures.

"Less-than-significant Impact" means the project is anticipated to affect the physical environment on and around the project area, however to a less-than-significant degree, and therefore not warranting mitigation measures.

"Less-than-significant Impact with Mitigation Incorporated" applies to impacts where the incorporation of mitigation measures into a project has reduced an effect from "Potentially Significant" to "Less Than Significant." In such cases, and with such projects, mitigation measures will be provided including a brief explanation of how they reduce the effect to a less-than-significant level.

"Potentially Significant Impact" means there is substantial evidence that an effect is significant, and no mitigation is possible.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, including several impacts that are "Less-than-significant Impact with Mitigation Incorporated" as indicated by the checklist on the following pages.

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

ENVIRONMENTAL SETTING AND EVALUATION OF POTENTIAL IMPACTS

Responses to the following questions and related discussion indicate whether or not the proposed project would have or would potentially have a significant adverse impact on the environment, either individually or cumulatively with other projects. All phases of project planning, implementation, and operation are considered. Mandatory Findings of Significance are located in Section XXI below.

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

ENVIRONMENTAL SETTING

The primary scenic resource within Merced County is the rural and agricultural landscape of non-urbanized areas of the county. The project site is currently in agricultural use (agricultural crops and an existing dairy) and surrounded by agricultural uses and associated residences. Due to the relatively flat topography, short- and mid-range views are limited to agricultural uses, including pasture and row crops.

The site appearance is one of a developed animal confinement facility within a rural, agricultural setting. Viewers outside the project site are limited to motorists on perimeter roadways, including State Route 99, and residents of surrounding agricultural facilities and operations. Neither the project site nor the views to or from the site have been designated as an important scenic resource by Merced County or any other public agency. No state or locally designated scenic highway has been identified in the vicinity of the project site (Merced County 2013a).

ENVIRONMENTAL EVALUATION

Question (a) Scenic vista: No Impact. Given the lack of distinctive topographical features in the project vicinity, the project site is not located in an area with scenic vistas. The agricultural-related facilities and associated residences in the vicinity are existing uses, and are considered common to the area. The proposed project would be an expansion of that existing use. No designated scenic vista is visible from the project site, nor is the site visible from any nearby scenic vista. Because the proposed dairy modification would not affect a scenic vista, no impact would result with implementation of the project, and no mitigation would be required.

Question (b) Scenic resources: No Impact. No state- or locally-designated scenic highway is visible from the project site, nor is the site visible from any nearby designated scenic highway. The nearest designated State Scenic Highway, Interstate 5, is approximately 37 miles to the west of the project site. Because the project site is not located within the viewshed of a designated scenic highway, there would be no damage to scenic resources within a scenic highway. No impact would result with implementation of the dairy modification project, and no mitigation would be required.

Question (c) Visual character: Less-than-significant Impact. Developed agricultural facilities in the vicinity range from irrigated cropland to animal confinement facilities. Though the existing dairy facilities are visible from perimeter roads and State Highway 99, their appearance is a common sight in rural areas of Merced County, and the visual effects of the animal confinement facilities are reasonable and expected in the context of the County's Agricultural land use designation. The modified dairy facilities would appear similar to existing uses on the project site and in the project area, and would be considered common and appropriate to the region by most viewers. Since the proposed project is consistent with the existing and planned agricultural uses of the area, implementation of the project would not degrade the existing visual character of the site or surroundings. This would be a less-than-significant impact, and no mitigation would be required.

Question (d) New source of light or glare: Less-than-significant Impact. Existing night lighting in the area of active dairy facilities includes building-mounted dawn-to-dusk lights on the animal shelters and the milk barn. While there are residences in the vicinty of active dairy operations, which are considered sensitive receptors for nighttime light and glare, County standards require that all new lighting be directed away from or be properly shaded to eliminate light trespass or glare within a project or onto surrounding properties. Compliance with County requirements would reduce any light and glare effects to less-than-significant levels, and no mitigation would be required.

II. AGRICULTURE AND FORESTRY RESOURCES

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

ENVIRONMENTAL SETTING

The project area consists of an active animal confinement facility operation, including active dairy facilities and dairy farm cropland, and is surrounded by similar agricultural uses and associated residences. The site is designated Agricultural by the 2030 Merced County General Plan and is zoned A-1 (General Agricultural). None of the project parcels are subject to a Williamson Act Contract (Merced County 2020).

According to the California Department of Conservation's (DOC) Important Farmlands Map[1] of Merced County, the area of existing and proposed active dairy facilities is designated as Confined Animal Agriculture. As defined by the DOC, this designation includes poultry facilities, feedlots, dairy facilities, and fish farms. Associated crop fields in the project area are designated as Prime Farmland and Farmland of Statewide Importance. (DOC 2016)

Merced County has no areas identified in the Zoning Code as forest land, timberland, or Timberland Production (Merced County 2020). There are no forest land or timberland resources located in Merced County (CDFW 2015).

ENVIRONMENTAL EVALUATION

Question (a) Convert farmland to non-agricultural use: Less-than-significant Impact. The area of existing and proposed active dairy facilities is located on land that is classified as Confined Animal Agriculture. The project area is designated for agricultural use by the 2030 Merced County General Plan. The proposed dairy modification would represent a continuation of existing

[1] The Important Farmland Map uses a classification system that combines technical soil ratings from the Natural Resources Conservation Service digital soil data and current land use. The minimum land use mapping unit is 10 acres unless specified.

agricultural uses. Construction of the proposed improvements to the existing active dairy would not result in the conversion of agricultural land to a non-agricultural use. Because the project site would be maintained in agricultural use, and because construction of the proposed facilities would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use, a less-than-significant impact would result. No mitigation would be required.

Question (b) Conflict with zoning for agricultural use: Less-than-significant Impact. The 2030 Merced County General Plan and Zoning Ordinance designate the project area for agricultural uses. None of the project parcels are currently under a Williamson Act Contract. The existing use, a dairy, is an agricultural use consistent with the General Plan and Zoning Ordinance. Adjacent properties include agricultural uses, primarily field crops and animal confinement facilities. No feature of the proposed dairy modification project would preclude or limit the agricultural use of the project site or adjoining parcels. Thus, the proposed project would permit the continuation of existing agricultural uses consistent with County policies, and would not conflict with adjacent agricultural and/or non-agricultural uses. A less-than-significant impact would result, and no mitigation would be required. For a discussion of project compatibility with adjacent residential uses, see Section XI, *Land Use and Planning* of this Initial Study.

Questions (c) through (e) Conflict with zoning for or loss of farmland, forest land, or timber land: No Impact. The project site is not zoned for forest land or timberland, and there are no forest or timber resources located on the project site. Thus, there would be no loss of forest land or timberland, nor conversion of forest land to non-forest use. The proposed facilities would not result in any change to the existing environment that could result in the conversion of farmland to non-agricultural use. Because the proposed project would not conflict with any existing forest land or timberland production zoning, and no changes associated with the project are proposed that would result in the conversion of existing farmland, forest land, or timber lands, no impact would occur. No mitigation would be required.

III. AIR QUALITY

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?		**X**		
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?		**X**		
c) Expose sensitive receptors to substantial pollutant concentrations?			**X**	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?		**X**		

ENVIRONMENTAL SETTING

Air quality influences public health and welfare, the economy, and quality of life. Air pollutants have the potential to adversely impact public health, the production and quality of agricultural crops, visibility, native vegetation, and buildings and structures.

Criteria pollutants are those that are regulated by either the state or federal Clean Air Acts. Non-criteria pollutants are not regulated by these Acts, but are a concern as precursors to criteria pollutants and/or for their potential for harm or nuisance.

The criteria pollutants of most interest in the San Joaquin Valley associated with dairy sources are ozone and particulates (dust). Ozone is not emitted directly into the environment; rather, it is generated from complex chemical reactions in the presence of sunlight between reactive organic gases (ROG) (or non-methane hydrocarbons), and oxides of nitrogen (NO_X). Ozone is a powerful respiratory irritant. Particulate matter is classified as respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$). Exposure to elevated levels of particulate matter causes irritation of the eyes and respiratory system, and exposure is implicated in increased levels of disease and death.

Important non-criteria pollutants include air toxics. Air toxics are generated from industrial processes (e.g., gas stations, dry cleaners, or car repairs), mobile sources using diesel engines, and agricultural sources.

REGULATORY FRAMEWORK

The U.S. Environmental Protection Agency (EPA) has set National Ambient Air Quality Standards (NAAQS) for ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, respirable particulate matter (PM_{10}), and airborne lead. Similarly, the California Air Resources Board (ARB) has established California Ambient Air Quality Standards (CAAQS) to protect public health and welfare. CAAQS for criteria pollutants equal or surpass NAAQS, and include other pollutants for which there are no NAAQS. The ARB is responsible for control program oversight activities, while regional Air Pollution Control Districts and Air Quality Management Districts are responsible for air quality planning and enforcement. The ARB is also responsible for assigning air basin attainment and non-attainment designations for state criteria pollutants.

Under the federal Clean Air Act, state and local agencies in areas that exceed the NAAQS are required to develop state implementation plans (SIP) to show how they will achieve the NAAQS for ozone and particulate matter by specified dates (42 USC 7409, 7411). The EPA's responsibility to control air pollution in individual states is primarily to review submittals of SIPs that are prepared by each state.

The dairy facility expansion project site is located within the San Joaquin Valley Air Basin in Merced County. Under both the federal and state CAAs, the San Joaquin Valley Air Pollution Control District (SJVAPCD) regulates air quality in Merced County. The SJVAPCD has jurisdiction over all point and area sources of air emissions except for mobile sources (such as motor vehicles), consumer products, and pesticides. To improve the health and air quality for Valley residents, the SJVAPCD implements air quality management strategies and enforces its Rules and Regulations. The SJVAPCD and the ARB have joint responsibility for attaining and maintaining the NAAQS and CAAQS in the SJVAB.

Ambient air quality is described in terms of compliance with state and national standards, and the levels of air pollutant concentrations considered safe to protect the public health and welfare. These standards are designed to protect people most sensitive to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. CAAQS and NAAQS are listed in Table 5.

Table 5 Federal and California Ambient Air Quality Standards and Attainment Status

Pollutant	Averaging Time	California Standards Concentration	Federal Primary Standards Concentration
Ozone (O_3)	8-hour	0.07 ppm (137 μg/m^3)	0.070 ppm (137 μg/m^3)
	1-hour	0.09 ppm (180 μg/m^3)	---
Respirable Particulate Matter (PM_{10})	24-hour	50 μg/m^3	150 μg/m^3
	Annual Arithmetic Mean	20 μg/m^3	---
Fine Particulate Matter ($PM_{2.5}$)	24-hour	---	35 μg/m^3
	Annual Average	12 μg/m^3	12 μg/m^3
Carbon Monoxide	8-hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
Nitrogen Dioxide	Annual Average	0.03 ppm (57 μg/m^3)	0.053 ppm (100 μg/m^3)
	1-hour	0.18 ppm (339 μg/m^3)	0.100 ppm (188 μg/m^3)
Lead	30 day Average	1.5 μg/m^3	---
	Rolling 3-Month Average	---	0.15 μg/m^3
	Quarterly Average	---	1.5 μg/m^3
Sulfur Dioxide	24-hour	0.04 ppm (105 μg/m^3)	0.14 ppm (for certain areas)
	3-hour	---	---
	1-hour	0.25 ppm (655 μg/m^3)	0.075 ppm (196 μg/m^3)
Sulfates	24-hour	25 μg/m^3	No Federal Standard
Hydrogen Sulfide	1-hour	0.03 ppm (42 μg/m^3)	No Federal Standard
Vinyl Chloride	24-hour	0.01 ppm (26 μg/m^3)	No Federal Standard

Notes: ppm = parts per million; mg/m^3 = milligrams per cubic meter; μg/m^3 = micrograms per cubic meter

Shaded areas indicate that Merced County is in non-attainment for that air pollutant standard

Source: ARB 2019, EPA 2020, EPA 2019.

State and national air quality standards consist of two parts: an allowable concentration of a pollutant, and an averaging time over which the concentration is to be measured. Allowable

concentrations are based on the results of studies on the effects of the pollutants on human health, crops and vegetation, and, in some cases, damage to paint and other materials. The averaging times are based on whether the damage caused by the pollutant is more likely to occur during exposures to a high concentration for a short time (i.e., one hour), or to a relatively lower average concentration over a longer period (i.e., eight hours, 24 hours, or one month). For some pollutants, there is more than one air quality standard, reflecting both its short-term and long-term effects.

The ARB is required to designate areas of the state as attainment, non-attainment, or unclassified for any state standard. An "attainment" designation for an area signifies that pollutant concentrations do not violate the standard for that pollutant in that area. A "non-attainment" designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An "unclassified" designation signifies that data does not support either an attainment or non-attainment status. An area where the standard for a pollutant is exceeded is considered to be in non-attainment and is subject to planning and pollution control requirements that are more stringent than normal requirements. The California Clean Air Act (CCAA) divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category. Of the criteria pollutants, the project area is in non-attainment for federal and state ozone, state PM_{10}, and state and federal $PM_{2.5}$ standards (see Table 5 above) (ARB 2019, EPA 2020, EPA 2019). Concentrations of all other pollutants meet state and federal standards. The SJVAPCD is required to enact plans designed to bring the basin back to attainment status for ozone and $PM_{2.5}$.

Odors

No state laws exist for odor emissions; regulation is achieved through County ordinances, and enforced based upon complaints. Merced County uses a setback approach to odor nuisance control, requiring setbacks between animal confinement facilities and other uses of 0.5 mile for urban areas and sensitive uses, and 1,000 feet for isolated rural residences. If the specified uses are within the setback distances, the County presumes an increased potential for odor nuisance conditions, though it relies on a record of odor complaints to confirm nuisance conditions. The Merced County Code also includes a Right-to-Farm Ordinance (Chapter 17.08.080(H)) that seeks to reduce the opposition of residential neighbors to nuisances created by commercial farming, such as odors.

Criteria Air Pollutants

Ozone is not emitted directly into the environment, but is generated from complex chemical reactions between reactive organic gases (ROG), or non-methane hydrocarbons, and oxides of nitrogen (NO_X) that occur in the presence of sunlight. ROG and NO_X generators in Merced County include motor vehicles, recreational boats, other transportation sources, and industrial processes. Ozone exposure causes 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. Research also shows that children exposed to unhealthful levels of ozone suffer decreased lung function growth and increased asthma.

PM_{10}, or inhalable particulate matter, is a complex mixture of primary or directly emitted particles, and secondary particles or aerosol droplets formed in the atmosphere by precursor chemicals. The main sources of fugitive dust are unpaved roads, paved roads, and construction. Additional sources of PM_{10} include fires, industrial processes, mobile sources, fuel combustion, agriculture, miscellaneous sources, and solvents. Health studies link particulate pollution to sudden death in

infants as well as adults with heart and lung ailments, shortening lives by years. Exposure to airborne particles also aggravates respiratory illnesses like asthma, bronchitis, emphysema, and pneumonia.

$PM_{2.5}$ is atmospheric particulate matter having a particle size less than 2.5 microns (μm) in diameter. These particles are so small they can be detected only with an electron microscope. Sources of fine particles include all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes. These small particles can be inhaled into the lungs and have the potential to cause health-related impacts in sensitive persons.

Air Quality Monitoring

The SJVAB's air quality monitoring network provides information on ambient concentrations of air pollutants. The SJVAPCD operates several monitoring stations in the SJVAB, including two stations in Merced County, where the air quality data for ozone, $PM_{2.5}$, and PM_{10} were obtained. Table 6 compares a five-year summary of the highest annual criteria air pollutant emissions collected at these monitoring stations with applicable CAAQS, which are more stringent than the corresponding NAAQS. Due to the regional nature of these pollutants, ozone, $PM_{2.5}$, and PM_{10} are expected to be fairly representative of the project site.

As shown in Table 6, the O_3, $PM_{2.5}$ and PM_{10} federal and state standards have been exceeded in Merced County over the past five years, with the exception of the federal PM_{10} standard, which was not exceeded.

Table 6 Annual Air Quality Data for Merced County Air Quality Monitoring Stations

Pollutant	2014	2015	2016	2017	2018**
Ozone (O_3) 1-hour: *Monitoring location: Merced County – S Coffee Avenue*					
Maximum Concentration (ppm)	0.100	0.102	0.097	0.093	0.104
Days Exceeding State Standard (1-hr avg. > 0.09 ppm)	3	2	2	0	4
Ozone (O_3) 8-hour: *Monitoring location: Merced County – S Coffee Avenue*					
Maximum Concentration (ppm)	0.088	0.089	0.086	0.084	0.083
Days Exceeding State Standard (8-hr avg. > 0.070 ppm)	40	29	28	16	21
Days Exceeding National Standard (8-hr avg. > 0.075 ppm)	22	14	13	8	7
PM_{10}: *Monitoring location: Merced County – 2334 M Street*					
Days Exceeding State Standard (Daily Standard 50 μg/m³)	*	31.8	38.9	76.6	59.6
Maximum State 24-Hour Concentration (μg/m³)	92.7	94.0	64.5	144.0	142.7
Days Exceeding Federal Standard (Daily Standard 150 μg/m³)	0	0	0	0	0
Maximum Federal 24-Hour Concentration (μg/m³)	88.3	97.2	64.3	146.6	137.0
$PM_{2.5}$: *Monitoring location: Merced County – 2334 M Street*					
Days Exceeding National 2006 Standard (Daily Standard 35 μg/m³)	18.2	15.2	6.3	20.4	29.7
Maximum National 24-Hour Concentration (μg/m³)	53.7	60.8	42.8	66.7	94.7

Notes: Underlined Values in excess of applicable standard / ppm = parts per million / μg/m³ = micrograms per cubic meter.
*Insufficient data to determine the value
**2018 is the latest year of data available as of preparation of this chapter (January 2020).

Source: California Air Resources Board, 2020. Air Quality Trend Summaries. Accessed at <www.arb.ca.gov/adam>.

SJVAPCD Rules and Regulations Applicable to Dairies

Dairies must comply with many air district rules and regulations including at least Regulation VIII, New Source Review, and health risk assessments in compliance with AB2588. Selected rules are described below.

- **Rule 2010 Permits Required and Rule 2201: New and Modified Source Review (NSR).** The SJVAPCD requires an Authority to Construct (ATC) and a Permit to Operate (PTO) for expanding facilities with an existing ATC/PTO. If any existing source makes modifications to its operations, and those modifications generate two pounds or more per day of any criteria emissions, the NSR is triggered. This triggers Best Available Control Technology (BACT) or Best Available Retrofit Control Technology (BARCT) for the new "emissions sources," applied through the ATC and PTO permits.
- **Regulation VIII Fugitive PM_{10} Prohibitions: *Rules 8011-8081.*** Regulation VIII includes specific emission control strategies for fugitive dust from construction/demolition, bulk materials, carryout, open areas, paved and unpaved roads, equipment on unpaved roads, paved road dust, fugitive windblown dust, and farming operations.
- **Rule 4550: Conservation Management Practices.** The rule outlines requirements for owner/operators of agricultural operations to prepare CMP plans for all agricultural producers with 100 contiguous acres or more to reduce dust emissions in areas of crop production, animal feeding operations, and unpaved roads/equipment areas.
- **Rule 4570: Confined Animal Facilities.** Rule 4570 requires an emission mitigation plan that lists the VOC mitigation measures that the facility with greater than or equal to 500 milk cows will use to comply with all applicable requirements of Rule 4570.
- **SJVAPCD Policy for Risk Management Review:** The purpose of a Risk Management Review (RMR) is to ensure on-going compliance with the Air Toxics "Hot Spots" information and Assessment Act of 1987 (AB 2588). SJVAPCD's Technical Services performs the RMRs for dairies being permitted by the District for those activities covered under the permits.

Significance Thresholds

The SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) (SJVAPCD 2015) has established thresholds for certain criteria pollutants for determining whether a project would have a significant air quality impact. Construction and operational emissions are calculated separately. The SJVAPCD significance thresholds are presented in Table 7.

Table 7 SJVAPCD Significance Thresholds – Criteria Pollutants

Pollutant/Precursor	Threshold of Significance		
	Construction Emissions (*tons/year*)	Operational Emissions	
		Permitted Equipment and Activities (*tons/year*)	Non-Permitted Equipment and Activities (*tons/year*)
Reactive Organic Gases (ROG)	10	10	10
Oxides of Nitrogen (NO_X)	10	10	10
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15
Carbon Monoxide (CO)	100	100	100
Sulfur Oxide (SOx)	27	27	27

Notes: The significance of the impacts of the emissions from construction, operational non- permitted equipment and activities, and operational permitted equipment and activities are evaluated separately. The thresholds of significance are based on a calendar year basis. For construction emissions, the annual emissions are evaluated on a rolling 12-month period.

Source: San Joaquin Valley Air Pollution Control District "Guidance for Assessing and Mitigating Air Quality Impacts" 2015.

The SJVAPCD's GAMAQI includes screening-level thresholds for construction and operational emissions to help determine when an ambient air quality analysis (AAQA) must be performed. An AAQA would entail the use of air dispersion modeling to determine whether emission increases from a project will cause or contribute to a violation of the CAAQS or NAAQS. The SJVAPCD's AAQA screening-level thresholds are 100 pounds per day of any criteria pollutant; projects with emissions in excess of this threshold would require dispersion modeling, while projects below this threshold are presumed to not result in a violation of the CAAQS or NAAQS.

ENVIRONMENTAL EVALUATION

The evaluation of the Nunes Dairy Expansion project addresses the emissions associated with the expansion of the existing herd size from 1,276 cows to the proposed level of operations at 2,100 cows. With the expansion, mature cows and calves would be increased, while heifer support stock would be removed from the dairy, resulting in an overall increase of 824 animals from existing numbers (see Table 3 in Section 1, *Description of Project* of this Initial Study for a breakout of the herd by age-class). Approximately 185± acres of the project site are currently used for the production of crops and application of manure process water and/or solid manure. With implementation of the proposed project, crops grown on 185± acres of the project site would continue to be used for dairy feed crops and supplement imported grain and hay. The number of silage piles would remain at four.

In addition to agricultural activities, the existing operation includes a dairy facility located on an approximate 18-acre portion of the 207-acre dairy farm. The developed facilities include freestall barns, open corrals, animal housing structures, a milking parlor, compost area, wastewater storage pond, two settling basins, commodity barn, feed storage area, and five on-site employee residences and one owner residence located at the dairy facility.

The proposed project would include the removal of 41,200 square feet of existing animal shelter structures and construction of one 85,800 square-foot freestall barn. All construction would occur in the existing footprint of the dairy. With implementation of the proposed project, the number of

employees would increase from seven to approximately nine workers. There is an existing permitted generator at the milking parlor. All project-related construction and operational activities would generate some level of air quality emissions, and thus are being assessed as part of this Initial Study.

Question (a) Conflict with air quality plan: Less-than-significant Impact with Mitigation. As stated above in the discussion of the regulatory environment, for nonattainment criteria pollutants, the SJVAPCD has attainment plans in place that identify strategies to bring regional emissions into compliance with federal and state air quality standards. As of January 2020, these plans include the *2018 Plan for the 1997, 2006, and 2012 PM2.5 Standards*, the *2007 PM10 Maintenance Plan*, the *2016 Plan for the 2008 8-Hour Ozone Standard*, and the *2013 Plan for the Revoked 1-Hour Ozone Standard*.

The policies and provisions of the SJVAPCD and the 2030 Merced County General Plan control air quality impacts from the proposed projects within Merced County. The proposed project would be consistent with the Agricultural land use designation of the site set forth by the 2030 Merced County General Plan. Thus, the proposed project would be consistent with the land use assumptions used by the SJVAPCD in drafting the air quality attainment plans.

The SJVAPCD regulates air emissions at the Nunes Dairy facility through its ATC/PTO permit process, and has required operational mitigation measures to reduce air emissions at the animal confinement facility. The project applicant would be required to submit an ATC permit application for the proposed facility expansion. Additional applicable SJVAPCD Rules and Regulations may include: Regulation VIII (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). To ensure project compliance with applicable SJVAPCD Rules and Regulations, the following mitigation measure would be required:

Mitigation Measure AQ-1:

> Prior to the release of the first-issued building permit, the applicant shall provide to the County a receipt of a SJVAPCD approved Dust Control Plan or Construction Notification form in compliance with Regulation VIII – Fugitive Dust PM_{10} Prohibitions. The animal confinement facility expansion may be subject to additional rules, including, but not limited to Rule 4570, Confined Animal Facilities, Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations), and Rule 4002 (National Emission Standards for Hazardous Air Pollutants). The project applicant will be required to implement measures of applicable SJVAPCD Rules and Regulations as noted.

Implementation of Mitigation Measure AQ-1 would require compliance with applicable Rules and Regulations of the SJVAPCD as described above, and ensure the proposed project would not conflict with or obstruct implementation of any SJVAB attainment plan or the SIP. Therefore, a less-than-significant impact would result, and no additional mitigation would be necessary.

Question (b) Net increase of criteria pollutant: Less-than-significant Impact with Mitigation. Implementation of the proposed project would result in short-term (construction) and long-term (operations) air pollutant emissions, including ROG, CO, SO_2, NO_X, and fugitive dust.

Construction

Construction activities associated with the Nunes Dairy project would result in short-term air emissions including ROG, CO, SO_2, NO_X, and fugitive dust. Construction-related emissions were calculated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 (see Appendix C). The individual components of construction emissions include employee trips, exhaust emissions from construction equipment, and fugitive dust emissions. Construction of the proposed dairy expansion is scheduled to begin approximately 3-5 years after project approval depending on market conditions. Project construction would occur over an approximate two-acre area.

Table 8 presents an estimate of annualized construction emissions for the Nunes Dairy Expansion project. Construction of the proposed project would produce maximum annual unmitigated emissions of 0.83 tons of ROG, 1.82 tons of NO_X, and 0.15 tons of PM_{10}. Construction of the proposed project would not exceed the significance criteria of 10 tons/year of ROG, 10 tons/year of NOx, or 15 tons/year for PM_{10}.

Table 8 Construction Related Emissions

	ROG (tons/year)	**NO_X** (tons/year)	**CO** (tons/year)	**SO_2** (tons/year)	**PM_{10}** (tons/year)	**$PM_{2.5}$** (tons/year)
Construction Emissions (1)	0.83	1.82	1.7	0.00	0.15	0.10
SJVAPCD Significance Criteria	10	10	100	27	15	15
Criterion Exceeded?	No	No	n/a	n/a	No	n/a

Notes: Calculations completed in May 2020.

1 See CalEEMod calculation assumptions in Appendix C. To represent the worst-case scenario, the entirety of the project was assumed to be constructed in one phase.

Source: Planning Partners, 2020.

Although the project would not exceed significance thresholds, the applicant would still be required to comply with Regulation VIII and all applicable SJVAPCD Rules and Regulations. SJVAPCD's Regulation VIII (Rule 8021) specifies control measures for PM_{10} emissions from construction related activities, including demolition. In addition, Rule 3135 establishes a Dust Control Plan Fee, which would also be required. A summary of control measures for construction and other earthmoving activities included in Regulation VIII are as follows:

Pre-Activity:

- Pre-water site sufficient to limit VDE to 20% opacity, and
- Phase work to reduce the amount of disturbed surface area at any one time.

During Active Operations:

- Apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20% opacity; or
- Construct and maintain wind barriers sufficient to limit VDE to 20% opacity. If utilizing wind barriers, control measure above shall also be implemented.
- Apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20% opacity and meet the conditions of a stabilized unpaved road surface.

Temporary Stabilization During Periods of Inactivity:

- Restrict vehicular access to the area; and
- Apply water or chemical/organic stabilizers/suppressants, sufficient to comply with the conditions of a stabilized surface. If an area having 0.5 acres or more of disturbed surface area remains unused for seven or more days, the area must comply with the conditions for a stabilized surface area as defined in section 3.53 of Rule 8011.

Speed Limitations and Posting of Speed Limit Signs on Uncontrolled Unpaved Access/Haul Roads on Construction Sites:

- Limit the speed of vehicles traveling on uncontrolled unpaved access/haul roads within construction sites to a maximum of 15 miles per hour.
- Post speed limit signs that meet State and federal Department of Transportation standards at each construction site's uncontrolled unpaved access/haul road entrance. At a minimum, speed limit signs shall also be posted at least every 500 feet and shall be readable in both directions of travel along uncontrolled unpaved access/haul roads.

Wind Generated Fugitive Dust Requirements:

- Cease outdoor construction, excavation, extraction, and other earthmoving activities that disturb the soil whenever VDE exceeds 20% opacity. Indoor activities such as electrical, plumbing, dry wall installation, painting, and any other activity that does not cause any disturbances to the soil are not subject to this requirement.
- Continue operation of water trucks/devices when outdoor construction excavation, extraction, and other earthmoving activities cease, unless unsafe to do so.

The SJVAPCD requires that animal confinement facilities obtain an ATC permit prior to initiating construction on a new facility if the facility results in emissions in excess of five tons/year of VOCs, or for expanding facilities with an existing ATC/PTO. The proposed dairy expansion project would require a new ATC and PTO from the SJVAPCD for the expanded herd and modification of the existing facilities. The project's compliance with Regulation VIII would be enforced through the ATC permit. For projects in which construction related activities would disturb equal to or greater than one acre of surface area, the SJVAPCD recommends that the County's conditions of approval require that the applicant provide a receipt of a SJVAPCD approved Dust Control Plan or Construction Notification form prior to the issuance of the first building permit.

Emissions of construction-related ozone precursors and fugitive dust would not exceed the threshold values used by the SJVAPCD. In addition, the project would be required to implement construction dust control measures and comply with SJVAPCD rules described above to reduce construction emissions. To ensure project compliance with applicable SJVAPCD Rules and Regulations, the following mitigation measure would be required.

Mitigation Measure AQ-2:

Implement Mitigation Measure AQ-1.

Compliance with Regulation VIII and all other applicable SJVAPCD Rules and Regulations as described above in Mitigation Measure AQ-1 would ensure that the proposed construction-related emissions are reduced, and would not exceed SJVAPCD significance criteria.

Operations

Ozone precursor emissions from dairy operations, farm equipment, and increased traffic. The proposed dairy expansion would result in the emissions of ozone precursors (volatile organic Compounds (VOC)/Reactive Organic Gases (ROG) and Nitrogen Oxides (NOx)) from dairy operations, farm equipment, and increased traffic. There are several management practices used at the Nunes Dairy that control emissions at the animal confinement facility. For example, all animals are fed in accordance with National Research Council (NRC) guidelines to minimize undigested protein and other undigested nutrients in the manure with the result that the overall emissions of NH_3 and VOCs associated with manure decomposition are reduced. The SJVAPCD proposed emission reduction measures for feed handling and storage include best management practices, such as minimizing the surface area of the silage face exposed to the atmosphere and cleaning up residual feed to avoid decomposition and increased emissions.

With the proposed expansion, mature cows and calves would be increased, while heifer support stock would be removed from the dairy, resulting in an overall increase of 824 animals from existing numbers. The VOC Emission Factors used in this analysis are from the dairy emissions calculator spreadsheet provided by the SJVAPCD (dated May 2019). Increased traffic emissions and area sources were calculated using CalEEMod Version 2016.3.2 (see Appendix C). Since cropped acreage would remain the same at 185± acres, there would be no change in emissions from farming activities. Aggregated VOC emissions for activities associated with the Nunes Dairy Expansion are presented in Table 9.

Table 9 Aggregated VOC/ROG Emissions

Emission Source	Existing VOC/ROG Emissions	Proposed VOC/ROG Emissions	Increment of Increase with Proposed Expansion
Traffic and Area Sources	0.895 tons/year	1.084 tons/year	0.19 tons/year
Feed and Manure Management	14.40 tons/year	21.68 tons/year	7.28 tons/year
Total	15.30 tons/year	22.77 tons/year	7.47 tons/year
SJVAPCD Significance Criterion			10 tons/year
Criterion Exceeded?			**NO**

Source: Planning Partners, 2020.

Operations at the modified dairy would result in fugitive dust (PM_{10} and $PM_{2.5}$) emissions from wind erosion, farming operations, animal movement in unpaved corrals, vehicle use along unpaved driveways and access roads, and equipment operation. Various management practices are used at this dairy to control PM emissions. The dairy uses a flush system with recycled water to clean the milk barn, which minimizes PM emissions. Concrete lanes in the freestall barns reduce PM emissions since the cows are on a paved surface instead of loose dirt, and flushing of the freestalls to remove manure also minimizes PM emission. Removal of the heifer pens and construction of the freestall barn would result in a decrease in PM emissions from animal movement.

Since farming operations would not change, there would be no change in wind erosion from cultivated land and associated PM emissions. Similarly, there would be no change in emissions from land preparation and harvesting. There would be a minimal increase in emissions from on-site mobile sources and from traffic on unpaved roadways. There would be an overall decrease in PM_{10} emissions from the proposed herd due to the change in cow housing, removal of the existing pens and heifers, and application of control efficiencies as required by the SJVAPCD. With the proposed expansion, PM_{10} emissions would decrease from 1.71 tons/year to 1.04 tons/year, or an overall decrease of 0.67 tons/year (see Appendix C). Therefore, fugitive dust emissions would not exceed SJVAPCD significance criteria for PM_{10} of 15 tons/year.

Based on the project size, project specific emissions of criteria air pollutants would not exceed SJVAPCD significance thresholds. As part of the ATC/PTO process, the dairy operator would be required to submit an ATC/PTO application detailing an emission mitigation plan listing all chosen BACT/BARCT mitigation measures. The SJVAPCD will consider implementation of the selected mitigation measures as conditions of the ATC permit required by District Rule 2201.

Summary

Because project construction and operation emissions of criteria pollutants are not expected to exceed SJVAPCD significance thresholds, and the proposed project would require compliance with applicable SJVAPCD Rules and Regulations as required in Mitigation Measure AQ-1, the project would not emit air pollutants that would violate any air quality standard or contribute to an existing air quality violation, or result in a cumulatively considerable net increase in any criteria pollutant. A less-than-significant impact would result, and no additional mitigation would be necessary.

Question (c) Expose sensitive receptors to substantial pollutant concentrations: Less-than-significant Impact.

Hazardous Air Pollutants and Health Risk: Proposed modifications to the dairy facility would result in emissions of hazardous air pollutants near existing residences; therefore, an assessment of the potential risk to the population attributable to emissions of hazardous air pollutants from the proposed heifer ranch expansion is required. The Health Risk Assessment (HRA) prepared for the Nunes Dairy Expansion project assesses the potential risk to the adjacent residents and workers attributable to emissions of hazardous air pollutants from construction and operation of the proposed dairy (see Appendix D[2]).

Emissions of hazardous air pollutants attributable to proposed increases in construction activities, animal movement, manure management, and on-site mobile sources were calculated using generally accepted emission factors and the California Emissions Estimator Model version 2016.3.2. Ambient air concentrations were predicted with dispersion modeling to arrive at a conservative estimate of increased individual carcinogenic risk that might occur as a result of continuous exposure over a 70-year lifetime. Similarly, concentrations of compounds with non-cancer adverse health effects were used to calculate hazard indices (HI), which are the ratio of expected exposure to acceptable exposure.

The SJVAPCD has set the level of significance for carcinogenic risk to twenty in one million (20×10^{-6}), which is understood as the possibility of causing twenty additional cancer cases in a population of one million people. The level of significance for acute and chronic non-cancer risk is a hazard index of 1.0. The maximum predicted cancer risk among the modeled receptors is 10.9 in one million, which is below the significance level of twenty in one million. The maximum predicted acute and chronic non-cancer hazard indices among the modeled receptors are 0.306 and 0.095, respectively, which is below the significance level for chronic and acute significance level (see Appendix D).

In accordance with the SJVAPCD's Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015) and polices the potential health risk attributable to the proposed project is determined to be less than significant, and no mitigation would be necessary.

Ambient Air Quality: As set forth in the significance thresholds discussion above, the SJVAPCD's AAQA screening-level thresholds are 100 pounds per day of any criteria pollutant; projects with emissions in excess of this threshold would require dispersion modeling, while projects below this threshold are presumed to not result in a violation of the CAAQS or NAAQS. Based on CalEEMod V. 2016.3.2 modeling estimates, the proposed dairy modification would not exceed 100 pounds per day of any criteria pollutant. Therefore, proposed emissions for the project would not cause or contribute to a violation of any NAAQS or CAAQS for any of the criteria pollutants. In accordance

[2] Calculations for this Appendix were completed in May 2020.

with the SJVAPCD's Guide for Assessing and Mitigating Air Quality Impacts (SJVAPCD 2015), the potential impact to air quality attributable to the proposed project is determined to be less than significant, and no mitigation would be necessary.

Question (d) Odors. Less-than-significant Impact with Mitigation. Operations and manure management at the Nunes Dairy may emit odors that may be bothersome to nearby sensitive uses, including residences and visitors to wildlife areas. Odors associated with dairy and other animal confinement operations are primarily generated from manure and silage. Unlike the other air pollutants, odor does not have generally accepted methods of measurement or allowable concentration, and its offensiveness differs among individuals. For these reasons, Merced County has sought to prevent nuisances by the use of setbacks between potential sources of offensive odors and adjoining sensitive land uses, rather than regulating the concentration of odor-producing compounds. Under existing regulations, Merced County enforces a setback of 0.5-mile from animal confinement facilities to specified urban uses, residentially zoned property, concentrations of five or more off-site residences, parks, and wildlife refuges, and a minimum of 1,000 feet between animal confinement facilities (ponds, corrals, barns) and rural residences.

There are several off-site residences located within the windshed of the dairy (see Figure 5), and there are six off-site residences located within 1,000 feet of the existing facility (see Figure 6). According to Merced County Code Chapter 18.64.040 (B)(2), the modification or expansion of an existing facility must not decrease the existing separation distance from residentially zoned property, concentrations of five or more off-site residences, or off-site residences to less than 1,000 feet unless the off-site property owner provides written permission. Construction of the proposed freestall barn would occur within the existing footprint of active dairy operations. While there are off-site residences within 1,000 feet, the dairy modification would not reduce the existing distance to these residences. The proposed modification would not reduce the distance to less than 1,000 feet for any off-site residence currently greater than 1,000 feet from existing active dairy facilities. No odor complaints have been reported at the Nunes Dairy and submitted to the Division of Environmental Health (DEH 2020).

The ACO also prohibits new dairies within one-half mile of urban areas, areas zoned for residential uses, concentrations of rural residences, and parks (Merced County Code Chapter 18.64.040 (B)(1)(a)). According to Merced County Code Chapter 18.64.040 (B)(2), if the animal confinement facility is located within the minimum setback distance, the modification or expansion of an existing facility must not decrease the existing separation distance from these areas. There are no residentially zoned areas or concentrations of rural residences within the 0.5-mile setback distance (Merced County GIS 2020). The City of Merced is located approximately 0.7 miles from the active dairy facilities.

Chapters 18.64.050 H, 18.64.055 C.8.a, and 18.64.040 B.1 of the ACO (see Appendix A, bound separately) address potential odor impacts, and require preparation of an odor control plan. Additionally, the nuisance requirements and protocols set forth in the Merced County Code regarding odor nuisances would apply. Summarily, if an odor nuisance condition were reported, as required by the ACO, DEH would implement the following procedures:

A. If nuisance conditions are reported to the DEH, the Division shall take the following actions:

   Within 72 hours of receiving a complaint, the DEH shall determine whether an odor exists during an inspection of the location of the complaint, and identify potential sources of odor in the vicinity. If a confined animal facility is identified as a potential source of the odor

nuisance, the County will evaluate the affected facility and identify sources of the odor. In the event of odor causing a nuisance, the County will impose additional control measures on a site-specific basis. Measures that may be required by DEH include the operational measures set forth above.

B. If odor nuisance conditions are confirmed, and are attributable to operations at a confined animal facility, the DEH shall require the owner/operator to remedy the nuisance condition within a specified period of time. The Division shall notify the parties reporting the nuisance of its findings, and shall provide follow-up inspections to ensure that the nuisance condition is cured. Should the condition persist, the Division shall initiate an enforcement action against the offending operator.

Because there are several residential uses within ACO setback areas, expansion of the proposed facilities and an increase in cow numbers could increase the potential for nuisance conditions, and the following mitigation would be required.

Mitigation Measure AQ-3a:

To minimize potential for odor nuisance conditions, prior to initiating operations at the new facilities, the applicant shall prepare an Odor Control Plan for submission and approval by the Merced DEH. Following approval, the applicant shall implement the approved Plan. The following odor control measures shall be required in the Plan:

- Liquid manure utilized for irrigation purposes shall be managed so that it does not stand in the application field for more than 24 hours.
- Implement odor control measures as contained in the Plan, which may include, but not be limited to the following:

1. Ration/diet manipulation

   This approach involves the alteration of feed in order to reduce the volume of substrate available for anaerobic activity. The approach includes reducing the nitrogen content of food, phase feeding, repartitioning agents, improved animal genetics, and various feed additives.

2. Manure management

   Utilize best management practices for manure management, including minimizing the time between excretion and application, and aeration of retention basins.

   Additionally, implement the following additional best management practices:

   Manure Collection Areas
   - Clean out manure generated at the freestall barns daily and corrals at least twice a year, or more frequently as necessary to minimize odors;
   - Keep cattle as dry and clean as possible at all times;
   - Scrape manure from the corrals and bedding from the freestall barns and corrals at a frequency that would reduce or minimize odors.

   Manure Treatment and Application
   - Minimize moisture content of stockpiled manure/retained solids to a level that would reduce the potential for release of odorous compounds during storage;
   - Minimally agitate stockpiled manure during loading for off-site transport;

- Mix process water with irrigation water prior to irrigation (dilution rate shall be adequate to minimize odor levels and maintain appropriate nutrient content in effluent);
- Clean up manure spills upon occurrence;
- Maintain and operate settling ponds and retention ponds to minimize odor levels.

General

- Implement dust suppression measures to prevent the release of odorous compound-carrying fugitive dust;
- During project operations, the dairy operator/owner shall respond to neighbors who are adversely affected by odors generated at the project site and take prompt corrective action.

If necessary and feasible, the animal confinement operation must implement the following additional measures:

1. Manure treatment
   Manure treatment methods include maintaining aerobic conditions during storage, aerobic treatment using aerated lagoons or composting, anaerobic digestion, and biochemical treatment.
2. Capture and treatment of emitted gases
   This approach includes the use of covered storage pits or lagoons, soil incorporation of applied liquid or solid manure, and dry scrubbers for building exhaust gases including soil absorption beds, bio-filter fields, or packed beds.
3. Enhanced air dispersion
   Odor and other air contaminants are diluted to below threshold levels by atmospheric turbulence that increases with wind velocity, solar radiation, and roughness elements such as buildings, trees, or barriers. Sound site selection with adequate separation distance and elevated sources or mechanical turbulence can aid in dispersing odorous compounds and avoiding nuisance conditions.
4. Enhanced land spreading procedures
   Procedures may be modified to minimize impacts by avoiding spreading when the wind is blowing towards populated areas, employing technologies to incorporate manure into soil during or directly after application (i.e. injection, plowing, disking), or spreading manure in thin layers during warm weather.

Mitigation Measure AQ-3b:

Implement the nuisance control measures set forth in Mitigation Measure HAZ-1.

Implementation of the foregoing measures would reduce the magnitude of this potential effect by requiring housekeeping and management measures to reduce the incidence of odors for nearby residents. While there may be an increased potential for nuisance conditions due to odors with the dairy modification, the proposed modification would not reduce the setback distances specified by the ACO. With implementation of the above mitigation measures, the potential impact from odors would be reduced to less than significant.

Naturally Occurring Asbestos

Naturally occurring asbestos is not a potential concern in the project area. For more information, see Section IX, *Hazards and Hazardous Materials*.

IV. BIOLOGICAL RESOURCES	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
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 Wildlife or the U.S. Fish and Wildlife Service?			**X**	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?			**X**	
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?			**X**	
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 site?			**X**	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				**X**
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?				**X**

ENVIRONMENTAL SETTING

The project site consists of developed uses, including existing active dairy facilities and 185± acres of associated cropland. Dairy operations occur within a relatively flat and graded area with developed dairy facilities. The project area has historically been used for dairy operations; besides landscaping trees associated with the on-site residences, there are no trees or other natural habitat in the area of the proposed dairy modification.

The Grasslands Ecological Area (GEA) in the central portion of Merced County encompasses over 179,000 acres of wetlands and associated habitats and 51,000 acres of upland. The GEA is composed of two Federal wildlife refuges, four State wildlife management areas, a State park, and hundreds of privately-owned parcels. The USFWS, California Department of Fish and Wildlife (CDFW), Grassland Water District, conservation groups, and the private landowners work cooperatively in the GEA to manage the wetland complex in order to aid the recovery of San Joaquin Valley threatened and endangered species. The Grasslands Focus Area (GFA) includes the GEA and a buffer of agricultural and other working landscapes that are compatible with wetland habitats and functions and is an area designated by the Central Valley Joint Venture as a priority habitat conservation area. The area of active dairy facilities and several cropped fields associated with the Nunes Dairy are just outside of the Grasslands Focus Area. Nunes Dairy Field 2 (APN 066-110-030), located southeast of the active dairy facilities, lies within the Grasslands Focus Area but not within the Grasslands Ecological Area. There are no wildlife refuges or wildlife management areas

managed by the CDFW or USFWS for wildlife purposes within 12 miles of the project site (Google Earth 2020).

Research on the biological resources associated with the proposed project included: (1) a query of the California Natural Diversity Database (CNDDB) to identify occurrences of special-status species within the Merced, California and surrounding eight 7.5-Minute Topographic Quadrangles (CNDDB 2020); (2) a query of federally listed Threatened and Endangered species from the U.S. Fish and Wildlife Service (USFWS 2020) and the California Native Plant Society's (CNPS) Electronic Inventory; and (3) a review of the USFWS National Wetland Inventory (NWI) map to identify the presence of wetlands within the project area (USFWS 2020a). The results of the database search and location analysis were used to determine if any sensitive resources had been previously reported within or in the immediate local vicinity of the project site.

Special-Status Plant and Wildlife Species

This special-status species evaluation considers those species identified as having relative scarcity and/or declining populations by the USFWS or CDFW. Special-status species include those formally listed as threatened or endangered, those proposed for formal listing, candidates for federal listing, and those classified as species of special concern by CDFW. Also included are those plant species considered to be rare, threatened, or endangered in California by the CNPS, and those plant and animal taxa meeting the criteria for listing under Section 15380 of the State CEQA Guidelines.

According to the records search, three special-status invertebrate species, two amphibian, three reptile, and two fish have been documented in the nine-quadrangle area surrounding the project site. Most of these species are associated with water features such as vernal pools, ponds, marshes, and streams. No vernal pool habitat or other appropriate water features are present on the site in the area of proposed activities.

The results of the CNDDB records search show that eight bird species and five mammals have been recorded in the vicinity of the project site. Some of these species require foraging habitat such as that found in project area cropland. The burrowing owl would require embankments or deep friable soils for nesting. The tri-colored blackbird would require habitat with available water features. The area of existing dairy facilities and the proposed dairy modification is devoid of foraging habitat.

Occurrences of 26 special status plant species have been recorded in the region of the project, many associated with wet areas or vernal pools. The land on the subject property is developed with active dairy facilities and does not support historical flora and fauna. The project site does not support extensive wild plant diversity or cover, and there is no native vegetation.

Riparian Habitat, Sensitive Natural Communities, and Wetlands

The project area is developed with active dairy facilities. Sensitive natural habitats are those that are considered rare within the region, support sensitive plant or wildlife species, or function as corridors for wildlife movement. Two sensitive natural habitats were identified by the CNDDB and CNPS lists for the nine-quadrangle area. No sensitive natural communities were identified. A review of the USFWS National Wetland Inventory Map identified potential palustrine wetlands on the project site; however, they are located in the areas defined by the settling basins and wastewater storage pond. No other potentially jurisdictional wetlands or wetlands of the United States were identified on the project site, and it would not support jurisdictional wetlands or wetlands of the United States.

For a complete listing of special-status species that may occur or could potentially be affected by activities in the project location, see Appendix E (bound separately).

Local Habitat Conservation Plans

No Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan has been approved for Merced County.

ENVIRONMENTAL EVALUATION

Question (a) Adverse effect on special-status species: Less-than-significant Impact. No habitat for special status species exists within the area of active dairy facilities. The on-site man-made wastewater pond provides limited habitat for some bird species associated with water, but the pond would not be modified by the proposed project. Raptors, including hawks and owls, may forage for rodents within the project area and adjacent crop fields. Because no change to existing cropping patterns is proposed, existing raptor foraging is not expected to be adversely affected by implementation of the dairy modification project. Because implementation of the proposed project would take place within the existing footprint of active dairy facilities, no adverse effects to habitat or sensitive species would occur; this would be a less-than-significant impact, and no mitigation would be required.

Questions (b) and (c) Adverse effect on riparian habitat / sensitive natural communities / wetlands: Less-than-significant Impact. No riparian habitat, sensitive natural communities, or wetlands occur on the project site. Implementation of the proposed project would not have a substantial adverse effect on riparian habitat, sensitive natural communities, or wetlands, since no such resources are located within the project area.

Because the proposed project would modify areas only within the footprint of currently active dairy facilities, and no existing riparian habitat, sensitive natural communities, or wetlands are identified on site, impacts to riparian habitat, sensitive natural communities, or wetlands would be considered less than significant, and no mitigation would be required.

Question (d): Interfere with species movement, wildlife corridors, or native wildlife nursery sites: Less-than-significant Impact. The project site is located near the GFA boundary, but it is not within 0.5-mile of any State or Federal wildlife refuges or managed wetlands within the GEA. There are no creeks, valleys, or other wildlife movement corridors in the site. The proposed project involves construction of a new freestall barn within the footprint of existing active dairy facilities. Because there are no wildlife corridors or native wildlife nursery sites located on the project site, and new construction would occur only within the footprint of existing active dairy facilities, this would be a less-than-significant impact, and no mitigation would be required.

Questions (e) and (f) Conflict with policies, ordinances, or plans protecting biological resources: No Impact. The project site is not located in an area covered by an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Merced County has not adopted a tree preservation ordinance, or any other policy or requirement to protect biological resources. Therefore, no conflict with any adopted conservation program would occur with project implementation. No significant impact would result, and no mitigation would be required.

V. CULTURAL RESOURCES				
	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?				**X**
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		**X**		
c) Disturb any human remains, including those interred outside of formal cemeteries?		**X**		

Records of the known cultural resources found in Merced County are included in the files of the Office of Historic Preservation, California Historical Resources Information System. The Central California Information Center (CCIC), housed at California State University, Stanislaus, locally administers these records. A cultural resources records search was conducted at the CCIC for the project site and surrounding area to determine its historic and cultural sensitivity (CCIC 2016).

ENVIRONMENTAL SETTING

The CCIC Records Search report showed that there have been no previous cultural resources investigations on or in the vicinity of the proposed project. No prehistoric or historic resources on the project site or in its vicinity that have been reported to the CCIC, and there are no resources that are known to have value to local cultural groups. The report noted the proximity of the Owens Creek, and the potential for previously unrecorded features and artifacts under the surface associated with prehistoric occupation and use (CCIC 2016).

REGULATORY SETTING

State and federal legislation requires the protection of historical and cultural resources. In 1971, President's Executive Order No. 11593 required that all federal agencies initiate procedures to preserve and maintain cultural resources by nomination and inclusion on the National Register of Historic Places. In 1980, Governor's Executive Order No. B-64-80 required that state agencies inventory all "significant historic and cultural sites, structures, and objects under their jurisdiction which are over 50 years of age and which may qualify for listing on the National Register of Historic Places." Section 15064.5(b)(1) of the CEQA Guidelines specifies that projects that cause "…physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historic resource would be materially impaired" shall be found to have a significant impact on the environment.

ENVIRONMENTAL EVALUATION

Question (a) Historical resources: No Impact. No known historic resources on the project site or in its vicinity have been reported to the CCIC. All proposed construction would take place within the footprint of the existing facility, and limited additional ground disturbance would be required to prepare the construction area for the proposed freestall barn. Because no known historic resources have been reported on the project site, and construction would take place within the existing

footprint of active dairy facilities, there would be no adverse change in the significance of a historical resource. There would be no impact, and no mitigation would be required.

Questions (b) and (c) Archaeological resources, human remains: Less-than-significant Impact with Mitigation. The CCIC records search concluded that no known archaeological resources have been reported to the CCIC for the project site. Archaeological resources are suspected to be minimal because the dominant land use has been for agricultural uses (including leveling, cultivation, grading, and construction of the existing dairy). Thus, any archeological artifacts that might have been present may have been destroyed or have been moved off-site during the development of the site.

The entire project area has been highly modified by development of the existing dairy facilities, and the area of construction of the proposed freestall barn has been previously disturbed. However, significant cultural remains can also exist below the plow zone in Merced County, and these resources may be unearthed during construction or continued cropping activities at the project site. Through Resolution 97-01, Merced County has imposed conditions relating to undiscovered cultural resources pursuant to Section 5097.98 of the State Public Resources Code, and Section 7050.5 of the State Health and Safety Code. The following regulatory requirements will be included as conditions of approval for the proposed project:

Mitigation Measure CUL-1:

A. If buried cultural resources such as chipped or ground stone, midden deposits, historic debris, building foundations, or human bone are inadvertently discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop responsible treatment measures in consultation with Merced County and other appropriate agencies.

B. If remains of Native American origin are discovered during proposed project construction, it shall be necessary to comply with state laws concerning the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (NAHC). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

- The County coroner has been informed and has determined that no investigation of the cause of death is required; and
- If the remains are of Native American origin:
  - √ The most likely descendants of the deceased Native Americans have made a recommendation to the landowner or person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC 5097.98; or
  - √ The NAHC has been unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours after being notified.

C. According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the NAHC.

Because the records search conducted for the project site yielded no positive results, and because no resources have been discovered during previous disturbances of the project site, with implementation of the above regulatory requirements, the proposed project would result in a less-than-significant impact to archaeological resources and human remains. No additional mitigation would be required.

VI. ENERGY	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			**X**	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			**X**	

ENVIRONMENTAL SETTING

State and Local Energy Plans

California's first Long Term Energy Efficiency Strategic Plan presents a single roadmap to achieve maximum energy savings across all major groups and sectors in California. This comprehensive Plan for 2009 to 2020 is the state's first integrated framework of goals and strategies for saving energy, covering government, utility, and private sector actions, and holds energy efficiency to its role as the highest priority resource in meeting California's energy needs. The Plan identifies agriculture as a unique opportunity to integrate renewable energy from biogas from animal waste. However, the Plan has not focused specific attention on renewable energy.

The California Renewables Portfolio Standard (RPS) was established in 2002 under Senate Bill 1078 and updated in 2006 and 2011 under Senate Bill 107 and Senate Bill 2, respectively. The California RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020. Dairy digesters producing electricity are a RPS eligible technology. In addition, dairy digesters can produce biogas and send it to a natural gas-fired energy generation facility, which also can produce RPS eligible electricity.

The *California Green Building Standards Code* (CALGreen Code) (California Code of Regulations, Title 24, Part 11) is a part of the California Building Standards Code that comprehensively regulates the planning, design, operation, and construction of newly constructed buildings throughout the state. Both mandatory and voluntary measures are included in the CALGreen Code. Mandatory measures for non-residential structures include standards for light pollution reduction, energy efficiency, and water conservation, among others.

As discussed in Section VIII, *Greenhouse Gas Emissions*, below, Merced County does not yet have a Climate Action Plan (CAP) or energy plan.

ENVIRONMENTAL ANALYSIS

Question (a) Wasteful consumption of energy resources: Less-than-significant Impact. Development of the proposed dairy facility expansion would entail energy consumption that includes both direct and indirect expenditures of energy. Indirect energy would be consumed by the use of construction materials for the project (e.g., energy resource exploration, power generation, mining and refining of raw materials into construction materials used, including placement). Direct energy impacts would result from the total fuel consumed in vehicle propulsion (e.g., construction vehicles, heavy

equipment, and other vehicles using the facility). No unusual materials, or those in short supply, are required in the construction of the project.

At the Nunes Dairy, several energy efficiency upgrades have been incorporated into existing operations at the active dairy facilities. The milk pump in the milk barn operates on a variable speed motor, a digital controller that measures vacuum demand from the milking line and regulates the speed of the pump motor accordingly, rather than running at a constant high speed. A variable speed motor typically reduces vacuum pump electric use by 50-60 percent. The dairy also uses a plate cooler system for milk cooling, which can cut refrigeration energy use by up to 60 percent. A Heat Recovery Unit is used to capture the heat from the milk, which can be reused to heat water. A compressor heat recovery unit can be one of the most cost effective purchases a dairy farmer can make. Existing lighting at the dairy facility includes some lower efficiency lighting, such as incandescent, mercury vapor, metal halide, and T12 fluorescent lighting. During the day, only natural lighting is necessary. There are no large motors used on the dairy farm that are old and run for more than five hours per day. Notwithstanding several areas of energy inefficiency, the Nunes Dairy operations would be considered to be relatively energy efficient. While there are some features that could be upgraded for increased energy efficiency, based on the EnSave Best Practices Guide, it is unlikely there would be significant benefit from an energy audit on the farm (EnSave 2012).

Based on energy use as provided by the project applicant, it is estimated that existing operations require approximately 310 kWh per cow-year. This energy use is considered low, but within the range of normal for this size of operation with equipment upgrades in the San Joaquin Valley. The average electricity use on dairies in the San Joaquin Valley is about 504 kWh per cow-year, which is rather efficient compared to the high range of 1,500 kWh per cow-year found on other California dairies. Because the dairy uses less energy per cow-year than the average for the State and the San Joaquin Valley, the Nunes Dairy operations would be considered energy efficient.

Agricultural operations at the dairy farm provide additional opportunity for energy efficiency, though modifications would not be required since the existing operations would be considered energy efficient. One of the three irrigation/tailwater/well pumps are equipped with variable speed drives. Regular testing of the irrigation pumps for pumping efficiency is a good way to help determine if it is time for a pump upgrade. The existing tractor fleet includes tractors, loaders, and feed trucks that range in age from 8 to 19 years old, two of which have Tier 4 engines. Newer tractors and trucks with Tier 3 or Tier 4 engines drastically reduce smoke and smog (particulate matter (PM) and Nitrogen Oxides (NO_X)). Even with older equipment, regular maintenance and other practices will help tractors perform more efficiently and reduce fuel use. These practices include: replacing air and fuel filters regularly; checking tire pressures frequently, and replacing worn tires; using proper ballast for each operation; not idling diesel engines over 10 minutes; cleaning dirty fuel injectors; keeping ground-engaging tools sharp; using the right tractor for the job (match the horsepower to the load); combining trips whenever possible, and by modifying equipment if necessary (Cooperative Extension 2019; EnSave 2012).

While the proposed dairy facility expansion would result in an increase in energy use, there could be a small increase in energy efficiency since larger farms generally use machines more efficiently, providing some reduction in the machinery required per unit produced (USDA 2016). Because the existing features at the Nunes Dairy would be considered energy efficient from a regional and statewide perspective, and energy efficient features have been incorporated into project operations, this would be a less-than-significant impact. No mitigation would be required.

Question (b) Conflict with state or local energy efficiency plans: Less-than-significant Impact. Implementation of the Nunes Dairy Expansion project would not be inconsistent with the California's Long Term Energy Efficiency Strategic Plan since standards and required actions for the energy efficiency in the agricultural sector have not currently been adopted. The Long Term Energy Efficiency Strategic Plan identifies energy reduction goals for the agricultural sector, with emphasis on reducing energy from agricultural pumping. At this time, the highest priority identified in the Strategic Plan is to conduct baseline studies to understand the energy usage patterns in California's agricultural sector in order to design a cohesive strategy to pursue all cost-effective energy efficiency measures. The plans and supporting regulations cited above and in the regulatory setting of Section VIII, *Greenhouse Gas Emissions*, contain strategies that would also result in increased energy efficiency or support renewable energy on animal confinement facilities. The Scoping Plan, the Long Term Energy Efficiency Strategic Plan, SB 1383, and other GHG emissions reduction, renewable energy, and energy efficiency plans and regulatory measures do not include regulatory requirements immediately applicable to the agricultural sector; rather, as a result of these plans, agencies may establish rules in the future that could apply to the proposed dairy facility expansion project. Any future heifer facility expansion project would have to go through the local permitting process, and would have to adhere with the rules in place at that time.

Currently, there are no state, regional, or local policies or requirements in place that are specifically applicable to the project that would result in the promotion of renewable energy or energy efficiency. Because standards for the increase in energy efficiency in the agricultural sector are not currently in place, the proposed project would not conflict with any plans or regulations adopted for the purpose of promoting renewable energy or energy efficiency. This would be a less-than-significant impact, and no mitigation would be required.

VII. GEOLOGY AND SOILS

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

ENVIRONMENTAL SETTING

Geology

The Nunes Dairy project site is located within the Great Central Valley of California. The Central Valley is composed primarily of alluvial deposits from erosion of the Sierra Nevada Mountains located to the east and of the Coastal Ranges located to the west. The elevation of the project site is approximately 180 to 185 feet above mean sea level (MSL). The topography of the project site is generally flat, with varying agricultural field elevations.

Soils

The Natural Resources Conservation Service provides agricultural ratings for soils in the project area in the Merced County Soil Survey. Based on the NRCS Web Soil Survey for Merced County, the soils in the area of the active dairy facilities are shown below in Table 10. The parent materials of the soils are alluvium derived from igneous, metamorphic, and sedimentary rock (NRCS 2013).

Table 10 Nunes Dairy Expansion Project On-Site Soil Types

Soil Map Symbol and Name		Approx. % Project Site	CA Revised Storie Index Grade	Farmland Classification (NRCS/FMMP)
BkA	Burchell silt loam, slightly saline-alkali, 0 to 1 percent slopes	25%	Grade 4 - Poor	Prime farmland if irrigated Confined Animal Agriculture (FMMP)
BrA	Burchell silty clay loam, moderately saline-alkali, 0 to 1 percent slopes	8%	Grade 5 – Very Poor	Farmland of statewide importance Confined Animal Agriculture (FMMP)
LfA	Landlow silty clay loam, slightly saline-alkali, 0 to 1 percent slopes	67%	Grade 3 - Fair	Farmland of statewide importance Confined Animal Agriculture (FMMP)

Note: Soil types shown are for the approximate area of existing and proposed active dairy facilities. The Storie Index is a well-known method of rating soils for agricultural potential. NRCS = Natural Resources Conservation Service; FMMP = Farmland Mapping and Monitoring Program

Source: Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Accessed at http://websoilsurvey.nrcs.usda.gov/

Farmland Mapping and Monitoring Program, Merced County Important Farmland 2012. California Department of Conservation, Division of Land Resource Protection. Accessed at <www.conservation.ca.gov/dlrp/fmmp>

Soil properties can also influence the development of building sites, including site selection, structural design, construction, performance after construction, and maintenance. Soil properties that affect the load-supporting capacity of an area include depth to groundwater, ponding, subsidence, shrink-swell potential, and compressibility. The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments. The project site soil types present limitations for development (NRCS 2013).

Faults and Seismicity

The project site is not located within a mapped fault zone or landslide and liquefaction zone. There is no record or evidence of faulting on the project site (DOC 2015). The site is located in Seismic Damage Zone II, indicating a moderate severity level and moderate probable damage in the event of severe seismic activity (Merced County 2013b).

REGULATORY SETTING

Merced County regulates the effects of soils and geological constraints on urban development primarily through enforcement of the California Building Code (CBC), which requires the implementation of engineering solutions for constraints to urban development posed by slopes, soils, and geology.

ENVIRONMENTAL EVALUATION

Question (a.i) Earthquake fault: No Impact. The project site is not located within or adjacent to a mapped earthquake fault, and there is no record or evidence of faulting on the project site (Merced County 2013b; DOC 2015). Because no fault traces underlie the project site, no hazardous conditions would result from implementation of the project. There would be no impact.

Question (a.ii) Ground shaking: Less-than-Significant Impact. Should an earthquake occur in the vicinity of the proposed project site, it could result in moderate damage. Dairies are categorized

as a low risk use that is considered suitable in all ground-shaking zones. Merced County additionally requires that all new construction comply with the seismic safety requirements of the CBC. Compliance with the CBC would reduce risks on the project site from seismic ground shaking to levels considered acceptable for the State and region. This would be a less-than-significant impact, and no mitigation is required beyond compliance with adopted building standards.

Question (a.iii) Ground failure, liquefaction: Less-than-significant Impact. The project site is not located within a mapped liquefaction zone (Merced County 2013c; DOC 2015). The proposed project would employ standard construction practices and comply with CBC requirements for the State of California. Standard design, construction, and safety procedures would limit soil liquefaction hazards to levels deemed acceptable in the state and region. Adherence with adopted building standards would avoid substantial adverse effects due to the risk of loss, injury, or death involving liquefaction or other seismic-related ground failure. This would be a less-than-significant impact, and no mitigation is required.

Question (a.iv) Landslides: No Impact. The project site is generally flat and is not located near steep slopes with unstable soils that may be susceptible to landslides. Also, the greater project area is not noted for unstable geologic formations susceptible to landslides (DOC 2015). Therefore, the project would not cause potential substantial adverse effects, including the risk of loss, injury, or death involving a landslide. There would be no impact, and no mitigation would be required.

Question (b) Soil erosion: Less-than-significant Impact. Construction of the modified dairy facilities could result in temporary soil erosion and the loss of topsoil due to construction activities, including removal of portions of the existing animal shelter, and grading and site preparation for the proposed freestall barn. The existing site is generally level and has been leveled for existing activities; therefore, construction of the project's proposed freestall barn would not significantly change the project site topography or ground surface relief. Therefore, this would be a less-than-significant impact, and no mitigation would be required. For a discussion of potential significant effects due to sedimentation during the construction period of the project, see Section X, *Hydrology and Water Quality*.

Question (c) Unstable geologic unit: Less-than-significant Impact. Construction of the new freestall barn could increase loads on the project site that could cause soil settlement. The project area is not noted for unstable geologic formations susceptible to landslide or ground failure, nor is the project area noted for subsidence[3] (DOC 2015; Merced County 2013c; Merced County 2013d). In addition, the topography surrounding the active dairy facilities and agricultural field elevations is generally level. Any potential effects from unstable or expansive soils would be minimized through compliance with the Merced County and CBC building standards and additional corrective engineering measures that would be required to be documented during the building permit process, including the submittal of a soils report. For these reasons, the proposed dairy modification project would not result in soil instability and subsequent landslide, lateral spreading, liquefaction, or collapse. This would be a less-than-significant impact, and no mitigation would be required.

Question (d) Expansive soils: Less-than-significant Impact. Expansive soils are soils that shrink and swell in response to changes in moisture. These volume changes can result in damage

[3] Subsidence is the settling or sinking of land. In Merced County, this is generally resulting from groundwater extraction and drawing down of the groundwater table.

over time to building foundations, roads, underground utilities, and other structures, if they are not designed and constructed appropriately to resist the changing soil conditions. The main limitations of the soil type found on-site are flooding, shrink-swell potential, and depth to saturated zone (NRCS 2020). When leveled, the soil types present on the project site are considered to be suitable for developed uses with proper design and construction (NRCS 2013). The Merced County building code, however, requires a soils report for most non-residential structures within Merced County, and additional corrective engineering measures are required as part of the design for the dairy facilities. Further, the proposed agricultural facilities would not be used for human habitation. Compliance with the CBC requirements and additional corrective engineering measures documented during the building permit process would reduce risks on the project site from geological hazards to levels considered acceptable for the State and region. This would be a less-than-significant impact, and no additional mitigation would be required beyond compliance with adopted standards and County requirements.

Question (e) Soils adequately support septic system: No Impact. The proposed dairy modification does not include the installation or expansion of a septic system, and the proposed dairy modification would not impact existing subsurface sewage disposal systems. Therefore, no impact would result, and no mitigation would be required.

Question (f) Paleontological resource / unique geologic feature: Less-than-significant Impact. According to available information, the project site is not located in an area known to have produced significant paleontological resources (CCIC 2016), nor are there any unique geologic features. Therefore, project construction would not result in the destruction or degradation of paleontological resources or unique geological features. This would be a less-than-significant impact, and no mitigation would be required.

VIII. GREENHOUSE GAS EMISSIONS	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			**X**	
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			**X**	

ENVIRONMENTAL SETTING

Global Warming is a public health and environmental concern around the world. As global concentrations of atmospheric greenhouse gases increase, global temperatures increase, weather extremes increase, and air pollution concentrations increase. Global warming and climate change has been observed to contribute to poor air quality, rising sea levels, melting glaciers, stronger storms, more intense and longer droughts, more frequent heat waves, increases in the number of wildfires and their intensity, and other threats to human health (IPCC 2013). The five warmest years in the 1880–2019 record have all occurred since 2015, while nine of the 10 warmest years have occurred since 2005; the year 2019 was the second warmest year in the 140-year record. The global annual temperature has increased at an average rate of 0.07°C (0.13°F) per decade since 1880 and over twice that rate (+0.18°C / +0.32°F) since 1981 (NOAA 2020). Hotter days facilitate the formation of ozone, increases in smog emissions, and increases in public health impacts (e.g., premature deaths, hospital admissions, asthma attacks, and respiratory conditions) (EPA 2017). Because oceans tend to warm and cool more slowly than land areas, continents have warmed the most. If greenhouse gas emissions continue to increase, climate models predict that the average temperature at the Earth's surface is likely to increase by over 1.5ºC by the year 2100 relative to the period from 1850 to 1900 (IPCC 2013)

The Greenhouse Effect (Natural and Anthropogenic)

The Earth naturally absorbs and reflects incoming solar radiation and emits longer wavelength terrestrial (thermal) radiation back into space. On average, the absorbed solar radiation is balanced by the outgoing terrestrial radiation emitted to space. A portion of this terrestrial radiation, though, is itself absorbed by gases in the atmosphere. The energy from this absorbed terrestrial radiation warms the Earth's surface and atmosphere, creating what is known as the "natural greenhouse effect." Without the natural heat-trapping properties of these atmospheric gases, the average surface temperature of the Earth would be below the freezing point of water (IPCC 2007). Although the Earth's atmosphere consists mainly of oxygen and nitrogen, neither plays a significant role in this greenhouse effect because both are essentially transparent to terrestrial radiation. The greenhouse effect is primarily a function of the concentration of water vapor, carbon dioxide, methane, nitrous oxide, ozone, and other trace gases in the atmosphere that absorb the terrestrial radiation leaving the surface of the Earth (IPCC 2007). Changes in the atmospheric concentrations of these greenhouse gases can alter the balance of energy transfers between the atmosphere, space, land, and the oceans. Radiative forcing is a simple measure for both quantifying and ranking the many different influences on climate change; it provides a limited measure of climate change as it does not attempt to represent the overall climate response (IPCC 2007). Holding everything else constant, increases in greenhouse gas concentrations in the atmosphere will likely contribute to an increase in global average temperature and related climate changes (EPA 2017).

Greenhouse Gases

Naturally occurring greenhouse gases include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, emitted solely by human activities. There are also several gases that, although they do not have a direct radiative forcing effect, do influence the formation and destruction of ozone, which does have such a terrestrial radiation absorbing effect. These gases, referred to here as ozone precursors, include carbon monoxide (CO), oxides of nitrogen (NO_X), and non-methane volatile organic compounds (NMVOC). Aerosols (extremely small particles or liquid droplets emitted directly or produced as a result of atmospheric reactions) can also affect the absorptive characteristics of the atmosphere.

Carbon is stored in nature within the atmosphere, soil organic matter, ocean, marine sediments and sedimentary rocks, terrestrial plants, and fossil fuel deposits. Carbon is constantly changing form on the planet through a number of processes referred to as the carbon cycle, which includes but is not limited to degradation and burning, photosynthesis and respiration, decay, and dissolution. When the carbon cycle transfers more carbon to the atmosphere this can lead to global warming. Over the last 300 years atmospheric levels of carbon have increased by more than 30 percent, of which approximately 65 percent is attributable to fossil fuel combustions and 35 percent is attributed to deforestation and the conversion of natural ecosystems to agricultural use (Pidwirny 2006). Carbon stored in plants and rocks is referred to as being sequestered. Within the United States, forest sequestration of carbon offset approximately 13 percent of the fossil fuel GHG emissions in 2011, and from 10 to 20 percent of U.S. emissions each year (USDA 2012).

In 2016 in the United States, energy and transportation related activities accounted for the majority of human-generated greenhouse gas emissions, mostly in the form of carbon dioxide emissions from burning fossil fuels. The major sources of GHG emissions in the U.S. include electricity production (28 percent), transportation (28 percent), industrial processes (such as the production of cement, steel, and aluminum) (22 percent), commercial and residential (11 percent), and agriculture (9 percent). Total U.S. emissions have increased by 2.4 percent from 1990 to 2016, and emissions decreased from 2015 to 2016 by 1.9 percent (126.8 MMT CO2 Eq.). The decrease in total greenhouse gas emissions between 2015 and 2016 was driven in large part by a decrease in CO_2 emissions from fossil fuel combustion. (EPA 2018[4])

California Greenhouse Gas Emissions

California carbon dioxide equivalent emissions were approximately 429 million metric tons in 2016[5], which represent a declining trend since 2007. During the 2000 to 2016 period, per capita GHG emissions in California have continued to drop from a peak in 2001 of 14.0 metric tons per person to 10.8 metric tons per person in 2016, a 23 percent decrease. Of GHG emissions from within California, approximately 41 percent is from transportation, 23 percent is from industrial, over 16 percent from electric power, 7 percent residential, and 5 percent commercial. Agriculture, including fuel use by agricultural support activities, comprises nearly 8 percent of the state's GHG emissions (ARB 2018).

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4 As of February 2020, the 1990 to 2016 greenhouse gas emissions inventory is the most recent approved source of data available for the United States.

5 While the 2000 to 2017 greenhouse gas emissions inventory for California has been issued, the 2000 to 2016 report was used for comparative purposes to the U.S. inventory.

Agricultural activities are the dominant source of GHG emissions within Merced County (69 percent of total 2010 emissions in unincorporated Merced County, and 42 percent of total 2010 countywide emissions, including the incorporated cities). Transportation activities are the second leading source of GHG emissions (23 percent in unincorporated Merced County and 39 percent in total Merced County during 2010) (Merced County 2013f).

REGULATORY FRAMEWORK

The U. S. EPA is the federal agency responsible for implementing the CAA. The U.S. Supreme Court ruled on April 2, 2007 that CO_2 is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. However, there are no federal regulations or policies regarding GHG emissions thresholds applicable to the proposed project at the time of this Initial Study.

Under the Final Mandatory Reporting of Greenhouse Gas Rule, suppliers of fossil fuels or industrial GHGs including carbon dioxide, methane, nitrous oxide, and fluorinated gases; manufacturers of vehicles or engines; and facilities that emit more than 25,000 metric tons or more per year of GHGs are required to submit annual reports to EPA. Large agricultural operations with manure management systems may be affected by the EPA rule. The minimum average annual animal population for dairies to emit 25,000 metric tons per year or more of GHG is 3,200 dairy cows. Operators of facilities with less than 3,200 dairy cows will likely not need to report under this rule. Congressional action, however, has blocked the rule's application to livestock manure management, and continued a provision prohibiting the expenditure of funds for this purpose (EPA 2017b).

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California, and for implementing the CCAA. Various statewide and local initiatives to reduce the state's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is under way, and there is a real potential for severe adverse environmental, social, and economic effects in the long-term. Because every nation emits GHGs, and therefore makes an incremental cumulative contribution to global climate change, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can help to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

In September 2006, then-Governor Schwarzenegger signed AB 32, the California Climate Solutions Act of 2006. AB 32 established regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. In 2011, the ARB adopted the cap-and-trade regulation. The cap-and-trade program covers major sources of GHG emissions in the State such as refineries, power plants, industrial facilities, and transportation fuels. The cap-and-trade program includes an enforceable emissions cap that will decline over time. The State will distribute allowances, which are tradable permits, equal to the emissions allowed under the cap.

The initial main strategies and roadmap for meeting the 1990 emission level reductions are outlined in a Scoping Plan approved in December 2008 and updated every five years (the Scoping Plan was most recently updated in 2014 and finalized in 2017). The Scoping Plan includes regulations and alternative compliance mechanisms, such as monetary and non-monetary incentives, voluntary

actions, and market-based mechanisms, such as a cap-and-trade program. The Climate Change Scoping Plan also includes a breakdown of the amount of GHG reductions the ARB recommends for each emissions sector of the state's GHG inventory. In January 2017, ARB issued the proposed 2017 Climate Change Scoping Plan Update to reflect the 2030 target set by Executive Order B-30-15.

As the sequel to AB 32, Senate Bill (SB) 32 was approved by the Governor on September 8, 2016. SB 32 would require the state board to ensure that statewide greenhouse gas emissions are reduced to 40 percent below the 1990 level by 2030. 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 former Governor Schwarzenegger in 2005 with Executive Order S-3-05. As set forth in the Scoping Plan, no state regulatory requirements are to go into effect prior to 2024 requiring livestock sector methane reductions to meet AB 32's 2020 reduction goals or SB 32's 2030 goals for reducing GHG emissions. The reduction of methane emissions from livestock operations will continue to be voluntary at least through 2023.

The ARB issued a Short-Lived Climate Pollutant Reduction Strategy (SLCP Strategy) in March 2017, which lays out a range of options to accelerate SLCP emission reductions in California, including regulations, incentives, and other market-supporting activities. Recent legislation (AB 1613 and SB 859) includes a spending plan for Cap-and-Trade revenues that specifically target SLCP emission reductions. These include $5 million for black carbon wood smoke reductions, $40 million for waste reduction and management, $7.5 million for Healthy Soils, and $50 million for methane emission reductions from dairy and livestock operations.

Merced County Greenhouse Gas Reduction Plans

Merced County does not yet have a Climate Action Plan (CAP) or energy plan. The County is in the process of preparing a Climate Action Plan, with anticipated completion some time in 2020.

Merced County General Plan. There are several policies in the General Plan that also seek to reduce GHG emissions, including promoting alternative energy sources and encouraging methane digesters for agricultural operations, among others. The policies that are relevant to the proposed project include:

Policy NR-2.9: Energy Conservation

Encourage and maximize energy conservation and identification of alternative energy sources (e.g., wind or solar).

Policy AQ-1.3: Agricultural Operations Emission Reduction Strategies

Promote greenhouse gas emission reductions by encouraging agricultural operators to use carbon efficient farming methods (e.g., no-till farming, crop rotation, cover cropping); install renewable energy technologies; protect grasslands, open space, oak woodlands, riparian forest and farmlands from conversion to other uses; and develop energy-efficient structures.

SIGNIFICANCE THRESHOLDS

Merced County has not established significance criteria for GHG emissions. Many adopted GHG emission reduction strategies have few or limited agricultural measures, making compliance with these strategies as a threshold an illogical choice. In an effort to capture both large increases in GHG emissions and large emitters of GHGs, for the purposes of this IS, the project's contribution to GHG emissions would be considered significant if either of the following apply:

- The increment of increase of the project's GHG emissions would be greater than 10,000 t/yr of CO_2e.
- The increment of increase of the project's GHG emissions would be less than 10,000 t/yr of CO_2e, but the total project facility's GHG emissions (existing plus project increment) would be greater than 25,000 t/yr of CO_2e.

This numeric threshold would only be applicable to animal confinement facilities, and would not apply to industrial, commercial, residential, or other development types.

ENVIRONMENTAL ANALYSIS

Question (a) Generate GHG emissions: Less-than-significant Impact. Greenhouse gases associated with operations of confined animal and agricultural activities include methane, nitrous oxide, ozone, and carbon dioxide. Several sources of these greenhouse gases are associated with animal confinement facilities: animal metabolic activity and animal housing; manure decomposition in waste deposits, treatment and storage areas, and field applied manure; on-field cultivation; fuel consumption; electricity use; and feed cultivation and transport.

Milk production is the commercial dairy operation's single largest source of GHG emissions, at approximately 59 percent of total emissions. On the dairy farm, the most significant source of greenhouse gas emissions is the dairy cow: estimates of 35-80 percent (mean 50 percent) of GHG emissions are due to methane from enteric fermentation. Growing feed, both on dairies and crop farms, is milk's second most GHG-intensive process (Wightman 2008). The primary sources of these emissions include the production of commercial fertilizer, fuel use in machinery, and on-field production of nitrous oxide due to nitrification and denitrification of nitrogen (both chemical and organic) (Innovation Center 2008). Approximately 9-53 percent (mean 30 percent) of GHG emissions are from nitrous oxide emissions (manure management and nitrous fertilizers), and 16 percent of GHG emissions are from carbon dioxide coming from tractors, trucks, and electricity production (IDF 2009).

Studies have shown that the use of best management practices, rather than the size or location of the dairy farm, makes the biggest difference in reducing GHG emissions (Innovation Center 2013; Paustian et. al. 2006). No provisions of the Animal Confinement Ordinance (ACO) or SJVAPCD regulations directly address methane or CO_2 emissions, but Chapter 18.64.050 U of the ACO applies to air emissions in general (see Appendix A, bound separately). Because the decomposition of manure is one source of methane emissions, measures to comply with ROG limitations required by Chapter 18.64.050 U and a SJVAPCD Permit to Operate would also reduce methane emissions.

Construction activities associated with the Nunes Dairy Expansion project would result in short-term CO_2 emissions, a greenhouse gas. Construction-related emissions were calculated using the CalEEMod Version 2016.3.2. The proposed project is estimated to result in maximum annual emissions of 290.5 metric tons of carbon dioxide equivalents (CO_2e) over the construction period (see calculations in Appendix C).

The proposed expansion includes an overall increase of 824 cows. Based on the SJVAPCD dairy calculator (dated May 7, 2019), GHG emissions from the increased herd would be 5,505 metric tons CO_2e per year (see Appendix C). Average daily trips at the farm would increase by approximately 5.3 heavy truck trips. Mobile source GHG emissions from project trips is estimated at 6 metric tons CO_2e annually (see CalEEMod data in Appendix C). Additional operational GHG emissions would

result from increased electricity use. Based on information from the Nunes Dairy electricity bills, it is estimated that the proposed expansion would result in approximately 49 metric tons CO_2e per year from increased secondary GHG emissions from electricity use (see Appendix C for GHG emission calculations from electricity use). Since there is no change in cropland associated with the project, there would be no increase in GHG emissions from field cultivation. Based on these estimates, the project would result in a net increase of 5,560 metric tons CO_2e per year from existing operations, which is less than the 10,000 t/y CO_2e significance threshold, and a less-than-significant impact due to GHG emissions would occur with the proposed project.

Because the proposed project would not exceed established significance thresholds for GHG emissions, GHG emissions would not be expected to be significant, and the project would not be expected to make a substantial contribution to the cumulatively significant impact of global climate change. A less-than-significant impact would result, and no mitigation would be required.

Question (b) Conflict with GHG emissions reduction plans: Less-than-significant Impact. The ARB's Climate Change Scoping Plan represents the primary plan to reduce GHG emissions throughout California. This Plan is designed to reduce California's statewide 2020 GHG emissions by 29 percent as compared to the 2020 Business As Usual scenario and a 2030 GHG emissions reduction target of 40 percent below 1990 levels ARB 2014 and 2017). Due to limited research, and the wide variety of farm sizes, animals, and crops produced, there are few emission reduction or carbon sequestration strategies that can be generally applied to the agricultural sector. Therefore, the key recommended actions in the Scoping Plan for the agriculture sector primarily consist of developing more detailed recommendations and standards to be implemented in the near- and long-term future. Reasonably foreseeable compliance responses associated with the agriculture sector recommendations consist of nitrogen management, manure management, soil management practices, water and fuel technologies, and land use planning to enhance, protect, and conserve lands in California. Senate Bill 1383: Short-lived Climate Pollutants (2016) includes regulations to reduce methane emissions from livestock manure and dairy manure management operations by up to 40 percent below the dairy sector's and livestock sector's 2013 levels by 2030, including establishing energy infrastructure development and procurement policies needed to encourage dairy biomethane projects. The regulations will remain voluntary until they take effect on or after January 1, 2024 (ARB 2017).

The Long Term Energy Efficiency Strategic Plan identifies energy reduction goals for the agricultural sector, with emphasis on reducing energy from agricultural pumping. At this time, the highest priority identified in the Strategic Plan is to conduct baseline studies to understand the energy usage patterns in California's agricultural sector in order to design a cohesive strategy to pursue all cost-effective energy efficiency measures. The GHG gas reduction plans and supporting regulations cited above and in the regulatory setting of this chapter contain strategies that would also result in increased energy efficiency or support renewable energy on dairy farms. The Scoping Plan, the Long Term Energy Efficiency Strategic Plan, SB 1383, and other GHG emissions reduction, renewable energy, and energy efficiency plans and regulatory measures do not include regulatory requirements immediately applicable to the agricultural sector; rather, as a result of these plans, agencies may establish rules in the future that could apply to the proposed dairy expansion project. Any future animal confinement facility expansion project would have to go through the local permitting process, and would have to adhere with the rules in place at that time.

Currently, there are no state, regional, or local policies or requirements in place that are specifically applicable to the project that would result in the reduction of greenhouse gas emissions or the promotion of renewable energy or energy efficiency. Because standards for the reduction of greenhouse gas emissions or increase in energy efficiency in the agricultural sector are not currently in place, the proposed project would not conflict with any plans or regulations adopted for the purpose of reducing the emissions of greenhouse gases or promoting renewable energy or energy efficiency.

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

ENVIRONMENTAL SETTING

Animal agriculture, such as a dairy, results in the production of copious amounts of manure. Animal wastes contain zoonotic pathogens, which are viruses, bacteria, and parasites of animal origin that cause disease in humans.

Standard dairy operation chemicals are used at the milk barn and picked up by the distributor. Round Up is used in maintaining the on site farm roads, wastewater storage pond, and settling basin to control weeds. There is one diesel generator on site. (Project Applicant 2020)

According to the records search of federal, state, and local environmental databases (pursuant to Government Code Section 65962.5), the project site does not contain any history of contamination by hazardous substances (CA DTSC 2020).

There are no schools located within one-quarter mile of the proposed project site. The nearest school is located in the city of Merced, approximately two miles from the project site (Google Earth 2020). The Merced Municipal Airport lies approximately four miles west-northwest of the project site; however, the project site is not located within the Airport Influence Area as indicated in the Merced County Airport Land Use Compatibility Plan (Merced County ALUC 2012). According to

the 2030 Merced County Emergency Operations Plan, freeways and major county roads, including those adjacent to the project site, would be used as primary evacuation routes in the event of a natural hazard, technological hazard, or domestic security threat.

According to California Fire and Resource Management Program Fire Hazard Severity Zone map, the proposed project area is within the Local Responsibility Area (LRA), with an Unzoned designation. The threat of wildfire hazard in that area is determined to be unlikely (CAL FIRE 2008).

The proposed project site is not in an area identified by the California Geological Survey as having soils that are likely to contain naturally occurring asbestos (USGS 2011). Therefore, no naturally occurring asbestos is expected in on-site soils that could be disturbed during construction; this issue will not be discussed further.

REGULATORY SETTING

Both federal and state laws include provisions for the safe handling of hazardous substances. The federal Occupational Safety and Health Administration (OSHA) administers requirements to ensure worker safety. Construction activity must also be in compliance with the California Occupational Safety and Health Administration regulations.

The Merced County Division of Environmental Health is the lead agency for the enforcement of State Hazardous Waste Control laws and regulations. The DEH maintains standards and guidelines relating to the proper handling and storage of hazardous materials. Facilities that handle and store considerable amounts of hazardous materials (55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gas) are required to implement a Hazardous Materials Business Plan. The HMBP must include the following: an inventory of all hazardous materials handled at the facility, floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures. The DEH also maintains minimum design standards relating to the operation and maintenance of on-site septic systems.

ENVIRONMENTAL EVALUATION

Questions (a) and (b) Use and/or accident conditions related to hazardous materials: Less-than-significant Impact. Construction of the proposed project would include the use, storage, transport, and disposal of oil, diesel fuel, paints, solvents, and other hazardous materials. If spilled, these substances could pose a risk to the environment and to human health. Both federal and state laws include provisions for the safe handling of hazardous substances. According to federal health and safety standards, applicable federal OSHA requirements would be in place to ensure worker safety. Construction activity must also be in compliance with the California Occupational Safety and Health Administration regulations (Occupational Safety and Health Act of 1970).

Nutrient-rich process water would continue to be used to fertilize on-site crops, thereby precluding the need for large amounts of chemical fertilizers and minimizing the potential risk of release within the project area and region. Similarly, dry manure would continue to be accumulated on site, and then hauled off site for use as fertilizer and soil amendments in place of chemical fertilizers.

Previous evaluations of animal confinement facility operations conducted by Merced County (Merced County Animal Confinement Ordinance Revision DEIR, February 2002; Vander Woude Dairy FEIR Staff Presentation to Planning Commission, March 30, 2004) indicate that the following activities and operations at dairies would not result in the release of hazardous substances to the environment:

Potential Source	Explanation	Information Source
Supplements in cattle feed	No complete exposure pathways	Animal Confinement Ordinance DEIR, February 2002, pps. 5-141 to 5-145
Genetically modified crops (grown as forage for dairy animals)	Cattle digestive process breaks down components in feeds, including protein into amino acids, and DNA into nucleic acids, that are then excreted; Unpublished research indicates no adverse effects on dung beetles from ingesting manure from cows feeding on Bt corn; Incomplete exposure pathway **GENETICALLY MODIFIED CORN IS GROWN AT THE PROJECT SITE**	Vander Woude Dairy FEIR, January 2004, pps. 3-42 to 3-43; Staff Presentation to Planning Commission, March 30, 2004, slides 19 and 25
Recombinant Bovine Growth Hormone	bST is a complex protein that is immediately broken down into small, inactive amino acids and peptides and rendered ineffective when it enters a cows digestive system; Incomplete exposure pathway **NOT USED AT THE DAIRY**	Vander Woude Dairy FEIR, January 2004, pps. 3-42 to 3-43; Staff Presentation to Planning Commission, March 30, 2004, slides 19 and 25
Antibiotics	Use of antibiotics is prohibited for the milking herd **ANTIBIOTICS ARE USED ONLY AS PRESCRIBED ON SICK COWS ISOLATED IN A HOSPITAL PEN**	Vander Woude Dairy FEIR, January 2004, pps. 3-42 to 3-43; Staff Presentation to Planning Commission, March 30, 2004, slides 19 and 25

No proposed operation or facility of the Nunes Dairy would alter the results of these previous evaluations regarding the release of hazardous substances to the environment from dairy operations.

Both construction and operation activities must be in compliance with the California OSHA regulations. The proposed operations would continue to store and use diesel fuels and other chemicals commonly used for animal confinement operations. The storage of any hazardous material on site over threshold quantities (55 gallons; 200 cu. ft.; or 500 pounds) would require a HMBP to be filed with the Merced County DEH. Any quantity of hazardous waste generated on site also requires that a HMBP be filed. Compliance with these requirements would reduce the risk of hazards related to the routine transport, use, or disposal of hazardous materials to a less-than-significant level. The risk of hazards to the public or to environmental conditions related to accident conditions would also be reduced to a less-than-significant level.

For a discussion of impacts to water quality as a result of increased export of dry manure and associated pathogens and residual contaminants, see Section X, *Hydrology and Water Quality*.

Because the routine transport, use, and disposal of these materials are subject to local, state, and federal regulations, this impact would be considered less than significant. The risk of hazards to the

public or to environmental conditions related to accident conditions would also be reduced to a less-than-significant level, and no mitigation would be required.

Question (c) Hazardous emissions or materials near a school: No Impact. The nearest schools to the animal confinement facilities are located approximately two miles from the project site in the city of Merced. Therefore, the proposed dairy modification would not result in hazardous emissions or handle hazardous waste within 0.25 miles of an existing or proposed school, and no impact would result.

Question (d) Included on list of hazardous materials sites: No Impact. According to queries of the GeoTracker and Envirostor Data Management Systems, the dairy expansion project site would not be located on a site identified on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5. Therefore, implementation of the project would not create a significant hazard to the public or the environment. There would be no impact, and no mitigation would be required.

Question (e) Safety hazard or excessive noise near airports: No Impact. There are no existing public airports within two miles of the proposed project site, nor is the project site located within an area regulated by an airport land use plan (Merced ALUC 2012). Therefore, the project would not result in a safety hazard or excessive noise for people residing or working in the project area due to aircraft over-flight. There would be no impact, and no mitigation would be required.

Question (f) Impair or interfere with an adopted emergency response/evacuation plan: Less-than-significant Impact. The proposed active dairy facilities and crop fields within the project site are located near South Healy Road, a minor collector, and State Route 99, a designated expressway (Merced County 2013g). The proposed project does not include any modification of existing area roadways or intersections, and the project would not add significant amounts of traffic that would interfere with emergency response or evacuation. Therefore, the proposed project would result in a less-than-significant impact, and no mitigation would be required.

Question (g) Exposure to risk involving wildland fires: No Impact. The Fire Hazard Severity Zone map for Merced County indicates that the project site and surrounding area is located in the Non-Wildland / Non-Urban Severity Zone (Merced County 2013h). The project site is designated as a Local Responsibility Area – Unincorporated in an area not considered a fire risk (CAL FIRE 2008). Therefore, no hazard would occur related to risk of loss, injury, or death due to wildland fire with implementation of the proposed project. There would be no impact, and no mitigation would be required.

Question (h) Nuisance Insects: Less-than-significant Impact after Mitigation. While the existing agricultural character of the project vicinity tends to minimize incompatibility to existing uses, implementation of the Nunes Dairy project could introduce an additional source of flies and other insects in the area of adjacent residences. The operators of the Nunes Dairy currently hire a pest control service to minimize the fly population on the dairy site. The service includes bi-monthly visits to the residences and milking parlor. Fly bait is applied by employees as needed (Project Applicant 2020). These practices would continue with implementation of the proposed modification project.

In efforts to minimize agricultural nuisances, Merced County imposes a required minimum setback between new or expanded confined animal facilities and individual off-site rural residences of 1,000 feet, and the construction of new off-site dwellings is prohibited within 1,000 feet of an existing animal confinement facility. For the Nunes Dairy project, there are five off-site residences located within 1,000 feet of the existing facility (see Figure 6).

According to Merced County Code Chapter 18.64.040 (B)(2), the modification or expansion of an existing facility must not decrease the existing separation distance from off-site residences that are less than 1,000 feet unless the off-site property owner provides written permission. Construction of the proposed freestall barn would occur within the existing footprint of active dairy operations. The proposed modification would not reduce the distance to any off-site residence.

The ACO prohibits new dairies within one-half mile of urban areas, areas zoned for residential uses, concentrations of rural residences, sensitive uses such as schools, hospitals, jails, public or private recreational areas, parks, and wildlife refuges (Merced County Code Chapter 18.64.040 (B)(1)(a)). According to Merced County Code Chapter 18.64.040 (B)(2), if the animal confinement facility is located within the minimum setback distance, the modification or expansion of an existing facility must not decrease the existing separation distance from these areas. There are no residentially zoned areas or concentrations of rural residences within the 0.5-mile setback distance (Merced County GIS 2020). The community of Merced and its City boundary are located approximately 0.7 miles from the active dairy facilities.

The DEH has responsibility for the maintenance of public health in the county. As required by the DEH, the methods for insect control must be described in a Vector Control Plan as outlined in Chapter 18.64.055 C.8.c of the ACO (see Appendix C). A Vector Control Plan has been prepared for the Nunes Dairy (November 2019). The Plan includes Best Management Practices aimed to provide a reduction in vector populations.

DEH enforces the operational measures of each Vector Control Plan through periodic random inspections, and by requiring the annual submittal of compliance reports. The DEH also responds to complaints from neighbors of such facilities as described above. No current or active fly complaints have been reported and submitted to DEH regarding the Nunes Dairy (E. Canal, pers. comm., 2020).

As required by the ACO, DEH must implement the following procedures if nuisance insect conditions are reported at, or adjacent to, the animal confinement facility:

A. If fly nuisance conditions are reported to the Division of Environmental Health, the Division shall take the following actions:

   Within 72 hours of receiving a complaint, the Division of Environmental Health shall determine the species and population density of a fly population during an inspection of the location of the complaint, and identify potential sources of flies in the vicinity. At the location of the nuisance complaint, the County will seek to identify access points, identify attractants, and locate breeding sites. If an animal confinement facility is identified as a potential source of the fly nuisance, the County will evaluate the affected herd, identify sources of the fly population, and evaluate weather conditions. In general, an infestation would be indicated by insect pests found on over 25 percent of the animals sampled during monitoring, or by the presence of substantial breeding areas. In the event of

infestation causing a nuisance, the County will impose additional control measures on a site-specific basis. Measures that may be required by DEH include both biological and/or chemical pest control methods.

B. If fly nuisance conditions are confirmed, and are attributable to operations at an animal confinement facility, the Division of Environmental Health shall require the owner/operator to remedy the nuisance condition within a specified period of time. The Division shall notify the parties reporting the nuisance of its findings, and shall provide follow-up inspections to ensure that the nuisance condition is cured. Should the condition persist, the Division shall initiate an enforcement action against the offending operator.

Management measures previously adopted by the County in the EIR for the ACO would apply to the proposed project as included in Mitigation Measure HAZ-1. Because the nearest off-site residence is located less than 1,000 feet from proposed active dairy facilities and the proposed expansion could result in an increase in flies, there is an increased potential for nuisance conditions, and the following mitigation would be required.

Mitigation Measure HAZ-1:

The following operational measures identified in the EIR for the ACO shall be implemented prior to obtaining a building permit and throughout ongoing operations.

1. All confined animal facilities shall implement the following Best Management Practices to address potential fly problems:
    a. Daily inspection of manure flushing systems to ensure that manure is being effectively removed from flushed areas, with particular attention paid to corners and isolated areas;
    b. Daily inspections of water supply and circulation systems to ensure that any leaks are promptly repaired. These inspections shall include all watering troughs to ensure that mechanisms for controlling water level are operating effectively and are protected from damage;
    c. Regular blading of feeding lanes in freestall barns and corrals to ensure that spilled feed is promptly removed and disposed;
    d. Daily removal of manure and spilled feed from stalls in freestall barns;
    e. Scraping of corrals at least twice a year to minimize the potential for development of fly populations on manure;
    f. Weekly inspection of silage storage areas to ensure proper covering, drainage, and removal of any spoiled silage;
    g. Weekly inspection of fence lines of corrals and other "edge" areas, and removal of any accumulated manure;
    h. Periodic monitoring of stable flies by direct observation and counting of the number of stable flies on the legs of a representative number, minimum of two percent, of the support stock herd;
    i. All exterior doors and windows in milk rooms shall have screens that are inspected monthly to determine if they are working properly, and to identify rips in the screening. Ripped or otherwise damaged screens shall be repaired or replaced immediately;

j. If necessary, flytraps shall be set throughout barns at strategic locations. The traps are inspected monthly, or more frequently if necessary, and replaced when saturated with captured flies.

2. In addition to fly management practices in the cattle housing and milking areas of dairy facilities, the following sanitation practices shall be implemented at animal confinement facilities to control fly populations:

   a. Dead animals shall be stored in a secured area at the dairy facility, and off-site rendering plant operators shall immediately be notified for pickup of carcasses. Carcasses must be removed within three business days pursuant to ACO Section 18.64.005(A);
   b. Residual feed shall be removed from infrequently used feeding areas;
   c. All garbage shall be disposed of in closed dumpsters that are regularly emptied by a contracted waste management service for off-site disposal;
   d. Grass and other landscape clippings shall be removed from the site for off-site disposal or reuse (as feed or soil amendment).

Implementation of the foregoing measures and measures included in the Nunes Dairy Vector Control Plan would reduce the magnitude of this potential effect by requiring housekeeping and management measures to reduce the incidence of nuisance insects for nearby residents. While there may be an increased potential for nuisance conditions with the dairy modification, the proposed modification would not reduce the setback distances specified by the ACO. With implementation of the above mitigation measures, the potential impact from nuisance flies would be reduced to less-than-significant levels. No additional mitigation would be required.

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

ENVIRONMENTAL SETTING

Dairies, feedlots, and other confined animal facilities pose a number of potential risks to water quality, primarily related to the amount of manure and wastewater that they generate. Manure and wastewater from animal confinement facilities can contribute pollutants such as nutrients (nitrogen), ammonia, phosphorus, organic matter, sediments, pathogens, hormones, antibiotics, and total dissolved solids (salts). These pollutants, if uncontrolled, can cause several types of water quality impacts, including contamination of drinking water, impairment of irrigation systems, and impairment of surface water and groundwater.

The project site is located in an active agricultural district in the San Joaquin Valley and within the larger Central Valley of California. The topography of the site is nearly flat with surface elevations ranging from 180 to 185 feet above mean sea level. There are Merced Irrigation District (MID) surface water canals within the vicinity of the project site, and Koff Lateral is located immediately north of the project site. Both Owens Creek and Miles Creek are located north of the project site.

The existing facility consists of flush and scrape systems that are used to collect and process wastewater and solid manure. Animal wastes from freestall and other concrete-surfaced areas are flushed with recycled water to an on-site waste management system that consists of two solid settling basins and a wastewater storage pond (retention pond). The area of active dairy facilities has been graded to direct corral runoff to the existing waste management system. Stormwater runoff from impervious surfaces and roofed areas is routed to the wastewater pond, except for rainwater

from a barn roof, which is routed to a nearby yard. Recycled water is used to clean the milk parlor floor and is the source of sprinkler pen water. The settling basins are monitored and solids are removed from the surface as necessary using an excavator.

Dry manure is removed from corrals twice a year, usually in the spring and fall after harvest. The dry manure is stockpiled before it is used as bedding, hauled offsite as piles accumulate, or processed for application to cropland for use as fertilizer and soil amendments. Manure solids are separated in the solids settling basins with 50 percent solids separation efficiency – there is no mechanical separator. Approximately 3,500 tons of solid manure (or 45 percent of previously separated solids) is exported and applied to offsite fields.

Wastewater is mixed with irrigation water supplied by Merced Irrigation District (MID) canal surface water and groundwater from two farm irrigation wells and applied to cropland. Receiving fields are graded to guide excess applied wastewater to an existing tailwater return system or maintained on the project area with berms. Collected tailwater from Field 1 is recycled and pumped back to the top of the field for reapplication. Field application methods include flood irrigation, manure spreading, and injection (generally performed every two to three years).

Site Specific Hydrogeology

Regional groundwater in Merced County is composed of four subbasins of the San Joaquin Hydrologic Region: the Turlock, the Merced, the Chowchilla, and the Delta-Mendota. The project site lies within the Merced subbasin. Groundwater flow in the Merced Subbasin is generally to the west, towards the San Joaquin River. In general, groundwater depths are shallowest near the San Joaquin River and increase to the east as surface elevation increases.

California Department of Water Resources groundwater level records indicate that depth to groundwater for two wells near the project site has varied for the past seven years from 89 to 132 feet below ground surface from 2013 to 2020 (DWR 2020).

Domestic water is delivered to the site by several on-site water wells. Wastewater is mixed with irrigation water supplied by MID canal surface water and groundwater from two farm irrigation wells and applied to cropland.

Existing Water Quality

Water quality data collected as required by the General Order for Existing Milk Cow Dairies was available from October 2019 for the project site wells, summarized in Table 11. From the 2019 samples, no water quality exceedances were reported (see Table 11).

Table 11 Water Quality Sampling at the Nunes Dairy			
Sample Name	**Total Dissolved Solids (TDS) (mg/L)**	**Electrical Conductivity (EC) (mmhos /cm)**	**Nitrate as Nitrogen (mg/L)**
Water Quality Standard*	**500 – 1,000**	**0.9 - 1.6**	**10**
Irrigation Pump	395	0.726	8.28
MID Canal	< 10	<0.100	3.36
Big Well	235	0.411	1.56
Pump #1	175	0.325	8.60

Notes: Data collected October 3, 2019 for domestic and irrigation wells. **Bold: MCL exceedance**
ND - not detect. MCL - Maximum Contaminant Limit. mmhos /cm = mili-mhos/centimeter. mg/L = miligams/liter. ppm = parts per million.

* Nitrate as NO_3 is a California Title 22 Primary Maximum Contaminant Limit, which address health concerns. EC and Soluble Salts is a California Title 22 Secondary Maximum Contaminant Level goal. EPA Secondary MCLs are specific water quality aesthetics, taste, and odor.

Source: Compliance Analysis Report, Tony Nunes Dairy. Denele Analytical, Inc., 2019.

REGULATORY SETTING

Regional Water Quality Control Boards

General Order for Existing Milk Cow Dairies and Individual Waste Discharge Requirements

In general, the Waste Discharge Requirements (WDR) Program regulates point discharges that are exempt pursuant to Title 27 of the California Code of Regulations[6] and not subject to the Federal Water Pollution Control Act. In California, the permitting authorities for WDRs are the Regional Water Quality Control Boards (RWQCB). The CVRWQCB has jurisdiction over the project site. The CVRWQCB Reissued Waste Discharge Requirements General Order for Existing Milk Cow Dairies R5-2013-0122 (General Order) implements the State laws and regulations relevant to confined animal facilities. Under the General Order Waste Discharge Permit Program, Animal Feeding Operations are prohibited from discharging waste into surface water or into groundwater that is directly connected to surface water.

The General Order only applies to owners and operators of existing milk cow dairies (dischargers) in the Central Valley Region. For the purposes of the General Order, existing milk cow dairies are those that were operating as of October 17, 2005 and filed a Report of Waste Discharge (ROWD). Dairies that did not file a 2005 ROWD, new dairies, and existing dairies expanding the mature cow number established under the 2005 ROWD by greater than 15 percent are not covered under the General Order and are required to obtain coverage under Individual WDRs. All dairies covered under the General Order are required to:

- Comply with all provisions of the General Order,
- Submit a Waste Management Plan (WMP) for the production area,
- Develop and implement a Nutrient Management Plan (NMP) for all land application areas,

[6] Subsection 20090 of Article 1, Subchapter 2, Chapter 7, Division 2, Title 27 of the California Code of Regulations.

- Monitor wastewater, soil, crops, manure, surface water discharges, and storm water discharges,
- Monitor surface water and groundwater,
- Keep records for the production and land application areas, and
- Submit annual monitoring reports.

The General Order includes a provision that requires compliance with Monitoring and Reporting Program (MRP) R5-2013-0122. Under the MRP, and based on an evaluation of the threat to water quality at each dairy, the CVRWQCB may require the installation of monitoring wells to comply with the General Order MRP. The General Order and Individual WDRs also established the ability for individual dairies to participate in a Groundwater Representative Monitoring Program (RMP) as an alternative to an individual requirement for groundwater monitoring. The RMP establishes a regional monitoring network for the member dairies of the Central Valley Dairy Representative Monitoring Program (CVDRMP). The regional monitoring network is established by installing individual monitoring well networks at dairies with hydrogeologic and land use characteristics typical of the area. Groundwater monitoring results for these dairies are then extrapolated to other member dairies of the RMP, theoretically removing the need to install monitoring well networks on an individual basis.

Though the CVRWQCB recognizes that degradation of high-quality groundwater will still occur pursuant to the General Order, the implementation of nutrient management plans, waste management plans, enhanced management practices within the production area, and improved containment features for new and expanding dairy wastewater retention ponds will limit the amount of degradation that will occur under the General Order and will not cause long-term impacts to beneficial uses. Consistent with the State Anti-Degradation Policy, the General Order establishes requirements and standards that will result in the implementation of best practical treatment measures to limit the degradation caused by dairy discharges (General Order R5-2013-0122).

The Nunes Dairy operation is currently regulated under the Reissued Dairy General Order. As established by the ROWD submitted for the existing dairy to the CVRWQCB in October 2005, the State-permitted herd size for the dairy is 776 milk and dry cows combined[7], with regulatory review required for expansions of greater than 15 percent above this value (892 milk and dry cows combined). Since the proposed expansion would increase the mature cow number established under the WDR by greater than 15 percent, the proposed expansion would require a new individual WDR. The individual WDRs will be similar to the General Order. Planning documents related to General Order requirements include a Nutrient Management Plan and Waste Management Plan (see Appendix B, bound separately).

Nutrient Management Plan and Waste Management Plan. As required by the General Order, the NMP and WMP describe the regulatory requirements for the facility, and together they serve as the primary tool to prevent groundwater contamination and poor operations. The General Order establishes a schedule for dischargers to develop and implement their WMP and NMP, and requires them to make facility modifications as necessary to protect surface water, improve storage capacity, and improve the facility's nitrogen balance before all infrastructure changes are completed. In addition, Best Management Practices (BMP) intended to minimize surface water discharges and

[7] The CVRWQCB regulates only mature cows (milk and dry) and does not establish any limits on calves, heifers, and other support stock.

subsurface discharges at dairies are required. In compliance with the requirements of the CVRWQCB, the proponents of the Nunes Dairy Expansion have completed the required components of the WMP and NMP of the General Order.

The NMP/WMP planning process is used to implement BMPs for dairies. The NMP/WMP are planning documents used to describe facility operations, develop wastewater disposal options, and outline mitigation measures for each facility. These documents are required to be revised as appropriate for the operation. Specific elements related to the number and type of animals dictate the size of a facility, fresh/flush water needs, and wastewater generation. Nitrogen and salt balance calculations based on the herd description, housing requirements (i.e., flush freestalls or dry lots), acreage available for land application, and crop nutrient removal rates are made to determine the nitrogen and salt uptake for the proposed cropping pattern. On-site wastewater plans, storage elements, and storm water planning may be modified based on the calculations contained in the NMP/WMP.

As mandated by the ACO, a NMP/WMP in place of a Comprehensive Nutrient Management Plan (CNMP)[8] for the Nunes Dairy facility has been prepared pursuant to the requirements of the CVRWQCB (see Appendix B, bound separately). The NMP and WMP for the proposed dairy facility expansion, dated October 2017 and November 2019, respectively, have been used for the evaluation in this section. A separate NMP (dated February 2015) and WMP (dated October 2013) prepared to represent current operations were used to represent existing conditions.

Irrigated Lands Regulatory Program

A range of pollutants can be found in runoff from irrigated lands, such as pesticides, fertilizers, salts, pathogens, and sediment. The Irrigated Lands Regulatory Program (ILRP) of the CVRWQCB regulates discharges from irrigated agricultural lands throughout the Central Valley. Its purpose is to prevent agricultural discharges from impairing the surface waters that receive the discharges. To protect these waters, RWQCBs have issued conditional waivers of WDRs to growers that contain conditions requiring water quality monitoring of receiving waters and corrective actions when impairments are found. The Long-term Irrigated Lands Regulatory Program General Orders adopted by the RWQCB protect both surface water and groundwater throughout the Central Valley.

There is significant overlap between the ILRP and the Dairy Programs with regard to regulatory requirements, monitoring, and BMPs. The Nunes Dairy is not regulated under the ILRP program. However, the ILRP could regulate discharges from off-site agricultural operations receiving liquid or solid manure from the Nunes Dairy in the future.

Merced County

The Merced County ACO contains provisions to protect water quality. For example, Chapters 18.64.050 E and I of the ACO require that all wastewater or storm water that has come into contact with manure be maintained on the project site, or applied to other sites only upon written approval of the landowner. Chapter 18.64.050 J requires that off-site property owners accepting wastewater (liquid manure) complete written agreements to accept responsibility for proper land application. Chapter 18.64.050 G requires notification of Merced County Division of Environmental Health

[8] Since adoption of the ACO, the CVRWQCB has required the preparation of a NMP and WMP, which serve in place of the CNMP as allowed by Merced County Code Chapter 18.64.060 K.

(DEH) for any off-site discharge of wastewater. Chapter 18.64.050 BB requires application of manure at agronomic rates. For the permanent closure of an animal confinement facility, Chapter 18.64.050 R requires DEH to review and approve specific collection of soil samples from underneath existing ponds to be abandoned after liquid and solids have been removed. Portions of the ACO that specifically apply to protection of water quality include: Chapters 18.64.050 D, E, F, G, H, J, K, M, N, O, P, Q, R, T, V, Z, AA, BB, CC, DD, EE, II, JJ, KK, LL, MM, NN, QQ; 18.64.060 A, B, C, D, E, F, H, K; and 18.64.070 A, D, E, G, H, I, K, L, M, P, Q, S, and T (see Appendix A, bound separately, for the full text of the ACO).

Merced County Well Ordinance

The Merced County Code Chapter 9.28, *Wells* contains Water Well Standards (Chapter 9.28.060) that would minimize the potential for contaminated water to enter the well and contaminate groundwater. The standards include well setback distances from potential sources of contamination and pollution, and standards for construction.

Merced County Groundwater Ordinance

With the adoption of the Sustainable Groundwater Management Act of 2014 (SGMA), Merced County has adopted a groundwater ordinance No. 1930, which prohibits the unsustainable extraction of groundwater or conveyance of groundwater outside of a subbasin. This ordinance is a transition document until documents required by the SGMA are published and implemented. Two prohibitions were set in place as part of the ordinance. The first prohibits the construction of new wells within unincorporated areas of the county showing excess extraction patterns from 1995 through 2013. The second prohibits the export of groundwater from Merced County to areas outside of the groundwater basin where it originated. Multiple exemptions are in place to allow water districts and water agencies to continue to operate.

Regulatory Compliance Audit

The Merced County Community and Economic Development Department requests regulatory compliance audits of expanding animal confinement facilities from the Division of Environmental Health as part of the CUP evaluation process prior to project approval. The DEH staff evaluated the facility for compliance with the Merced County ACO (Merced County Code Chapter 18.64). The DEH concluded that the dairy facility was in substantial compliance with the requirements of the ACO (letter dated November 25, 2019).

ENVIRONMENTAL EVALUATION

Proposed Project Operations and NMP and WMP Summary

The project applicant has prepared a proposed NMP and WMP, dated October 2017 and November 2019, as required by the CVRWQCB General Order. A professional engineer registered in the State of California and a Certified Crop Advisor completed the required elements of the NMP and WMP. In summary, the proposed NMP and WMP establish the following required facility improvements for the herd and potential areas of sensitivity under the proposed expansion[9]:

[9] These standards and improvements do not address potential environmental effects from the proposed expansion. For an evaluation of these effects and required additional mitigation, see analysis below.

- Proposed nutrient application rates would meet required agronomic rates of 1.4 or less for best management farming practice mandated by the CVRWQCB. The applied to removal nitrogen ratio would be 1.30. With exported liquid and solid manure and evaporative losses, the nitrogen whole farm balance ratio would be 1.35.
- The recommended amount of salt applied to cropland will be provided in the future versions of the approved NMP for the dairy.
- The 11,66,940 gallons of storage capacity for the existing treatment and wastewater ponds would be sufficient to permit storage of wastewater generated by the facility for a 120-day cycle during normal precipitation periods and 1.5 times the normal precipitation periods. As the existing WMP report indicates, the facility currently has an excess wastewater storage capacity of 542,141 gallons. Pond freeboard of 2 feet would be able to contain 100-year storm events. All ponds are of earthen construction. There would be no changes to the existing wastewater ponds with the proposed dairy expansion.
- A tailwater return system, composed of berms, piping, sumps, and pumps, would continue to be used to prevent the movement of water off site and allow the recycling of applied wastewater.
- Stormwater runoff from impervious surfaces and roofed areas would continue to be routed to the wastewater pond, except for rainwater from a barn roof, which would continue to be routed to a nearby yard.
- The project site is located within Flood Zone AO, an area subject to inundation by 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet. For the site, the designated inundation depth is one foot, and the depth is determined from "existing natural grade" (Sousa Engineering, 2019). In general, the elevations of the area of the dairy production area are between 177 feet to 182 feet, or 2 to 7 feet above the elevations of the surrounding area.
- Construction of the proposed facilities would occur within the existing dairy footprint. There would continue to be approximately 185 acres of cropland available for disposal of dairy wastewater and/or solid manure. Future crops could vary from those set forth in the NMP as long as nitrogen balance requirements are met. Additional off-site fields not owned by the dairy operator would receive solid manure for use as a soil amendment or fertilizer.

Question (a) Violation of Water Quality Standards: Less-than-significant Impact with Mitigation.

Surface and groundwater quality could be adversely affected from operation of the Nunes Dairy project. With implementation of the mitigation measures identified below, the proposed project would not be expected to violate any water quality standards or waste discharge requirements, or substantially degrade water quality during construction or operation.

Degradation of surface water quality due to storm water runoff during project construction. The proposed new 85,800 square foot freestall barn would be constructed within the existing dairy facility footprint. Storm water runoff during the construction period could result in the siltation and sedimentation of waterways draining the site, or in the transport of pollutants used during construction. Because the proposed project would disturb more than one acre, the applicant would be required to obtain a General Construction Activity Storm Water Permit from the State Water Resources Control Board (SWRCB) for stormwater discharges associated with construction activities, which would require the implementation of a Stormwater Pollution and Prevention Plan (SWPPP). The SWPPP must

contain BMPs to reduce soil erosion and protect stormwater runoff. To ensure implementation of stormwater requirements and to avoid siltation effects, the following mitigation measure would be required.

Mitigation Measure HYD-1:

> The project applicant shall submit Permit Registration Documents (PRD) for the Construction General Permit Order 2009-0009-DWQ to the State Water Resources Control Board, and comply with, and implement, all requirements of the permit. A Legally Responsible Person (LRP) shall electronically submit PRDs prior to commencement of construction activities in the Storm Water Multi-Application Report Tracking System. PRDs consist of the Notice of Intent, Risk Assessment, Post-Construction Calculations, a Site Map, the Storm Water Pollution Prevention Plan (SWPPP), a signed certification statement by the LRP, and the first annual fee. Following submittal of a Notice of Intent package and development of a SWPPP in accordance with the Construction General Permit, the applicant will receive a Waste Discharge Identification Number from the SWRCB. All requirements of the site-specific SWPPP, including any revisions, shall be included in construction documents and must be available on site for the duration of the project.

With implementation of Mitigation Measure HYD-1, the proposed project would not be expected to violate any water quality standards or waste discharge requirements during construction. Compliance with applicable requirements would minimize project impacts to water quality. A less-than-significant impact would result, and no additional mitigation would be required.

Degradation of surface water quality from operations. As noted on USGS topographic maps, there are several water canals, laterals, and creeks in the project vicinity, including MID surface water canals, the Koff Lateral located north of the project site, and Owens Creek and Miles Creek, also located north of the project site.

There is an existing irrigation system in which receiving fields are graded to guide excess applied wastewater to an existing tailwater return system or maintained on the project area with berms. The tailwater return system, composed of berms, piping, sumps and a pump system to return excess irrigation water to the top of the field for reapplication, is used to prevent the movement of water off site, and to allow the recycling of applied wastewater. The existing field ditch and berm system (with tailwater return on Field 1) has been used to minimize the potential for runoff and also minimize irrigation water use.

As required by the General Order WDRs, the facility operator must document compliance with provisions to prevent backflow or direct discharge of wastewater away from surface water resources. Locations of cross-connections with wastewater and surface water must be identified, along with how backflow can or does occur at each location and any current backflow preventive measures. The WMP includes documentation signed by a professional certified by the State of California in compliance with General Order requirements that there are no cross-connections on the site that would allow for direct discharge to surface or groundwater.

With regular inspection and water testing requirements, ongoing maintenance would occur for the wastewater application system and tailwater return system to ensure the systems are working properly. The continued use of good farming practices and application of wastewater at agronomic rates detailed in the NMP and as required by the ACO and the individual WDRs would minimize

potential impacts to surface water. Due to the irrigation water retention system, the BMPs for liquid and solid manure application, and backflow prevention compliant with General Order requirements, no surface water discharge from these manured areas is anticipated, and no adverse impacts to surface water would occur as a result of the proposed dairy expansion. This would be a less-than-significant impact.

Groundwater contamination from operations. Water quality data from a Nunes Dairy facility domestic well shows elevated levels of EC and elevated levels of dissolved salts and other particles (see Table 11, above). The Central Valley Dairy Representative Monitoring Program (CVDRMP), developed in accordance with Dairy General Order requirements and with review by the CVRWQCB, has found that shallow groundwater has been affected across the Central Valley due to historic or current animal confinement operations, especially underlying cropland.

The Nunes Dairy project would concentrate animals and their wastes within the feeding areas, and to a lesser degree, within open corrals. A sump and pump would be installed in the corral low point to collect wastewater and convey it to existing wastewater storage ponds. Concrete lined feed lanes would flush wastes to the on-site wastewater management system for treatment and storage in ponds. As required by the General Order, the production areas are required to be managed to limit the extent to which wastewater can infiltrate into the underlying materials.

Following solids removal and additional settling in the solids settling basins, the wastewater with dissolved constituents would be stored in the wastewater pond for later application in irrigation water to crops. All wastewater storage structures are of earthen construction and would continue to be subject to regular maintenance[10]. The existing wastewater ponds have the potential to impact groundwater because they contain elevated concentrations of inorganic and organic constituents, and because hydraulic pressure and gravity force liquids downward through soils to groundwater. However, since no changes to the pond construction or operation are proposed with the dairy modification, the hydraulic pressure within the ponds and pond leakage would stay the same. Therefore, there would be no anticipated increase to groundwater quality impacts from the ponds with implementation of the proposed project.

There would be no change in the cropland acreage with the proposed dairy modification. While there would be an increase in manure generated by the modified herd, there would be an increase in solid manure exported to off-site fields. There would be a similar amount of nutrients would be applied to crops (1.15/1.30 (existing/proposed) nutrient applied to removal ratio). With the increased export of nutrients, the whole farm nutrient balance ratio would increase from 1.22 to 1.35. However, despite attempts to apply pond wastewater at agronomic rates, groundwater quality beneath crop fields may be impacted. The NMP allows application of nitrogen at greater rates than the plant crops actually need, with a maximum of 1.4 times crop uptake. Additionally, imprecision

[10] As specified in the General Order, the existing wastewater retention ponds must be in compliance with Title 27 design standards. However, these design standards have not been found to be protective of groundwater under all conditions, and the immediate replacement of these wastewater retention ponds is not a practicable option for many dairies. Therefore, the CVRWQCB considers the best practical treatment for existing ponds to be an iterative process whereby the ponds are evaluated (either under an individual monitoring program or under the RMP) to determine whether or not they are protective of the underlying groundwater, and upgraded or replaced on a time schedule that is as short as practicable if they are found not to be protective. The General Order contains a time schedule to bring any deficient management practices (including wastewater retention ponds) into compliance.

and inefficiencies in wastewater application and variations in weather both can influence plant growth, and, thus, the uptake of nitrogen. For these reasons, over-application of nitrogen and other nutrients could occur, though there would be no increase from existing conditions with the proposed project.

Field application of phosphorus, potassium, and salts are calculated and managed under the General Order. Salt tolerance of crops and yield reductions can vary depending on various factors, such as irrigation management, the crop being grown, and the site conditions. While the General Order does not regulate a nutrient balance ratio for phosphorus, potassium, and salts, it does require that if monitoring indicates levels of these elements are causing adverse impacts, then application rates must be adjusted downward to prevent or correct the problem. The intent of regulatory requirements is to implement operational improvements and monitor groundwater quality to assess impacts. Long-term groundwater and soil monitoring would continue to be used to determine the success of the program on a regular basis and determine the need for additional action.

Chapters 18.64.050 D, E, F, G, H, J, K, M, N, O, P, Q, R, T, V, Z, AA, BB, CC, DD, EE, JJ, KK, LL, MM, NN, QQ; 18.64.060 A, B, C.8.d, D, E, F; and 18.64.070 A, D, E, G, H, I, K, L, M, P, Q, S, and T of the ACO apply to this potential effect.

The proposed project as planned would be required to use BMPs, engineering, and design consistent with local and state regulations. While the proposed dairy expansion is not anticipated to increase the potential for impacts to groundwater quality, because elevated nitrate levels have been observed from agricultural operations in general in the Central Valley, the following mitigation measures would be required to ensure implementation of regulatory measures. The CVRWQCB shall incorporate the following mitigation measures into the individual WDR permit requirements for the Nunes Dairy Expansion project.

Mitigation Measure HYD-2a:

The following Best Management Practices shall be implemented as applicable:

1. Positive drainage shall be included in project design and construction to ensure that excessive ponding does not occur. The design shall comply with Title 3, Division 2, Chapter 1, Article 22, Section 646.1 of the Food and Agriculture Code for construction and maintenance of dairy or facility surroundings, corrals, and ramps, as described below.
2. Dirt or unpaved corrals, or unpaved lanes, shall not be located closer than 25 feet from the milking barn or closer than 50 feet from the milk house. Corral drainage must be provided.
3. A paved (concrete or equivalent) ramp or corral shall be provided to allow the animals to enter and leave the milking barn. This paved area shall be curbed (minimum of 6 inches high and 6 inches wide) and sloped to a drain. Cow washing areas shall be paved (concrete or equivalent) and sloped to a drain. The perimeter of the area shall be constructed in a manner that will retain the wash water to a paved drained area. Paved access shall be provided to permanent feed racks, mangers, and water troughs. Water troughs shall be provided with: (1) a drain to carry the water from the corrals; and (2) pavement (concrete or equivalent) which is at least 10 feet wide at the drinking area.

4. The cow standing platform at permanent feed racks shall be paved with concrete or equivalent for at least 10 feet back of the stanchion line.
5. As unpaved areas are cleaned, depressions tend to form, allowing ponding and increased infiltration. Regular maintenance shall include filling of depressions. Personnel shall be taught the correct use of manure collection machines (wheel loaders or elevating scrapers).

Mitigation Measure HYD-2b:

The applicant shall comply with requirements of the NMP/WMP, implement CVRWQCB requirements included in the individual WDR for the proposed expansion, and with all Merced County ACO requirements not superseded by the conditions of the individual WDR.

Mitigation Measure HYD-2c:

As set forth in the NMP, proposed application rates of liquid and/or solid manure shall not exceed agronomic rates. Nutrient samples shall be collected prior to and during applications periods to confirm agronomic rates within all portions of cropped areas receiving manure, and to protect water supplies. Soil testing frequency for nitrogen, potassium, phosphorus, and salts are described in the NMP. Modifications to the NMP may be required as outlined in the individual WDR for the proposed expansion to be issued by the CVRWQCB.

Mitigation Measure HYD-2d:

The CVRWQCB may require an industry-wide or site-specific salinity report to be submitted to the CVRWQCB for review and approval prior to operation or final inspection. The salinity report shall identify sources of salt in waste generated at the dairy; evaluate measures that can be taken to minimize salt in the dairy waste; and include an affirmative commitment by the applicant to implement measures identified to minimize salt in the dairy waste to meet Basin Plan requirements. Any necessary measures shall be incorporated into the WDR issued for the facility or become a required deliverable of the WDR.

Mitigation Measure HYD-2e:

A site-specific shallow groundwater monitoring system has not been implemented for the Nunes Dairy. As a condition of the individual WDR issued for the facility, the CVRWQCB may require shallow groundwater monitoring wells to be installed and monitored or require the facility to contribute to a regional representative groundwater monitoring system to confirm water table gradients and water quality variations. Monitoring well requirements and a monitoring schedule shall be included in the WDR issued for the facility. The resulting groundwater monitoring objectives for either the regional program or individual site shall be used to assess and mitigate groundwater impacts.

Mitigation Measure HYD-2f:

Groundwater monitoring of the on-site domestic and irrigation wells as required under the General Order and individual WDR shall be completed by the dairy operator. Potential future groundwater monitoring wells may be sampled as required by the WDR, or depending on the success of the regional representative monitoring program. If appropriate, surrounding properties with domestic water supply wells within 500 feet of the land application property

could be considered for sampling for nitrate and E.C. at a minimum. A well monitoring schedule shall be incorporated into the WDR issued for the facility.

Mitigation Measure HYD-2g:

After project implementation and subsequent groundwater monitoring, if the dairy shows increased concentration in groundwater of constituents of concern, additional manure exportation, a reduction in herd size, or additional crop acres may be necessary to accommodate the proposed expansion. A new Report of Waste Discharge (ROWD) may be required by the CVRWQCB. The ROWD shall clearly demonstrate that the herd size will not constitute a threat to groundwater quality. If necessary, the CVRWQCB shall revise the WDR issued to the facility.

Mitigation Measure HYD-2h:

The Department of Community and Economic Development and the Division of Environmental Health shall make a final inspection of the facility prior to the commencement of expanded operations to confirm the dairy meets local and state requirements.

As stated above, the proposed dairy facility expansion would not increase the potential for impacts to groundwater quality. Mitigation Measures HYD-2a-h reinforce CVRWQCB requirements to quantify and evaluate water quality and determine necessary measures to remediate water quality conditions. It includes monitoring of the effectiveness of implemented measures, and modification or addition of measures if water quality problems persist. Compliance with applicable requirements would minimize project impacts to groundwater quality. A less-than-significant impact would result, and no additional mitigation would be necessary.

Impacts to water quality at off-site locations as a result of project operations. The proposed dairy facility expansion would increase the number of cows from 1,276 to 2,100. The herd expansion would result in an overall increase in manure and associated pathogens produced at the project site. The manure could also contain residual amounts of contaminants such as hormones, antibiotics, or pesticides. Therefore, manure process water applied to fields may contain these pathogens and contaminants.

While implementation of the ACO, the General Order, and the Merced County Well Ordinance would minimize potential impacts from pathogen contamination on site, the proposed dairy facility expansion includes the increased export of manure generated from the facility. As reported in the NMP, approximately 3,500 tons of solid manure is exported and applied to off-site agricultural operations, which would increase to 8,200 tons of solid manure from separated solids with the proposed dairy modification.

The Long-term Irrigated Lands Regulatory Program General Orders adopted by the RWQCB (see Regulatory Setting of this section) provide general WDRs to protect ground and/or surface waters for owners and operators of irrigated lands throughout the Central Valley who join an approved third-party group or coalition. The Individual Discharger General Order (Order R5-2013-0100) regulates waste discharges from irrigated lands for individuals that are not enrolled under WDRs administered by a third-party, or who are not covered by the Dairy General Order WDRs. All growers are required to submit farm information to either their coalition or the RWQCB. These include both a farm evaluation and a nitrogen management plan. The Farm Evaluation helps determine what farm practices are currently being implemented and whether any improvements can

be made to protect water quality. A significant amount of adsorption[11] of nutrients to soil particles and inactivation of pathogenic organisms would be expected to occur in the fields, and potential impacts to water quality at off-site fields receiving exported liquid and dry manure would be reduced. The growers are required to implement BMPs to protect surface water in areas where monitoring has identified problems.

As defined by the adopted Irrigated Lands Program General Orders and animal confinement facility WDRs, surface and groundwater water monitoring and corrective actions conducted by water quality coalitions and individuals would reduce this potential impact to water quality at off-site fields. To ensure compliance with regulatory requirements, the following measure would be required.

Mitigation Measure HYD-3:

Over the course of operations, the project sponsor shall obtain written agreement from the recipients of dry and liquid manure exported off site to require demonstrated compliance with the following:

- The recipient belongs to an approved third-party group or coalition compliant with the Long-term Irrigated Lands Regulatory Program General Orders adopted by the RWQCB, is covered by an Individual Discharger General Order, or is otherwise covered by Confined Animal Facility WDRs as adopted by the RWQCB.
- All manure shall be applied to cropland at rates and times that are reasonable for the crop, soil, climate, special local situations, and management system. Manure applications shall be timed and managed to minimize nitrogen movement below the root zone and to minimize percolation of waste constituents to groundwater.
- All stormwater that is or has been in contact with manure shall be maintained on site. No storm drainage that has been in contact with manure shall be allowed to flow or seep onto adjacent properties or public roads, or into any waterway.
- Where the commingling of water containing manure can take place with irrigation wells and irrigation and/or drainage district facilities, these facilities must be protected from pollution by a backflow device or method that is approved by the Division of Environmental Health and/or the appropriate irrigation/drainage district. It is the obligation of the property owner to install and maintain or cause to be installed and maintained the backflow device or method.
- Manure shall not be applied within 100 feet of any domestic well, irrigation well, or surface water body. Surface water bodies include creeks, streams, lakes and reservoirs, but do not include canals constructed above grade. Adequate protection of surface water bodies or irrigation wells shall prevent discharge or infiltration of manure constituents to the water body or well.

The project sponsor shall provide the most recent analysis of the liquid or dry manure, in writing, to the manure recipient. The signed agreement between the project sponsor and the recipient of manure exported off site shall be submitted to the Merced County Division of Environmental Health for review.

[11] Not to be confused with absorption, adsorption is the adhesion of atoms, ions, or molecules from a gas, liquid, or dissolved solid to a surface. Absorption is the process in which a fluid permeates or is dissolved by a liquid or solid.

Implementation of these measures would reduce the magnitude of this potential effect by requiring compliance with RWQCB requirements to minimize impacts to surface and ground water quality from manure applied to cropland off site. A less-than-significant impact would result, and no additional mitigation would be required.

*Water supply pathways for pollutant migration***.** Existing irrigation and water supply wells (either active or abandoned) in the site proximity that do not meet current well standards of construction may act as conduits for pollutant migration to the subsurface. If any of the wells were not constructed with effective sanitary seals upon construction, or have been damaged since installation, surface water may seep into the wells and the underlying aquifer, causing water quality degradation.

The Merced County ACO, together with the Merced County Well Ordinance, recognizes the importance of protecting water quality from the release of animal pathogens. Chapter 18.64.050 establishes a minimum setback of 100 feet between any manured areas and water wells. However, application of manure (liquid or dry) may be closer than 100 feet to a surface water body or irrigation well if adequate protection to the surface water body or well is provided. As noted in the DEH inspection, the Nunes Dairy is in substantial compliance with ACO requirements. The WMP includes documentation of backflow prevention as submitted by a Registered Civil Engineer and has adequate protection of groundwater.

Since the existing wells at the project site meet current Merced County standards for well protection as set forth above, and the Nunes Dairy would continue to be subject to ACO and Well Ordinance requirements, there would be no potential conduits for groundwater contamination. This would be a less-than-significant impact.

Question (b) Decrease groundwater supplies or interfere with recharge: Less-than-significant Impact.

Depletion of groundwater resources. The Nunes Dairy would continue to rely on MID surface water, groundwater, and wastewater recycling for Nunes Dairy irrigation. Domestic water supply would continue to be derived from groundwater. Currently, the daily water use from the milkhouse equipment and floor wash is approximately 6.0 million gallons annually. With the proposed expansion, water use in the milkhouse equipment and floor wash would increase to 10.8 million gallons annually.

The Nunes Dairy Expansion would continue to rely on surface water, groundwater, and wastewater recycling for irrigation. No new irrigation wells are proposed as part of the dairy expansion project. Overall acreage would remain the same for the land application area, and water application to the land application area would remain the same under proposed conditions.

The Merced Groundwater Subbasin is identified by the California Department of Water Resources as critically overdrafted, and is considered a high priority groundwater basin (DWR 2020b). The Sustainable Groundwater Management Act (SGMA) of 2014 (as amended) allows customized groundwater sustainability plans (GSP) to be designed by groundwater sustainability agencies (GSA) to manage groundwater resources while being sensitive to local economic and environmental needs. The goal of SGMA is to have sustainably managed groundwater within 20 years of the initial GSP submittal and maintain sustainability for a 50-year planning and implementation horizon.

As of June 2017, three GSAs have formed in the Merced Subbasin: the Merced Irrigation-Urban Groundwater Sustainability Agency, the Merced Subbasin Groundwater Sustainability Agency, and the Turner Island Water District Groundwater Sustainability Agency. The project site is located in the Merced Irrigation-Urban GSA. The three GSAs have collaborated on developing one Groundwater Sustainability Plan for the entire Merced Groundwater Subbasin. The Merced Subbasin GSA adopted the *Merced Groundwater Sustainability Plan* on December 9, 2019. Following adoption by all three GSA's in the Merced Subbasin, the GSP was submitted to the California Department of Water Resources by the January 31, 2020 deadline. The GSPs for critically overdrafted basins are open for public comment through May 15, 2020, and June 3, 2020. An annual report to DWR is required by April 1 to provide information on groundwater conditions and an update on implementation efforts for the prior year. Until the GSP is approved and implemented, the Merced County Groundwater Ordinance regulates water management in the county.

While the proposed dairy expansion would result in an increase in overall water use, the majority of the water use on the dairy would continue to be used for irrigation and not consumptive uses, which could result in continued groundwater recharge via irrigation percolation. Further, the proposed dairy expansion would be subject to the requirements of the GSP for the region, if and when adopted, which would further minimize impacts to groundwater supplies. Therefore, impacts from a decrease in groundwater supplies from this operation would be considered less than significant.

Question (c) Substantially alter drainage patterns: Less-than-significant Impact.

Questions (c)(i) and (c)(ii) Modification of surface water drainage patterns and an increase in runoff. Implementation of the proposed dairy facility expansion project would not modify surface water drainage patterns, and would not cause localized off-site migration of runoff, erosion, and/or flooding since the expansion could require minimal grading efforts over a previously disturbed area. A less-than-significant impact would result, and no mitigation would be required.

Questions (c)(iii) Exceed stormwater drainage capacity. Stormwater generated at the project site would continue to be routed to the wastewater pond or adjacent yard. Because stormwater generated by the project would be collected and maintained within the project proponent's larger property, no additional drainage would reach regional waterways as a result of the project. Run-on and runoff water would be prevented from entering or leaving the facility.

Chapters 18.64.050 E and I of the ACO require that all wastewater or stormwater that has come into contact with manure be maintained on the project site, or applied to other sites only upon written approval of the landowner. Chapter 18.64.050 G requires notification of Merced County Division of Environmental Health for any off-site discharge of wastewater. Chapter 18.64.050 BB requires application of manure at agronomic rates. Additionally, Chapter 18.64.050 O requires a separation of at least 100 feet between waste application areas and any surface water feature. However, application of manure (liquid or dry) may be closer than 100 feet to a surface water body or irrigation well if adequate protection to the surface water body or irrigation well is provided. While there is a domestic well at the milk parlor that is within 100 feet of active animal confinement facilities, the WMP contains documentation of adequate protection. Chapter 18.64.070 M requires a separation of at least 50 feet between waste management ponds and settling basins and any public irrigation facilities, with a maintained drainage area between the two facilities. As noted in the DEH inspection, the Nunes Dairy is in substantial compliance with ACO requirements.

Under State regulations and according to the WMP, the Nunes Dairy has been designed to retain all facility wastewater generated, together with all precipitation on, and drainage through, manured areas during a 100-year, 24-hour storm event, including 120-day storage period. All precipitation and surface drainage outside of manured areas would be diverted away from manured areas unless it would be fully retained (CCR Title 27, Division 2, Subdivision 1 22562(a)). On-going maintenance inspections of the storage ponds as outlined in the WMP Operation and Maintenance Plan would ensure compliance with stormwater retention requirements.

The runoff from increased impervious surfaces outside of manured areas may be substantial during intense storm events. However, the annual rainfall for the project area is relatively low, and under normal circumstances, little runoff would be expected. Conformance with the County ACO requirements and individual WDR process would reduce surface drainage impacts associated with runoff from animal confinement facilities to a less-than-significant level. Additional regulatory requirements for the proposed dairy modification may be included in the individual WDR issued by the CVRWQCB for the facility. Because all stormwater generated by the project would be collected and maintained within the project proponent's larger property, no adverse effects due to runoff would occur, and no mitigation would be necessary.

Question (c)(iv) Impede or redirect flood flows. A portion of the project site is located in a potential 100-year flood hazard zone identified by FEMA as Zone AO. For the project site, the designated inundation depth is one foot from existing natural grade. The dairy production area is generally two to seven feet above the elevations of the surrounding area, and the dairy facility is not a high-density land use that would impede or redirect flood flows. Therefore, implementation of the proposed dairy expansion project would not impede or redirect flood flows, and a less-than-significant impact would result. No mitigation would be required.

Question (d) Flood hazard, tsunami, or seiche zones: Less-than-significant Impact with Mitigation. Dairies located within flood hazard zones could be damaged by floodwaters, or could be required to shut down for extended periods. Flood waters could mingle with wet or dry manure storage areas at the facilities, cause releases of process water from ponds, and/or come into contact with freshly applied manure on fields, impacting surface water quality.

The Merced County floodplain management ordinance (Zoning Code Section 18.26 meets the minimum federal standard for participation in the National Flood Insurance Program. This ordinance requires that the base flood elevation on a project site be established, that structures be flood proofed, and that a development permit demonstrating compliance with the provisions of the floodplain management ordinance be obtained prior to the initiation of construction. In addition, Section 7.13.050 Q of the Animal Confinement Ordinance requires that wastewater retention ponds/settling basins be protected against the 100-year flood hazards. The General Order also requires in the WMP an evaluation of the dairy's design, construction, operation, and maintenance for flood protection. Compliance with Merced County and General Order regulations regarding floodplain management would provide protection of active dairy facilities from flood inundation.

For non-residential structures, an elevation certificate or a flood proofing certificate is required in accordance with Section 18.26.040 (C)(4) of the Merced County Code. A Flood Protection Report was completed for the Nunes Dairy (Sousa Engineering 2019). The Flood Protection Analysis shows that the project site is located in a potential 100-year flood hazard zone identified by FEMA as Zone AO, an area subject to inundation by 1-percent-annual-chance shallow flooding (usually

sheet flow on sloping terrain) where average depths are between one and three feet. For the site, the designated inundation depth is one foot, and the depth is determined from "existing natural grade" (Sousa Engineering, 2019). The dairy site has been constructed significantly above grade, or two to seven feet above the elevations of the surrounding area. Therefore, it appears the dairy facility, and location of the proposed improvements, has adequate flood protection in accordance with the General Order. Additional assessment and certification of the flood protection plan may be required in accordance with Merced County Code Section 18.26.050.

Manure and process water applied to fields may contain substantial quantities of nutrients (e.g., nitrogen and phosphorus) and microorganisms, including pathogens (disease causing organisms). If these substances enter the surface or groundwater environments in sufficient concentrations, they could cause water quality degradation. Potential impacts to surface water quality associated with the flooding of manure-fertilized agricultural fields would be minimized by the measures identified below and existing conditions as follows:

- The ACO, individual WDRs, and NMP/WMP will require operational practices that will keep flood waters from coming into contact with recently applied manure or process water (Merced County Code 18.64.050 E, F, and G);
- Domestic wells are required to have sanitary seals to prevent surface water contamination into the well casing (Merced County Code Chapter 9.28.060 C(5) Water Well Standards);
- A significant amount of adsorption of nutrients to soil particles and inactivation of pathogenic organisms are expected to occur in the fields prior to contact with any flood waters;
- Neither the flood water nor the receiving waters will be used as a drinking water source without prior treatment, and therefore any pollutants contained in the flood water will not be expected to be ingested by the public;
- During widespread regional flooding, all surface waters are expected to be degraded; precautions are already in place to minimize the likelihood of inadvertent ingestion of pollutants by the public (i.e., public advisories to boil water before use, maintenance and disinfection of wells after flood waters recede).

As discussed above, the dairy facilities currently meet the requirements of the General Order and Merced County regulations for flood protection. Following construction of the proposed facilities and prior to commencement of dairy expansion operations, the project applicant would be required to obtain a flood proofing certificate in accordance with Section 18.26.050 of the Merced County Code from the Merced County Public Works Building Department. If any portion of the dairy facility is found not to comply with flood proofing requirements, the project applicant would be required to complete flood proofing as necessary to obtain the flood-proofing certificate from the County. Compliance with General Order and Merced County regulations regarding floodplain management would ensure protection of the proposed dairy expansion from flood inundation.

The proposed project area is located over 80 miles from the Pacific Ocean at elevation of approximately 180 to 185 feet MSL and distant from any lakes (Google Earth 2020). Therefore, the proposed project would not be exposed to inundation hazards related to a seiche or tsunami.

Because the active dairy facilities would be constructed above flood elevations, project design would minimize the risk of project inundation due to flooding. Therefore, the risk of release of pollutants during flooding would be less than significant, and no mitigation would be required.

Question (e) Conflict with water quality or sustainable groundwater management plans: Less-than-significant Impact. The project site is located within the Merced Groundwater Subbasin. The current Basin Plan for the Sacramento River and San Joaquin River Basins was issued in May 2018. As noted above under Question (a), the proposed project would be required to implement a SWPPP during construction, and proposed project operations would not result in hazardous wastewater discharges. Therefore, the proposed project would not include any waste discharges that could conflict with the Basin Plan. Further, agriculture and animal confinement facilities are designated as beneficial uses of water resources in the Basin Plan.

As described under Question (b), above, the three GSAs in the Merced Subbasin collaborated on developing one Groundwater Sustainability Plan for the entire Merced Groundwater Subbasin in order to implement the SGMA requirements and achieve the sustainability goals outlined in SGMA. While the Nunes Dairy Expansion would result in an increase in groundwater use, the Nunes Dairy would be expected to follow the guidelines within the GSP, as applicable, to manage groundwater depletion.

Therefore, the project would not conflict with or obstruct the water quality control plan or a sustainable groundwater management plan, and the potential impacts would be less than significant. No mitigation would be required.

XI. LAND USE AND PLANNING	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?				**X**
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?		**X**		

ENVIRONMENTAL SETTING

The land surrounding the project site and in the general vicinity is primarily developed for agricultural uses. Scattered rural residences are located in the general area of the project; most are associated with agricultural operations. Owens Creek and Miles Creek are located north of the project site. The project site is designated Agricultural by the 2030 Merced County General Plan, and zoned A-1 (General Agricultural) by the Merced County Zoning Code (Merced County GIS 2020).

ENVIRONMENTAL EVALUATION

Question (a) Physically divide established community: No Impact. Other than scattered rural residences, there is no established community in the area of the project site. The nearest established community within the project area is Merced, approximately 0.7 miles to the northwest of the project site. Because the project would not divide a community, no adverse effects would result, and no mitigation would be required.

Question (b) Conflict with land use plans or policies: Less-than-significant Impact with Mitigation. The project site and the area surrounding the site are designated Agricultural on the 2030 Merced County General Plan Land Use Diagram. As set forth in the 2030 Merced County General Plan, the Agricultural land use designation:

> … provides for cultivated agricultural practices which rely on good soil quality, adequate water availability, and minimal slopes. This is the largest County land use designation by area in the County and is typically applied to areas on the valley floor. (Merced County 2013)

The project site and the area surrounding the site in Merced County are located in the A-1 (General Agricultural) zoning district of Merced County. The purpose of the General Agriculture zone is to provide for areas of more intensive farming operations dependent on higher quality soils, water availability, and relatively flat topography; and to host agricultural and/or industrial uses dependent on proximity to urban areas or requiring a location in sparsely populated areas. Parcels smaller than 40 acres down to a minimum of 20 acres can be considered under the General Agriculture zone where agricultural productivity of the property will not be reduced.

Animal confinement facilities such as dairies may be permitted in all agricultural zones within Merced County subject to approval of an Administrative Permit or Conditional Use Permit as determined by the number of off-site dwellings within the windshed, and whether animal confinement facility criteria are met. Animal confinement facilities face greater regulatory scrutiny if greater than five off-site residential dwellings are located within the windshed, defined as an area of 1,320 feet upwind to 2,640 downwind of the periphery of the animal facility, or if the animal confinement facility does not meet other locational criteria as defined by County Code Section 18.64.040 (B). For the Nunes Dairy Expansion project, there are several off-site residences located within the windshed of the dairy (see Figure 5), and there are six off-site residences located within 1,000 feet of the existing facility (see Figure 6). Because there are off-site residences that are situated at a distance that is less than the setback distances established in the Merced County Code locational criteria, Merced County is considering the dairy project under its Conditional Use Permit process.

Within Merced County, Conditional Use Permits are discretionary permits that require special review and control to ensure that a use of land is compatible with the neighborhood and surrounding residences. Land uses subject to a CUP are considered more likely to have greater impacts than uses permitted by right, or uses permitted under Administrative Permits (Merced County Code Section 18.116.010 (B). The proponents of the proposed Nunes Dairy Expansion project have made application to the County of Merced for a Conditional Use Permit (CUP16-001) to construct and operate the proposed dairy modification.

No fly or odor complaints have been reported regarding the Nunes Dairy and submitted to DEH (Canal, E., *pers. comm.* April 2020). While the existing agricultural character of the vicinity would tend to minimize incompatibility to existing uses in the project vicinity, implementation of the dairy modification project could introduce an additional source of odors, flies, and other insects in the area of these residences. (These potential adverse odor and nuisance insect effects are evaluated in Section III, *Air Quality and Odors* and Section IX, *Hazards and Hazardous Materials* of this IS.) The combination of these nuisance effects contributes on a cumulative level to determine land use compatibility with existing residents in the area.

Merced County regulates land use through the 2030 General Plan and Zoning Code. The EIR prepared for the Merced County ACO assessed potential land use conflicts with rural residences for new and expanding animal confinement facilities in Merced County. In efforts to minimize these conflicts and protect agricultural uses, the ACO requires a minimum setback between new or expanded animal confinement facilities and individual off-site rural residents to 1,000 feet, and generally prohibits the construction of new off-site dwellings within 1,000 feet of an existing animal confinement facility, with some exceptions. According to Merced County Code Chapter 18.64.040 (B)(2), the modification or expansion of an existing facility must not decrease the existing separation distance from residentially zoned property, concentrations of five or more off-site residences, or off-site residences to less than 1,000 feet unless the off-site property owner provides written permission. Construction of the proposed freestall barn would occur within the existing footprint of active dairy operations. While there are off-site residences within 1,000 feet, the dairy modification would not reduce the existing distance to these residences. The proposed modification would not reduce the distance to less than 1,000 feet for any off-site residence currently greater than 1,000 feet from existing active dairy facilities.

The ACO also prohibits new dairies within one-half mile of urban areas, areas zoned for residential uses, concentrations of rural residences, sensitive uses such as schools, hospitals, jails, public or

private recreational areas, parks, and wildlife refuges (Merced County Code Chapter 18.64.040 (B)(1)(a)). According to Merced County Code Chapter 18.64.040 (B)(2), if the dairy facility is located within the minimum setback distance, the modification or expansion of an existing facility must not decrease the existing separation distance from these areas. There are no residentially zoned areas or concentrations of rural residences within the 0.5-mile setback distance (Merced County GIS 2020). The City of Merced is located approximately 0.7 miles from the active dairy facilities. The boundary of the Grasslands Focus Area is located directly south and west of the project area, and the Grasslands Ecological Area boundary is located approximately 0.6 miles south of active dairy facilities. Since proposed construction would occur within the existing footprint of active dairy facility, the proposed expansion would not decrease the setback distances to these uses.

While no official nuisance complaints have been reported regarding the Nunes Dairy, because the active dairy facilities are located less than 1,000 feet from several off-site residences, there would be an increased potential for nuisance conditions at these residences with implementation of the proposed dairy modification, and the following mitigation would be required.

Mitigation Measure LU-1a:

Implement the odor control measures set forth in Mitigation Measure AQ-3a.

Mitigation Measure LU-1b:

Implement the nuisance control measures set forth in Mitigation Measure HAZ-1.

Implementation of the foregoing mitigation measures and measures included in the Nunes Dairy Vector Control Plan would reduce the magnitude of this potential effect by requiring housekeeping and management measures. Because the setback distance to the nearby off-site residences and other sensitive uses would not be reduced with the proposed dairy modification, with implementation of the above mitigation measures, the potential impact from nuisance conditions would be reduced to less than significant.

XII. MINERAL RESOURCES				
	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				**X**
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				**X**

ENVIRONMENTAL SETTING

The majority of the land area of Merced county lies within the Central Valley physiographic province, which is dominated by significant amounts of overburden soils that are alluvial in nature. Less than 30 percent of Merced county lies in higher topographic areas, away from the alluvium and closer to bedrock conditions. Very few traditional hard rock mines exist in the county. The county's mineral resources in the project vicinity are primarily sand and gravel mining operations. (Merced County 2013i)

No Mineral Resource Zones or mineral resource production areas are located in or adjacent to the project area. The eastern portion of Merced County includes the following aggregate resource areas: Merced River, Bear Creek, and Mariposa Creek According to the 2030 Merced County General Plan Background Report (Figure 8-10), the project site is not located in an area of sand and gravel resources (Merced County 2013j). The California Geological Survey indicates that the proposed project is not within an Aggregate Production Area (CGS 2019).

ENVIRONMENTAL EVALUATION

Questions (a) and (b) Loss of mineral resources of value and/or delineated on land use plans: No Impact. No important mineral deposits, Mineral Resource Zones, or existing or previous mines are located on the project site or in the surrounding area. Because there are no mineral resources or resource protection zones in the vicinity of the project site, there would be no loss of availability of known mineral resources. No adverse effect would result, and no mitigation would be required.

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

ENVIRONMENTAL SETTING

Some land uses are considered more sensitive to noise levels than other uses. Sensitive land uses can include residences, schools, nursing homes, hospitals, and some public facilities, such as libraries. Sensitive land uses also may include areas that contain threatened or endangered biological species that are known to be sensitive to noise. Sensitive receptors in the project vicinity include several off-site rural residences that surround the area of active dairy facilities.

The noise level experienced at a sensitive receptor depends on the distance between the source and the receptor, the presence or absence of noise barriers and other shielding devices, and the amount of noise attenuation (lessening) provided by the intervening terrain. For line sources, such as vehicular traffic, noise decreases by about 3.0 to 4.5 A-weighted decibels (dBA)[12] for every doubling of the distance from the roadway.

REGULATORY SETTING

The 2030 Merced County General Plan Noise Element provides a basis for local policies to control and abate environmental noise, and to protect the citizens of Merced County from excessive noise exposure (Merced County 2013). The County also enforces its Noise Ordinance (Chapter 10.60, *Noise Control*) in the County Code. This ordinance contains noise level standards for residential and non-residential land uses. Specifically, the County Code sets 65 dBA Ldn[13] and 75 dB Lmax[14] standards for residential property, with standards applicable to nonresidential properties 5 dB higher (Chapter 10.60.030 (A)). The County Code (Chapter 10.60.050(B)(3)) further exempts noise sources associated with agricultural activities or agricultural operations on agricultural property from sound level limitations.

[12] Decibel or dB: Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell. A-Weighting: A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.

[13] Ldn = Day/night average sound level during 24-hour day weighted by a factor of three.

[14] Lmax: The highest root-mean-square (RMS) sound level measured over a given period of time.

According to County Code (Chapter 10.60.040), construction activities that include the operation of any tools or equipment used during construction, drilling, earth moving activities, excavating, or demolition are prohibited from 6:00 p.m. to 7:00 a.m. the following day on weekdays. They are also prohibited at any hour during weekend days or legal holidays, except for emergency work.

ENVIRONMENTAL EVALUATION

Potential noise impacts can be categorized as those resulting from construction and those from operational activities. Construction noise would have a short-term effect; operational noise would continue throughout the lifetime of the project. Construction associated with the development of the project would increase noise levels temporarily during the construction of the proposed freestall barn. Operational noise associated with the modification of the dairy facility would occur 24 hours per day, 365 days per year, with most operations concentrated during daylight hours.

Question (a) Generate a noise increase in excess of local plan standards: Less-than-significant Impact.

Construction Noise

Construction of the Nunes Dairy project may result in a temporary increase in ambient noise levels. The project would be constructed in a single phase. Construction of the new freestall barn and subsequent herd expansion would occur approximately three to five years after project approval, depending upon market conditions. Construction activities would be considered an intermittent noise impact throughout the construction period of the project. These activities could result in various effects on sensitive receptors, depending on the presence of intervening barriers or other insulating materials. The area designated for the freestall barn is located roughly in the center of the active dairy facilities, perpendicular to South Healy Road (see Figure 7).

Based on typical construction equipment noise emission levels (FHWA 2017), noise levels produced during construction could potentially exceed those determined to be acceptable for parcels not zoned for residential land use by the 2030 General Plan (80 dBA Lmax at the property line) (Merced County Code Section 18.40.050 (C)(3). However, Merced County Code Section 18.40.050 (E) acknowledges there may be temporary, elevated noise levels during construction. No feature of the project would cause noticeable levels of ground borne vibration or noise. Because construction activities would be temporary and would not likely result in noise levels that exceed General Plan standards for agricultural areas, construction noise would be considered to be a less-than-significant impact, and no mitigation would be required.

Operational Noise

Situated in a rural area removed from significant noise sources, the noise environment within the project site is dominated by traffic noise from SR 99, trucks and vehicles on adjacent and private roadways, and operational noise from agricultural uses on the site and on adjacent farms. Existing operational noise is associated with on-site dairy operations, crop cultivation, and associated agricultural operations. Most noise events are associated with tractor and equipment operation. With project implementation, there would be little increase in existing ambient noise levels. No increases in noise from new large machinery or other noise-producing activities would occur, and no activities different from those currently occurring are proposed. However, some permanent increases associated with noise generated by additional vehicle and truck trips would occur. Generally, a doubling of traffic is necessary to result in a perceptible change in noise levels. Daily trips associated

with the proposed project are estimated to increase from 21.2 ADT to approximately 30.9 ADT. This small increase in traffic would not lead to a perceptible change in noise levels. Traffic noise would not exceed noise levels determined to be acceptable for agriculture by the Merced County General Plan, even with the addition of new dairy traffic. Also, noise levels in the vicinity of the project site would comply with the Merced County Code noise standard of 70 dB Ldn for agricultural uses (Merced County Code Section 18.40.050 (C)(3). This would be a less-than-significant impact, and no mitigation would be required.

Question (b) Ground-borne vibration or noise: Less-than-significant Impact. Construction activities associated with implementation of the proposed Nunes Dairy Expansion project are not expected to result in excessive groundborne vibration or groundborne noise levels. Additionally, any increases in groundborne vibration during construction activity would be temporary and would cease after project construction is completed. No permanent noise sources that would generate excessive groundborne vibration or groundborne noise levels would be located or operated within the project area. Therefore, impacts would be less than significant, and no mitigation would be required.

Question (c) Excessive noise levels near airports: No Impact. The Merced Regional Airport is located approximately 4.5 miles northwest of the project site. There are no private airports or airstrips within two miles of the project area. Since the project site is not located in an area for which an Airport Land Use Plan has been prepared (ALUC 2012), and no public or private airfields are within two miles of the project area, the existing and future employees of the Nunes Dairy project or people residing in the area of the project would not be exposed to excessive noise levels. There would be no impact, and no mitigation would be required.

XIV. POPULATION AND HOUSING	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			**X**	
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				**X**

ENVIRONMENTAL EVALUATION

Question (a) Induce unplanned population growth: Less-than-significant Impact. The Nunes Dairy Expansion project site is located in an agricultural region developed with other animal confinement operations, including other dairies. It would not result in a new or different type of use for the area, nor does the project create or improve any infrastructure serving the site or region. The proposed project is consistent with Merced County land use plans, and no modification of land use and development policies would be necessary to accommodate the proposed dairy modification project.

The dairy currently employs a staff of seven workers. With implementation of the proposed project, the number of employees would increase to approximately nine workers. In March 2020, the labor force in Merced County totaled 117,600 persons, with an official unemployment rate of 12.9 percent (EDD 2020). The increased labor needs of the project can be accommodated by this existing workforce within Merced County, and would not require the importation of workers. Similarly, any additional housing demands caused by project employees could be accommodated by existing and planned housing resources within Merced County.

The additional employees resulting from the proposed project would not result in a meaningful increase in the County's population; implementation of the project would not result in the exceedance of population projections or result in any significant growth inducing effects. The proposed dairy expansion project would not be expected to result in substantial new growth in the project vicinity. Therefore, the proposed project would not result in substantial direct or indirect growth inducement, and no adverse impacts would occur.

Question (b) Displace substantial numbers of people or housing: No Impact. There are five on-site employee residences located at the dairy facility. There are additional residences located on APN 066-271-001 owned by the project applicant. The proposed project would not impact the existing residences, and no new housing is proposed. There would be no impact to available housing units in Merced County. In 2018, the last year for which data is available, there were 85,756 housing units available (US Census Bureau 2020). Implementation of the project would not displace substantial numbers of people or existing housing units. There would be no impact, and no mitigation would be required.

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

ENVIRONMENTAL SETTING

Public services provided in the project area include fire, police, hospital, school, library, and park services. There are no public facilities located within the closer project vicinity. The Merced County Fire Departments serves the unincorporated areas of Merced County. Its nearest Fire Station (Fire Station 81) is located at 735 Martin Luther King Jr. Way in Merced, approximately 3.5 miles to the northwest of the proposed project site. The Merced County Sheriff's Department provides police protection in the unincorporated areas of Merced County; the nearest office is located at 700 W. 22nd St. in Merced, approximately 4.5 miles to the northwest of the project site. There are numerous schools in the City of Merced; the center of the city is approximately four miles to the northwest. Three hospitals provide medical services to county residents; Mercy Medical Center Merced in the City of Merced is nearest to the project site. Merced County Library services are available at the downtown Merced branch located at 2100 O Street. There are numerous parks in the City of Merced; park services are discussed in more detail in Section XVI, *Recreation.* Utility services are discussed in more detail in Section XIX, *Utilities and Service Systems.*

ENVIRONMENTAL EVALUATION

Questions (a) through (e) New or physically altered governmental public service facilities: Less-than-significant Impact. Operation of the Nunes Dairy project would include modification of a developed use in an area with rural levels/standards of fire protection. In response to this common condition in agricultural areas of the county, the Merced County Fire Department generally imposes requirements for on-site water storage for fire protection, and reflective building identification. Compliance with measures as set forth by the Fire Department would be required as conditions of approval, and would reduce fire risk and hazard to levels found acceptable by the Merced County Fire Department. Therefore, there would be no increase or change in the demand for fire service that would require the provision of new or physically altered fire facilities.

No feature of the project would result in the need for new or altered facilities for police protection, schools, health services, libraries, or parks. Because no new residences would be constructed, and needed employees would be drawn from the local labor pool, no substantial increase in population is expected to result from the proposed project. No feature of the proposed project would pose unusual police protection demands. Therefore, there would be no increase in the demand for public services such as police facilities, schools, parks, libraries, or health services that would require the construction of new facilities or physically altered facilities. This would be a less-than-significant impact.

XVI. RECREATION	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial deterioration of the facility would occur or be accelerated?				**X**
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				**X**

ENVIRONMENTAL SETTING

Merced County contains several federal, State, and county parks and recreation areas. Aside from parks in the county, there are many public open space areas as well.

- There are three National Wildlife Refuges located in Merced County: the Merced National Wildlife Refuge, the San Luis National Wildlife Refuge, and the San Joaquin River National Wildlife Refuge.
- The State of California Department of Parks and Recreation operates six parks in Merced County. The California Department of Fish and Wildlife operates seven wildlife areas.
- The Merced County Parks and Recreation Department maintains a variety of parklands throughout the county. County maintained parklands are divided into four basic classes: regional parks, community parks, dual-use parks, and neighborhood parks. There are a total of 21 parks owned and/or operated by Merced County. (Merced County 2020)

ENVIRONMENTAL EVALUATION

Questions (a) and (b) Increase park use, construct or expand recreational facilities: No Impact. No existing public recreational facilities are located on the project site or in the vicinity, and implementation of the project would not directly affect the provision or demand for any recreation. There would be no increase in the use of existing neighborhood or regional parks or other recreational facilities that would cause or accelerate the physical deterioration of such facilities. The proposed project does not include recreational facilities, nor does it require the construction or expansion of such facilities. Thus, no significant adverse impacts to recreation would occur with implementation of the proposed Nunes Dairy Expansion project, and no mitigation would be required.

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

ENVIRONMENTAL SETTING

Currently, heavy trucks (milk tankers, commodity deliveries) and other vehicles access the site. Existing trips by heavy vehicles are estimated at 3.9 average daily trips, consisting mainly of heavy truck trips from milk tankers and delivery trucks. Average daily trips for all classes of vehicles are estimated at 21.2 trips. Most trips currently access the site via Healy Road (see Table 4 on page 16 of this Initial Study). SR 99 provides regional access to the project site. Private internal roads would continue to be used for agricultural operations, movement of harvested crops from the fields to the dairy, and movement of dry manure to the fields. The BNSF railroad runs parallel to SR 99 to the east of the project site.

ENVIRONMENTAL EVALUATION

Question (a) Conflict with local circulation plans: Less-than-significant Impact. The proposed dairy modification would result in an increase from 21.2 to 30.9 average daily trips, including an additional 5.3 heavy truck trips per day (see Table 4 on page 16 of this Initial Study). Because of the existing low levels of local traffic in the vicinity, and because minimal new trips would be generated by the proposed project modification, congestion on nearby roadways would not increase. There would be no reduction of the existing Levels of Service on nearby roads, and the project would not conflict with any applicable congestion management plan.

Because there are no transit, bicycle, or pedestrian facilities in the vicinity of the proposed project, improvements would not result in the modification of any transit, bicycle, or pedestrian travel route. This would be a less-than-significant impact, and no mitigation would be required.

Question (b) Conflict with CEQA Guidelines regarding analysis of transportation impacts: Less-than-significant Impact. Section 15064.3, subdivision (b) of the CEQA Guidelines describes criteria for analyzing transportation impacts. The proposed project would result in approximately 30.9 average daily trips for all classes of vehicles. Many local agencies have developed screening thresholds to indicate when detailed analysis is needed. As set forth in the Governor's Office of Planning and Research Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018), "absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy or general plan, projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact". Because the project would be considered consistent

with the Merced County General Plan, and the project would not generate a significant number of trips and associated vehicle miles traveled, a less-than-significant impact would occur, and no mitigation would be required.

Question (c) Increase hazards due to geometric design feature: Less-than-significant Impact. Following completion of construction, any roadway disturbance would be returned to its original condition. Implementation of the proposed project would not result in any permanent changes to the design features or uses of project roadways, or the construction of new roadways. There would be no increase to hazards related to a geometric design feature, or due to incompatible uses. A less-than-significant impact would result, and no mitigation would be required.

Question (d) Inadequate emergency access: Less-than-significant Impact. The Merced County Fire Department maintains standards for access roadways to provide for adequate emergency access. Project implementation would not interrupt emergency access to the dairy facility, and compliance with County roadway standards would ensure adequate emergency access. This would be a less-than-significant impact, and no mitigation would be required.

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

REGULATORY SETTING

Effective July 1, 2015, Assembly Bill 52 (AB 52) amended CEQA to require that: 1) a lead agency provide notice to any California Native American tribes that have requested notice of projects proposed by the lead agency; and 2) for any tribe that responded to the notice within 30 days of receipt with a request for consultation, the lead agency must consult with the tribe. Topics that may be addressed during consultation include Tribal Cultural Resources (TCR), the potential significance of project impacts, type of environmental document that should be prepared, and possible mitigation measures.

Section 21074(a) of the Public Resource Code (PRC) defines TCRs for the purpose of CEQA as sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

a. included or determined to be eligible for inclusion in the California Register of Historical Resources; and/or
b. included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; and/or
c. 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

"Substantial evidence" is defined in Section 21080 of the Public Resources Code as "fact, a reasonable assumption predicated upon fact, or expert opinion supported by fact."

The criteria for inclusion in the California Register of Historical Resources (CRHR) are as follows [CCR Title 14, Section 4852(b)]:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; and/or
2. It is associated with the lives of persons important to local, California, or national history; and/or
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; and/or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity, which is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association [CCR Title 14, Section 4852(c)].

ENVIRONMENTAL SETTING

Records Search and Consultation

The Native American Heritage Commission (NAHC) was contacted to request an examination of their Sacred Lands Files to determine whether the project is located on sacred land. A current list of Native American tribal representatives who may have concerns regarding the proposed project was also requested. The search was completed and no Sacred Lands files were identified for the vicinity of the proposed project site (NAHC 2020). The NAHC provided a list of tribes that are traditionally and culturally affiliated with the geographic area of the proposed project. However, no tribes have previously requested consultation with Merced County regarding tribal cultural resources (TCR) (Guerrero pers. comm. 2020).

Summary of AB 52 Compliance

Section 21080.3.1 (b) of the Public Resources Code states that:

> "… the lead agency shall begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if: (1) the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed project in the geographic area that is traditionally and culturally affiliated with the tribe…"

Merced County has received no written requests to be notified of projects in which the Merced County is the Lead Agency under CEQA (Guerrero, pers. comm, 2020). Accordingly, Merced County has no further responsibility in regard to AB 52 consultation. Should one or more tribes request consultation on the project at some point in the future, Merced County may engage in discussions with the tribe, but such discussions would not be subject to the requirements of the AB 52 process.

ENVIRONMENTAL ANALYSIS

AB 52 established that a substantial adverse change to a TCR has a significant effect on the environment. In assessing substantial adverse change, the County must determine whether or not substantial evidence of a TCR exists within the project area. If substantial evidence of a TCR exists, the County would then determine whether or not the project would adversely affect the qualities of the known tribal cultural resource.

Questions (a) and (b) Affect CRHR resources, or significant California Native American Tribal resources: Less-than-significant Impact. A sacred lands file search was conducted by the NAHC, and no sacred lands were identified for the vicinity of the project site. Additionally, a CCIC Records Search for cultural resources found no prehistoric archaeological resources on the project site or in its vicinity that have been reported to the CCIC. No tribes listed by the NAHC as being traditionally and culturally affiliated with the area have requested notification from Merced County of proposed projects in the area.

Because no known tribal cultural resources were identified that are listed/eligible for listing on the CRHR, or are otherwise deemed significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, and because no tribes have registered with the County for consultation on proposed projects in the area, implementation of the proposed project would not cause a significant adverse change in significance of a TCR determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. A less-than-significant impact would result, and no mitigation would be required.

XIX. UTILITIES AND SERVICE SYSTEMS

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

ENVIRONMENTAL SETTING

There are five on-site employee residences located at the dairy facility, and additional residences on an adjacent parcel that is owned by the project applicant. Domestic water is provided to the site by several on-site water wells, and sewer service is provided by on-site septic systems. The site is not served by any developed community water, wastewater, or stormwater utilities. Solid waste collection and disposal are provided by private service.

The proposed dairy expansion would rely on existing utilities, including domestic water, septic systems, stormwater, electrical, gas, and telecommunication services. No additional utilities would be required.

ENVIRONMENTAL EVALUATION

Because confined animal facilities, including dairies, would not require additional public facilities beyond those typically provided in agricultural areas, implementation of the proposed dairy modification project would not be expected to increase the demand for public facilities beyond the levels provided and planned for by public utilities.

Question (a) Construct or relocate new service system facilities: Less-than-significant Impact. The proposed dairy modification would not involve the construction or relocation of any new water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities. Domestic water is delivered to the site by several on-site water wells, and sewer service is provided by on-site septic systems. No modification to existing septic systems would be required. The project site receives minimal off-site storm run-on. All stormwater generated at the project site from existing and proposed areas with impermeable surfaces is, and would

continue to be, collected and routed to the existing wastewater management system within the project applicant's larger property. Therefore, no adverse effects to storm drainage are expected.

Therefore, impacts related to the construction or relocation of new service system facilities would be less than significant, and no mitigation would be required. For a discussion of dairy wastewater disposal and compliance with CVRWQCB requirements, see Section X, *Hydrology and Water Quality*.

Question (b) Sufficient water supply: Less-than-significant Impact. No public water supply systems would be affected by the proposed project. On-site wells and surface water resources currently provide water used for the dairy operation. The proposed project includes the continued use of existing water resources. Water usage for the dairy would incrementally increase with the proposed dairy modification. Potential impacts to water supply are evaluated in Section X, *Hydrology and Water Quality*, above.

Question (c) Wastewater treatment capacity: No Impact. No public wastewater collection or treatment systems are provided to the project site, nor would they be required by this project. There would be no impact, and no mitigation would be required.

Questions (d) and (e) Solid waste: Less-than-significant Impact. The proposed project consists of construction of expanded dairy facilities. The provision of solid waste collection service to serve the proposed project would be subject to the normal tariffs and requirements of the service provider, and would not result in the need for any major new systems or substantial alterations to these utility systems. It would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. There would be no change to existing conditions that would result in non-compliance with federal, state, and local management and reduction statutes and regulations related to solid waste. This would be a less-than-significant impact, and no mitigation would be required.

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

According to California Fire and Resource Management Program Fire Hazard Severity Zone map, the proposed project area is within the Local Responsibility Area, with an Unzoned designation. The threat of wildfire hazard in that area is determined to be unlikely. (CAL FIRE 2008)

Questions (a) through (d): No Impact. The project site in not located in or near state responsibility areas, or lands classified as very high fire hazard severity zones. It is located in an existing low-density agricultural area, and the threat of wildland fire has been determined to be unlikely (CAL FIRE 2008). Because the proposed project is not located in or near a State Responsibility Area nor on lands classified as very high fire hazard severity zones, no impact would occur and no mitigation would be required.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

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

Question (a) Degrade quality of the environment: Less-than-significant Impact with Mitigation. As discussed above, the project has the potential to adversely impact: air quality, cultural resources, nuisance conditions due to insects, hydrology and water quality, and land use compatibility. With the implementation of mitigation measures identified in this Initial Study (see below), all potential impacts would be reduced to a less-than-significant level. No significant or potentially significant impacts would remain.

Mitigation Measure AQ-1:

Prior to the issuance of the first grading permit, the applicant shall provide to the County a receipt of a SJVAPCD approved Dust Control Plan or Construction Notification form in compliance with Regulation VIII – Fugitive Dust PM_{10} Prohibitions. The dairy modification may be subject to additional rules, including, but not limited to Rule 4570, Confined Animal Facilities, Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations), and Rule 4002 (National Emission Standards for Hazardous Air Pollutants). The project applicant will be required to implement measures of applicable SJVAPCD Rules and Regulations as noted.

Mitigation Measure AQ-2:

Implement Mitigation Measure AQ-1.

Mitigation Measure AQ-3a:

To minimize potential for odor nuisance conditions, prior to initiating operations at the new facilities, the applicant shall prepare an Odor Control Plan for submission and approval by the Merced DEH. Following approval, the applicant shall implement the approved Plan. The following odor control measures shall be required in the Plan:

- Liquid manure utilized for irrigation purposes shall be managed so that it does not stand in the application field for more than 24 hours.
- Implement odor control measures as contained in the Plan, which may include, but not be limited to the following:

    3. Ration/diet manipulation

        This approach involves the alteration of feed in order to reduce the volume of substrate available for anaerobic activity. The approach includes reducing the nitrogen content of food, phase feeding, repartitioning agents, improved animal genetics, and various feed additives.

    4. Manure management

        Utilize best management practices for manure management, including minimizing the time between excretion and application, and aeration of retention basins.

        Additionally, implement the following additional best management practices:

        Manure Collection Areas
        - Clean out manure generated at the freestall barns daily and corrals at least twice a year, or more frequently as necessary to minimize odors;
        - Keep cattle as dry and clean as possible at all times;
        - Scrape manure from the corrals and bedding from the freestall barns and corrals at a frequency that would reduce or minimize odors.

        Manure Treatment and Application
        - Minimize moisture content of stockpiled manure/retained solids to a level that would reduce the potential for release of odorous compounds during storage;
        - Minimally agitate stockpiled manure during loading for off-site transport;
        - Mix process water with irrigation water prior to irrigation (dilution rate shall be adequate to minimize odor levels and maintain appropriate nutrient content in effluent);
        - Clean up manure spills upon occurrence;
        - Maintain and operate settling ponds and retention ponds to minimize odor levels.

        General

        - Implement dust suppression measures to prevent the release of odorous compound-carrying fugitive dust;
        - During project operations, the dairy operator/owner shall respond to neighbors who are adversely affected by odors generated at the project site and take prompt corrective action.

If necessary and feasible, the animal confinement operation must implement the following additional measures:

1. Manure treatment
   Manure treatment methods include maintaining aerobic conditions during storage, aerobic treatment using aerated lagoons or composting, anaerobic digestion, and biochemical treatment.

2. Capture and treatment of emitted gases
   This approach includes the use of covered storage pits or lagoons, soil incorporation of applied liquid or solid manure, and dry scrubbers for building exhaust gases including soil absorption beds, bio-filter fields, or packed beds.
3. Enhanced air dispersion
   Odor and other air contaminants are diluted to below threshold levels by atmospheric turbulence that increases with wind velocity, solar radiation, and roughness elements such as buildings, trees, or barriers. Sound site selection with adequate separation distance and elevated sources or mechanical turbulence can aid in dispersing odorous compounds and avoiding nuisance conditions.
4. Enhanced land spreading procedures
   Procedures may be modified to minimize impacts by avoiding spreading when the wind is blowing towards populated areas, employing technologies to incorporate manure into soil during or directly after application (i.e. injection, plowing, disking), or spreading manure in thin layers during warm weather.

Mitigation Measure AQ-3b:

Implement the nuisance control measures set forth in Mitigation Measure HAZ-1.

Mitigation Measure CUL-1:

A. If buried cultural resources such as chipped or ground stone, midden deposits, historic debris, building foundations, or human bone are inadvertently discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop responsible treatment measures in consultation with Merced County and other appropriate agencies.

B. If remains of Native American origin are discovered during proposed project construction, it shall be necessary to comply with state laws concerning the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (NAHC). If any human remains are discovered or recognized in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:
   - The County coroner has been informed and has determined that no investigation of the cause of death is required; and
   - If the remains are of Native American origin:
     - √ The most likely descendants of the deceased Native Americans have made a recommendation to the landowner or person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC 5097.98; or
     - √ The NAHC has been unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours after being notified.

C. According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American

cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the NAHC.

Mitigation Measure HAZ-1:

The following operational measures identified in the EIR for the ACO shall be implemented prior to obtaining a building permit and throughout ongoing operations.

1. All confined animal facilities shall implement the following Best Management Practices to address potential fly problems:
    a. Daily inspection of manure flushing systems to ensure that manure is being effectively removed from flushed areas, with particular attention paid to corners and isolated areas;
    b. Daily inspections of water supply and circulation systems to ensure that any leaks are promptly repaired. These inspections shall include all watering troughs to ensure that mechanisms for controlling water level are operating effectively and are protected from damage;
    c. Regular blading of feeding lanes in freestall barns and corrals to ensure that spilled feed is promptly removed and disposed;
    d. Daily removal of manure and spilled feed from stalls in freestall barns;
    e. Scraping of corrals at least twice a year to minimize the potential for development of fly populations on manure;
    f. Weekly inspection of silage storage areas to ensure proper covering, drainage, and removal of any spoiled silage;
    g. Weekly inspection of fence lines of corrals and other "edge" areas, and removal of any accumulated manure;
    h. Periodic monitoring of stable flies by direct observation and counting of the number of stable flies on the legs of a representative number, minimum of two percent, of the support stock herd;
    i. All exterior doors and windows in milk rooms shall have screens that are inspected monthly to determine if they are working properly, and to identify rips in the screening. Ripped or otherwise damaged screens shall be repaired or replaced immediately;
    j. If necessary, flytraps shall be set throughout barns at strategic locations. The traps are inspected monthly, or more frequently if necessary, and replaced when saturated with captured flies.
2. In addition to fly management practices in the cattle housing and milking areas of dairy facilities, the following sanitation practices shall be implemented at animal confinement facilities to control fly populations:
    a. Dead animals shall be stored in a secured area at the dairy facility, and off-site rendering plant operators shall immediately be notified for pickup of carcasses. Carcasses must be removed within three business days pursuant to ACO Section 18.64.005(A);
    b. Residual feed shall be removed from infrequently used feeding areas;

c. All garbage shall be disposed of in closed dumpsters that are regularly emptied by a contracted waste management service for off-site disposal;

d. Grass and other landscape clippings shall be removed from the site for off-site disposal or reuse (as feed or soil amendment).

Mitigation Measure HYD-1:

The project applicant shall submit Permit Registration Documents (PRD) for the Construction General Permit Order 2009-0009-DWQ to the State Water Resources Control Board, and comply with, and implement, all requirements of the permit. A Legally Responsible Person (LRP) shall electronically submit PRDs prior to commencement of construction activities in the Storm Water Multi-Application Report Tracking System. PRDs consist of the Notice of Intent, Risk Assessment, Post-Construction Calculations, a Site Map, the Storm Water Pollution Prevention Plan (SWPPP), a signed certification statement by the LRP, and the first annual fee. Following submittal of a Notice of Intent package and development of a SWPPP in accordance with the Construction General Permit, the applicant will receive a Waste Discharge Identification Number from the SWRCB. All requirements of the site-specific SWPPP, including any revisions, shall be included in construction documents and must be available on site for the duration of the project.

Mitigation Measure HYD-2a:

The following Best Management Practices shall be implemented as applicable:

1. Positive drainage shall be included in project design and construction to ensure that excessive ponding does not occur. The design shall comply with Title 3, Division 2, Chapter 1, Article 22, Section 646.1 of the Food and Agriculture Code for construction and maintenance of dairy or facility surroundings, corrals, and ramps, as described below.
2. Dirt or unpaved corrals, or unpaved lanes, shall not be located closer than 25 feet from the milking barn or closer than 50 feet from the milk house. Corral drainage must be provided.
3. A paved (concrete or equivalent) ramp or corral shall be provided to allow the animals to enter and leave the milking barn. This paved area shall be curbed (minimum of 6 inches high and 6 inches wide) and sloped to a drain. Cow washing areas shall be paved (concrete or equivalent) and sloped to a drain. The perimeter of the area shall be constructed in a manner that will retain the wash water to a paved drained area. Paved access shall be provided to permanent feed racks, mangers, and water troughs. Water troughs shall be provided with: (1) a drain to carry the water from the corrals; and (2) pavement (concrete or equivalent) which is at least 10 feet wide at the drinking area.
4. The cow standing platform at permanent feed racks shall be paved with concrete or equivalent for at least 10 feet back of the stanchion line.
5. As unpaved areas are cleaned, depressions tend to form, allowing ponding and increased infiltration. Regular maintenance shall include filling of depressions. Personnel shall be taught the correct use of manure collection machines (wheel loaders or elevating scrapers).

Mitigation Measure HYD-2b:

The applicant shall comply with requirements of the NMP/WMP, implement CVRWQCB requirements included in the individual WDR for the proposed expansion, and with all Merced County ACO requirements not superseded by the conditions of the individual WDR.

Mitigation Measure HYD-2c:

As set forth in the NMP, proposed application rates of liquid and/or solid manure shall not exceed agronomic rates. Nutrient samples shall be collected prior to and during applications periods to confirm agronomic rates within all portions of cropped areas receiving manure, and to protect water supplies. Soil testing frequency for nitrogen, potassium, phosphorus, and salts are described in the NMP. Modifications to the NMP may be required as outlined in the individual WDR for the proposed expansion to be issued by the CVRWQCB.

Mitigation Measure HYD-2d:

The CVRWQCB may require an industry-wide or site-specific salinity report to be submitted to the CVRWQCB for review and approval prior to operation or final inspection. The salinity report shall identify sources of salt in waste generated at the dairy; evaluate measures that can be taken to minimize salt in the dairy waste; and include an affirmative commitment by the applicant to implement measures identified to minimize salt in the dairy waste to meet Basin Plan requirements. Any necessary measures shall be incorporated into the WDR issued for the facility or become a required deliverable of the WDR.

Mitigation Measure HYD-2e:

A site-specific shallow groundwater monitoring system has not been implemented for the Nunes Dairy. As a condition of the individual WDR issued for the facility, the CVRWQCB may require shallow groundwater monitoring wells to be installed and monitored or require the facility to contribute to a regional representative groundwater monitoring system to confirm water table gradients and water quality variations. Monitoring well requirements and a monitoring schedule shall be included in the WDR issued for the facility. The resulting groundwater monitoring objectives for either the regional program or individual site shall be used to assess and mitigate groundwater impacts.

Mitigation Measure HYD-2f:

Groundwater monitoring of the on-site domestic and irrigation wells as required under the General Order and individual WDR shall be completed by the dairy operator. Potential future groundwater monitoring wells may be sampled as required by the WDR, or depending on the success of the regional representative monitoring program. If appropriate, surrounding properties with domestic water supply wells within 500 feet of the land application property could be considered for sampling for nitrate and E.C. at a minimum. A well monitoring schedule shall be incorporated into the WDR issued for the facility.

Mitigation Measure HYD-2g:

After project implementation and subsequent groundwater monitoring, if the dairy shows increased concentration in groundwater of constituents of concern, additional manure exportation, a reduction in herd size, or additional crop acres may be necessary to accommodate

the proposed expansion. A new Report of Waste Discharge (ROWD) may be required by the CVRWQCB. The ROWD shall clearly demonstrate that the herd size will not constitute a threat to groundwater quality. If necessary, the CVRWQCB shall revise the WDR issued to the facility.

Mitigation Measure HYD-2h:

The Department of Community and Economic Development and the Division of Environmental Health shall make a final inspection of the facility prior to the commencement of expanded operations to confirm the dairy meets local and state requirements.

Mitigation Measure HYD-3:

Over the course of operations, the project sponsor shall obtain written agreement from the recipients of dry and liquid manure exported off site to require demonstrated compliance with the following:

- The recipient belongs to an approved third-party group or coalition compliant with the Long-term Irrigated Lands Regulatory Program General Orders adopted by the RWQCB, is covered by an Individual Discharger General Order, or is otherwise covered by Confined Animal Facility WDRs as adopted by the RWQCB.
- All manure shall be applied to cropland at rates and times that are reasonable for the crop, soil, climate, special local situations, and management system. Manure applications shall be timed and managed to minimize nitrogen movement below the root zone and to minimize percolation of waste constituents to groundwater.
- All stormwater that is or has been in contact with manure shall be maintained on site. No storm drainage that has been in contact with manure shall be allowed to flow or seep onto adjacent properties or public roads, or into any waterway.
- Where the commingling of water containing manure can take place with irrigation wells and irrigation and/or drainage district facilities, these facilities must be protected from pollution by a backflow device or method that is approved by the Division of Environmental Health and/or the appropriate irrigation/drainage district. It is the obligation of the property owner to install and maintain or cause to be installed and maintained the backflow device or method.
- Manure shall not be applied within 100 feet of any domestic well, irrigation well, or surface water body. Surface water bodies include creeks, streams, lakes and reservoirs, but do not include canals constructed above grade. Adequate protection of surface water bodies or irrigation wells shall prevent discharge or infiltration of manure constituents to the water body or well.

The project sponsor shall provide the most recent analysis of the liquid or dry manure, in writing, to the manure recipient. The signed agreement between the project sponsor and the recipient of manure exported off site shall be submitted to the Merced County Division of Environmental Health for review.

Mitigation Measure LU-1a:

Implement the odor control measures set forth in Mitigation Measure AQ-3a.

Mitigation Measure LU-1b:

Implement the nuisance control measures set forth in Mitigation Measure HAZ-1.

Question (b) Cumulatively considerable impacts: Less-than-significant Impact. While the proposed project could contribute to cumulative impacts associated with increased development in the region, these impacts have previously been evaluated by the County and considered in development of the County's 2030 General Plan. The 2030 General Plan EIR comprehensively evaluated the potential environmental effects, including the potential countywide and cumulative impacts, of implementing the 2030 General Plan. As discussed in the preceding discussion of tiering, the General Plan EIR is hereby incorporated by reference into this Initial Study pursuant to State CEQA Guidelines Section 15150 as though fully set forth herein.

As discussed in this Initial Study, the Nunes Dairy project has the potential to result in impacts to air quality, cultural resources, nuisance conditions due to insects, hydrology and water quality, and land use compatibility. As set forth in the appropriate topical discussions of this Initial Study, effects to these issue areas are all subject to the proposed mitigation measures identified in this Initial Study, State, Federal, and County standards and regulations, and 2030 Merced County General Plan policies and programs designed to avoid, reduce, or mitigate such effects.

Implementation of the proposed project would result in the modification of an existing dairy, including an increase of 824 milk cows. As viewed within the context of the overall growth and development in the County as outlined in the 2030 Merced County General Plan, the potential impacts of the proposed project are individually limited and not considered "cumulatively considerable." Additionally, after mitigation, the project has been determined not to have significant project level or cumulative level effects for any environmental issue. Therefore, construction and operation of the proposed project would not make a cumulatively considerable contribution to cumulative impacts, and would result in a less-than-significant impact when viewed in connection to the effects of past and probable future projects.

Question (c) Adversely affect human beings: Less-than-significant Impact. As demonstrated in the detailed evaluation contained in this Initial Study, because of existing site conditions, Merced County standards, Merced County 2030 General Plan programs and policies, and the regulation of potential environmental impacts by other agencies, in addition to mitigation measures included in this Initial Study, the proposed Nunes Dairy project would not have the potential to cause substantial adverse effects on human beings. This would be a less-than-significant impact.

3. APPLICANT AGREEMENT TO MITIGATION MEASURES

By the signature below, the project applicant agrees to implement and incorporate the Mitigation Measures identified in this Initial Study as outlined above in Section XXI, *Mandatory Findings of Significance*, as part of the Nunes Dairy Expansion project.

Signed: Antonio Nunes

Printed Name: Antonio Nunes Date: 5-28-20

4. PREPARERS OF THE INITIAL STUDY

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5. LITERATURE CITED

The following documents were referred to as information sources during preparation of this document. They are available for public review at the web addresses shown after the listing. All documents without an Internet address are available at the County of Merced, Community and Economic Development Department 2222 'M' Street, Merced, California 95340.

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DETERMINATION

On the basis of this initial evaluation:

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

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

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

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

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

Signature Date

Pam Navares June 8, 2020

Pam Navares, Planner II
Merced County
Community and Economic Development Department

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