ENVIRONMENTAL CHECKLIST

Initial Study

1. Project Title:	Central Valley Dairy Digester and Co-digester Facilities Program EIR
2. Lead Agency Name and Address:	California Regional Water Quality Control Board, Central Valley Region, (Central Valley Water Board or CVWB)
3. Contact Person and Phone Number:	Stephen Klein (559) 445-5558 CVWB Project Manager
4. Project Location:	California Regional Water Quality Control Board, Central Valley Region (Region 5) jurisdictional boundaries (Central Valley, California)
5. Project Sponsor's Name and Address:	California Regional Water Quality Control Board, Central Valley Region 1685 E Street Fresno, California 93706
6. General Plan Designation(s):	NA
7. Zoning Designation(s):	NA

8. Description of Project.

The Central Valley Regional Water Quality Control Board (Central Valley Water Board or CVWB) is proposing to develop a waste discharge regulatory program for anaerobic digesters (digesters) using manure and manure plus other organic feedstocks (i.e., used in co-digestion) located on-site or off-site dairy facilities in the Central Valley Region (Region 5). Regulatory options under consideration for the program include Waste Discharge Requirements (WDRs) General Orders and/or Conditional Waiver of WDRs. These WDRs and/or conditional waivers will regulate the discharge of effluent and solid digestate generated from dairy manure digesters and dairy manure co-digester projects.

A Program Environmental Impact Report (EIR) will be prepared to evaluate the environmental effects that could result from the development of dairy manure digester and co-digestion facilities within the Central Valley Region, and is intended to provide California Environmental Quality Act compliance for the water quality WDRs and/or conditional waivers issued by the Central Valley Water Board to the owners and operators of those facilities. These digester facilities will also require discretionary permits issued by other state, county and local agencies and special districts. The Program EIR is being developed to allow the other permitting agencies and districts to rely on or tier off the Program EIR to satisfy California Environmental Quality Act (CEQA) requirements. The goal is to reduce the time required for environmental review

and other discretionary permitting of digesters at dairies and central facilities throughout the Central Valley.

Any water quality WDRs and/or conditional waivers issued under this program will contain terms and conditions to implement applicable requirements of the Porter Cologne Water Quality Control Act (California Water Code §13000 et seq.), the California Code of Regulations; the Water Quality Control Plan for the Tulare Lake Basin, Second Edition (Tulare Lake Basin Plan); the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin, Fourth Edition (Sacramento and San Joaquin Basin Plan); and the State Water Resource Control Board Resolution No. 68-16 (Antidegradation Policy); and all other applicable Central Valley Water Board or State Water Resources Control Board plans and policies.

General WDRs and/or conditional waivers under this program will be applicable to existing dairies with facility-produced manure-only digesters and new or expanded dairies with facility-produced manure-only digesters. The proposed permitting process will also be applicable to dairies that propose to co-digest facility-produced-manure with other organic feedstocks, as well as centralized digester and co-digester facilities on or off-site dairy facilities that receive manure from single or multiple dairies.

Background

California is split into nine water quality regions based on watershed boundaries, with each region under the jurisdiction of a semi-autonomous Regional Board. The project is under the authority of the California Regional Water Quality Control Board, Central Valley Region. (Central Valley Water Board or CVWB). The Central Valley Region is the State's largest region (as shown in **Figure 1**).

According to the 2007 *Census of Dairies and Dairy Cows* (California Agricultural Resource Directory, 2007), there are approximately 1.6 million cows at 1,578 dairies in the CVWB's jurisdiction. Dairy cows on average produce approximately 112 pounds of manure per day (Burke, 2001), which would equate to about 180 million pounds of manure generated per day within the Central Valley Region. This substantial quantity of manure has the potential to produce biogas, a renewable source of energy, if it is processed in a digester.

Broad objectives of the project are as follows:

- Support the Bioenergy Action Plan for California (July 2006)
- Support Executive Order S-06-06, which established targets for the use and production of biofuels and biopower and instructed state agencies to work together to advance biomass programs in California.
- Support a CVWB regulatory program to streamline the permitting of dairy manure digester facilities and dairy manure co-digester facilities. The CVWB estimates that this waste discharge regulatory program will reduce water quality permitting time by 75 percent or more through the use of general WDRs and/or conditional waivers.
- Reduce the time required to develop and issue permits associated with digesters by other state and local permitting agencies. For example, the Air Resources Board (ARB) and San Joaquin Valley Air Pollution Control District (SJVAPCD) have estimated that the certification of the Program EIR will reduce air quality permitting time by 50 percent or more for certain digester projects.

SOURCE: Central Valley RWQCB, 2009; and ESA, 2010

Central Valley Dairy Digester and Co-digester Program EIR . 209481

Figure 1

California Regional Water Quality Control Board – Central Valley Region
Region 5

- Enable State Agencies to achieve Executive Order S-14-08 to reduce permitting times by 50 percent or more for renewable energy projects.
- Reduce costs to comply with CEQA on the order of tens of thousands of dollars for smaller projects to hundreds of thousands of dollars for larger projects.
- Address the cross-media environmental requirements of multiple state and local agencies in one EIR.
- Increase opportunities for energy companies to achieve 2010 and 2020 California Renewable Portfolio Standards by converting dairy manure, green waste, and other waste streams to a valuable, renewable green energy resource.
- Provide an alternate waste treatment method for dairy manure and other organic waste streams and create a new revenue source for California dairies.
- Assist in meeting greenhouse gas (GHG) reduction measures in support of the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32). The AB 32 Scoping Plan includes the following greenhouse gas reduction measures related to anaerobic digestion:
    - Measures E-3. Achieve a 33% renewables mix by 2020. (Anaerobic digestion produces biogas which is a renewable energy source.)
    - RW-3 High Recycling/Zero Waste. (Anaerobic digestion is one of five subcategories listed under this measure.)

Anaerobic digestion is the biological decomposition of organic matter in the absence of molecular oxygen. This project encompasses both manure digestion and co-digestion processes, which differ according to feedstock. The anaerobic digestion process results in the production of biogas and digestate. The biogas consists primarily of methane (CH_4), which can be used for energy, and carbon dioxide (CO_2), with small amounts of hydrogen sulfide (H_2S), and ammonia (NH_3). Typically biogas is saturated with water vapor and may have trace amounts of hydrogen (H_2), nitrogen (N_2), oxygen (O_2), dust and siloxane (Greer, 2010). The residual products from anaerobic digestion are wastewater and solid residuals (digestate). The anaerobic digestion process occurs naturally in marshes, wetlands and is the principal decomposition process in landfills.

Anaerobic digestion at dairies follows a general process as shown in **Figure 2**, although the actual facility and digester type can vary. As seen in Figure 2 there are several potential uses for the biogas produced by the anaerobic digester (AD) facilities.

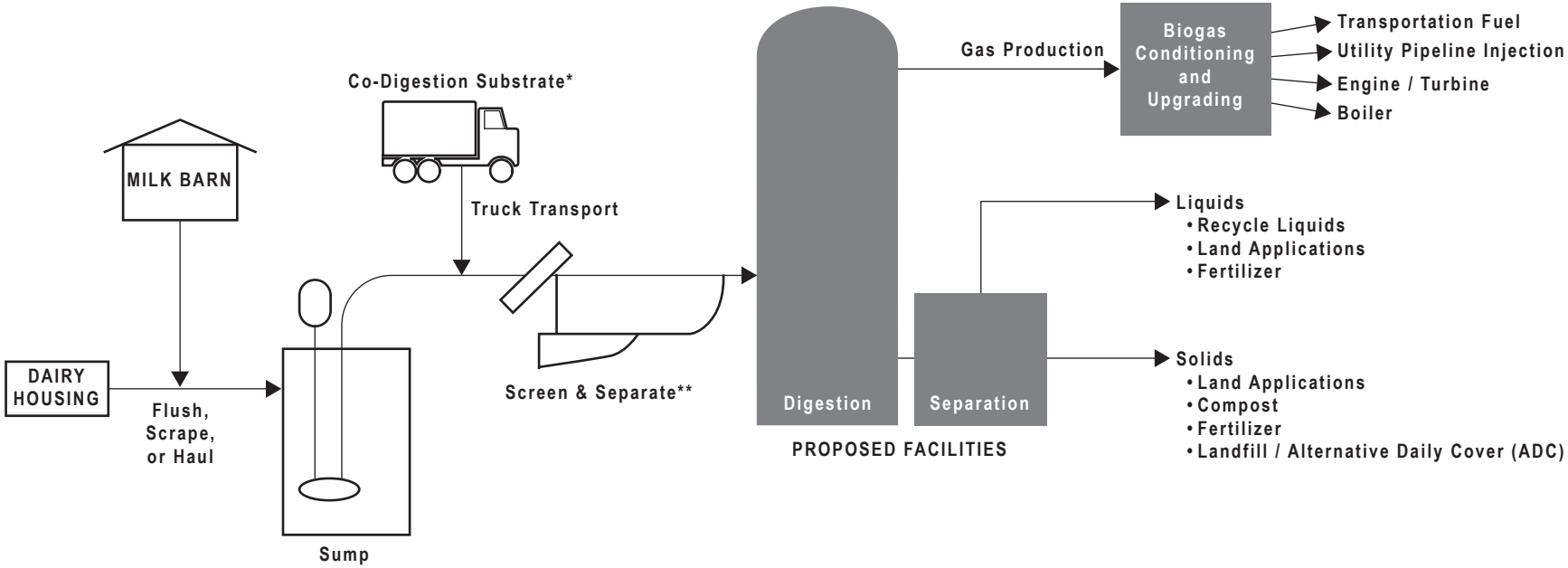
The following AD facility categories are addressed in this document:

- <u>Individual Dairies</u>

  This facility type includes the addition of AD facilities (i.e., dairy manure digester or co-digester facilities) onto an individual dairy (an operation that houses dairy cows and collects and processes manure). Facilities would be located within the current footprint of the dairy operations.

- <u>Centralized Locations</u>

  There are two categories of centralized location facilities for dairies that will be assessed in this EIR: (1) Central AD Facility, whereby individual dairies would collect manure and transport the manure by pipeline or truck to a central facility; and (2) Central Biogas Clean-Up Facility, whereby raw biogas from individual dairies (including dairies linked



* If co-digestion will be implemented at facility
** Screen & Separate – this step may be needed to remove straw, sand, and silt (Burke, 2001)

SOURCE: Burke, 2001; and ESA, 2010

Figure 2
Integration of Anaerobic Digestion in the Dairy Waste Stream

via underground gas pipelines) is piped to a central facility. These types of centralized facilities can be on dairies or located off-site. For both location options, the central facility would have the potential to receive manure, manure plus co-digestion substrate, and/or raw biogas.

The EIR will evaluate environmental impacts from the three basic types of systems including ambient-temperature anaerobic covered lagoons, plug-flow digesters, and complete mix systems. There are many variations and gradations between these basic types of AD systems. Each of the three basic digester types is described below.

The EIR will evaluate potential environmental impacts from a range of potential uses of the biogas including: on-site electrical production units (e.g., engines, turbines, and fuel cells), pipeline injection (i.e., into the utility natural gas pipelines), and transportation fuels (e.g., compressed biomethane and liquefied biomethane).

- Anaerobic Covered Lagoons

  Ambient-temperature covered lagoons are covered ponds, where the manure waste stream enters one end (influent) and the digested effluent is removed at the other end. The lagoons are covered by an impermeable cover that captures the biogas generated by AD. Covered lagoons are not typically heated and operate at ambient ground temperatures and therefore the AD reaction and biogas production rates are affected by seasonal temperature variations.

- Plug-Flow Digester

  Plug-flow digesters typically consist of unmixed, rectangular tanks that are normally heated by a hot water piping system to mesophilic temperatures (68º to 105º F) within the reactor. The rate of bacterial growth and AD is faster with higher temperatures than at ambient conditions. This AD system is typically used to digest thick waste with a relatively high solids concentration.

- Complete Mix Digester

  Complete mix anaerobic digesters consist of aboveground tanks whereby the organic waste stream is heated to mesophilic or thermophilic (110º to 160º F) temperatures and continuously or intermittently mixed by mechanical, gas, or liquid circulation mixers. Complete mix digester systems accommodate a wide-range of solids concentrations and can handle sand and silts in the waste stream since the mixing prevents stratification (Burke, 2001).

In summary, AD facilities are anticipated to provide the following benefits:

- reduce the odor associated with dairies,
- reduce GHG emissions,
- provide a renewable source of energy, and
- increase recycling and reduce waste.

Biogas generated through the AD process, which is the renewable source of energy listed above, is captured and can be used directly in internal combustion engines to produce electricity and heat, or the biogas can be upgraded to biomethane through the removal of hydrogen sulfide, carbon dioxide (CO_2), and moisture. Biomethane is a product equivalent to natural gas, which typically contains more than 95 percent methane. Biomethane can be used in place of natural

gas for various processes, including use by utility companies if the biomethane is upgraded to utility standards and injected into a natural gas supply pipeline, as well as for electrical generation, heating, cooling, and for natural gas-fueled vehicles (Krich, et al., 2005).

The manure digestion process would occur 24 hours a day at AD facilities. The number of site visitors and employees at dairies is not anticipated to change substantially as a result of the addition of AD facilities. There may be increased truck trips associated with the delivery of agricultural products (in the case of co-digestion) or the transport of manure or biogas products (in the case of centralized facilities).

This Initial Study (IS) is being utilized as a tool to communicate the project concepts and likely key issues to interested members of the public, as well as trustee and responsible agencies, and to focus issue areas that could be potentially significant. The CVWB intends to prepare a Program EIR to discuss the project's potential effect on the environment and meet the project objectives described above. The Program EIR will identify and address potentially significant effects on the environment related to dairy digesters, and provide program-level measures to mitigate identified impacts.

9. Surrounding Land Uses and Setting.

The AD projects would be located in the Central Valley. The Central Valley is a large valley (approximately 42,000 square miles) that dominates the central portion of California. The population of the Central Valley is about 6.5 million persons. The Central Valley is one of the most productive agricultural regions in the United States, and the location for more than 1,500 dairies. Two major rivers in the Central Valley are the Sacramento River, that drains the northern third of the valley, and the San Joaquin River that drains the central third of the valley. The southern third of the Central Valley is the Tulare Lake Basin that is essentially a closed basin. During periods of exceptional precipitation, surface water can flow from the Tulare Lake Basin to the San Joaquin River. The Central Valley has periods of poor air quality because it is a valley surrounded by mountains that can trap air pollutants, and the air pollutant concentrations of ozone and particulate matter often exceed the state and federal standards. With respect to water quality, groundwater in parts of the Central Valley has been degraded, due in part to historical and current land uses and disposal practices. Generally, dairy digesters would be expected to be at dairies or near dairies and accordingly in areas of agricultural land use.

10. Other public agencies whose approval is required.

The CVWB would certify the EIR and the regulatory program for dairy digesters. Individual digester projects within the scope of this program could also potentially require approvals or permits from other jurisdictions or agencies; such as the County, the local air quality management district, California Department of Fish and Game, or the U.S. Army Corps of Engineers. These other entities responsible for issuing approvals could rely on or tier off this Program EIR.

Environmental Factors Potentially Affected

The proposed project could potentially affect the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

- ☒ Aesthetics
- ☒ Biological Resources
- ☒ Hazards and Hazardous Materials
- ☐ Mineral Resources
- ☒ Public Services
- ☒ Utilities and Service Systems
- ☒ Agriculture and Forest Resources
- ☒ Cultural Resources
- ☒ Hydrology and Water Quality
- ☒ Noise
- ☐ Recreation
- ☒ Mandatory Findings of Significance
- ☒ Air Quality & GHG Emissions
- ☒ Geology, Soils and Seismicity
- ☒ Land Use and Land Use Planning
- ☐ Population and Housing
- ☒ Transportation and Traffic

DETERMINATION: (To be completed by Lead Agency)

On the basis of this initial study:

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

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

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

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

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

Clay L. Rodgers
Signature

March 18, 2010
Date

CLAY RODGERS, Assistant Executive Officer
Printed Name

Central Valley Water Board
For

Environmental Checklist

Aesthetics

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
1. AESTHETICS—Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☒	☐	☐	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway corridor?	☒	☐	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☒	☐	☐	☐

Discussion

a, b) Dairy digesters would be located on dairies, or central facilities that may not be dairies. These facilities are likely to be constructed in areas away from scenic vistas and scenic resources; however, because facility locations are unknown at this time, a determination cannot be made. Therefore, the project may have a potentially significant impact on scenic vistas and scenic resources, and these issues will be addressed in the Program EIR.

c) As described above, dairy digesters are likely to be constructed at dairies or at central facilities in agricultural areas and they would be consistent with other major structures that are part of the visual character of agricultural areas. Therefore the visual effect of the digesters developed for the project would not be likely to substantially degrade the visual character of the site and its surroundings. This issue will not be evaluated in the Program EIR.

d) Dairy digesters should have similar lighting requirements to other dairy operations. Outdoor nighttime lighting would primarily be limited to the minimal amount needed for security and safe operations. Dairy digesters may require a flare for combustion of surplus biogas or in the event of equipment failure of biogas conditioning facilities. Flares could be a potential new source of nighttime lighting and thus this issue will be evaluated in the Program EIR.

Agriculture and Forest Resources

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
2. AGRICULTURE and FOREST RESOURCES In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies my refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☒	☐	☐	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☒	☐	☐	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☒	☐	☐	☐

Discussion

a) It is unknown how much of the land on which dairy digesters would be constructed has been designated as Farmland of Statewide Importance. Typically, dairy digester facilities would be considered an agricultural use; they support dairies by providing additional benefits from the dairy manure. However, there is the potential for some co-digester and central facilities development on Important Farmland; therefore this issue will be addressed in the Program EIR.

b) It is unknown how much of the land on which dairy digesters would be constructed has been zoned for agricultural use or is under a Williamson Act contract. Dairy digester facilities are generally considered to be a compatible use with dairies. However, there is the potential for some co-digester and the development of central facilities on land zoned for agricultural use or under a Williamson Act contract, therefore this issue will be addressed in the Program EIR.

c) Dairy digesters would not be located on forest land. The project would not conflict with existing zoning or cause rezoning of forest land. This issue will not be further evaluated in the Program EIR.

d) Dairy digesters would not be located on forest land. The project would not result in the loss of forest land or conversion of forest land to non-forest use. This issue will not be further evaluated in the Program EIR.

e) As discussed above, dairy digester facilities would be considered an agricultural use or use compatible with agriculture. Therefore, it is unlikely that development of digester facilities would result in the conversion of Farmland of Statewide Importance to non-agricultural uses. However, there is the potential for some co-digester and the development of central facilities on land used for agricultural, therefore this issue will be addressed in the Program EIR. Dairy digester facilities are not anticipated to result in the conversion of any forest land to non-forest use.

Air Quality and Greenhouse Gas Emissions

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
3. AIR QUALITY and Greenhouse Gas Emissions 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?	☒	☐	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☒	☐	☐	☐
f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐
g) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

Discussion

a) The project would assess potential construction and operation of AD facilities within the CVWB's jurisdictional boundary. The construction and operation of any AD facilities will be subject to the rules and requirements, including permitting, of the applicable air quality district. The Program EIR will evaluate the potential for the project to conflict with or obstruct the implementation of any applicable air quality plans. Mitigation for potential air quality impacts would be established, as necessary.

b) Air pollutant emissions that would violate or substantially contribute to air quality standard violations may occur during construction and/or operation of AD facilities. Construction emission sources include exhaust generated from the use of heavy equipment and off-road vehicles and fugitive dust generated as a result of soil disturbance during excavation and grading activities. Implementation of standard best management practices would reduce the potential for air quality violations from construction of AD facilities. Appropriate best management practices will be identified and outlined in the Program EIR.

The project would result in the 24-hour per day operation of some AD facilities. Additional air pollutant sources and emissions would depend on several factors, such as the size and type of facility (i.e., AD facilities on individual dairies versus centralized locations), the increased truck traffic on the local roadway network (including haul trucks for co-digester

facilities and for potential waste or biogas transport to centralized facilities), and the post processing of the biogas (i.e., combusted for electricity or cleaned up for use as a transportation fuel or injection to utility transmission lines). The potential nitrogen oxide (NOx) emissions that could result from the combustion of the biogas to produce electricity are an important issue for the project that will be analyzed in the Program EIR. Further discussion of potential air quality impacts and mitigation to reduce impacts will be evaluated in the Program EIR.

c) At the cumulative level, it is anticipated that the project would reduce the prevalence of fugitive methane from naturally occurring manure decomposition while producing a renewable source of energy (biogas). However, construction and operation of AD facilities under the project would result in additional sources and emissions of criteria pollutants (as described in issue "b" above). Consistency with applicable federal and state ambient air quality standards will be further discussed in the Program EIR.

d) Construction and operation of dairy digesters could expose sensitive receptors to substantial pollutant concentrations. During construction, sources of toxic substances would include emissions from off-road equipment (generally diesel fueled) for clearing and grading activities and diesel equipment used to build AD facilities. For operations, toxic emissions would be generated by trucks delivering waste to the AD facilities, as well as emissions from processing equipment operating on-site. In addition, the AD process could release emissions of toxic pollutants such as hydrogen sulfide and ammonia. Further discussion of potential air toxic impacts and mitigation to reduce impacts would be analyzed in the Program EIR.

e) Construction and operation of dairy digesters is anticipated to reduce odors currently associated with dairy waste products since AD occurs in a closed system. Volatile organic compounds are broken down through the anaerobic digestion process, and exhaust is generally processed in a more controlled environment. However, due to the transport, storage, and pre-processing activities of the odiferous cow manure and other organic substrates for potential co-digestion, the siting of these AD facilities, in particular centralized facilities not located on dairies, could lead to objectionable odors at off-site receptors in the vicinity. This issue will be discussed in the Program EIR.

f, g) An established goal of the project is the furthering of compliance with the greenhouse gas (GHG) reduction measures contained in the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32), specifically Measures E-3 (achieve a 33% renewables mix by 2020 – AD produces biogas which is a renewable energy source) and RW-3 (high recycling/zero waste – AD is one of the categories listed under this measure). Furthermore, when biogas is combusted, the substantial methane portion is converted to carbon dioxide, which is much less damaging as a GHG than methane (methane has a global warming potential approximately 23 times greater than carbon dioxide). Finally, if the energy produced through AD operations displaces energy produced from oil, natural gas, or coal, the project could result in greenhouse gas benefits. These benefits, as well as additional potential sources of GHGs as part of the project, such as haul trucks, processing equipment, and increased electricity usage for AD facility operations, will be discussed in the Program EIR.

Biological Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
4. BIOLOGICAL RESOURCES— Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☒	☐	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☒	☐	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☒	☐	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

Discussion

a) Project development has the potential to affect special-status species. Any direct and/or indirect impacts to special-status species would be dependant upon the specific location of the AD facilities. Impacts on special-status species would be low for those projects that construct facilities within dairy footprints, as dairies do not typically support habitat for special-status species. Central location facilities and pipelines have the potential to affect more habitat depending on their location.

The project would comply with the California Endangered Species Act, Federal Endangered Species Act, and Magnuson Stevens Fisheries Conservation Management Act, as appropriate. Further discussion of potential impacts on special-status species and mitigation to reduce impacts would be provided in the Program EIR and implemented at the project level.

b, c) While most dairy digesters are likely to be located on dairies or other areas subject to agricultural practices, AD facilities could adversely affect sensitive natural resources and federally protected wetlands, depending on their location. Generally these impacts can be avoided in the siting process.

During project-level facility siting, a habitat assessment shall be conducted, followed by a wetland delineation, if potential wetland habitat is present. As necessary, permits shall be obtained pursuant to Sections 401 and 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act and Sections 1600-1616 of the California Fish and Game Code. These issues will be addressed in the Program EIR.

d) Project components are unlikely to affect any established wildlife corridors as most digester facilities will be located at dairies. If required, pipelines will be underground and will not impair wildlife movement. The centralized facilities could be located on non-dairy properties and have the potential to affect established wildlife corridors, depending on their location.

The project has the potential to be located on wildlife nursery sites. Mitigation for this potential impact, such as requiring surveys at the project level to determine the potential for wildlife use of the site prior to approval, will be outlined in the Program EIR.

e) Dairy digesters may affect biological resources protected under local ordinance. Mitigation to reduce any potential impacts, including project-specific surveys, will be addressed in the Program EIR.

f) Major adopted plans in the CVWB's jurisdiction include the San Joaquin Multi-species Habitat Conservation and Open Space Plan, Natomas Basin Habitat Conservation Plan (HCP), Kern Water Bank Authority HCP/Natural Community Conservation Planning (NCCP) and East Contra Costa County HCP. The continuation and expansion of agricultural facilities is provided for in most HCPs. Centralized facilities may trigger the need for compliance measures, including site-specific surveys and payment of fees under adopted plans but would not create any conflict. This impact will be less than significant and this issue will not be further evaluated in the Program EIR.

Cultural Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
5. CULTURAL RESOURCES— Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☒	☐	☐	☐
b) Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to §15064.5?	☒	☐	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☒	☐	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☒	☐	☐	☐

Discussion

a) The preferred location for the AD facilities would likely be at dairies or centralized locations in the vicinity of dairies. In general, historic-era buildings in these areas are anticipated to be agricultural in nature. Therefore, project implementation in the vicinity of such historic structures would be consistent with the nature of the building. The potential remains, however, for an impact to the significance of a historical resource through site preparations such as demolition. The Program EIR will include a programmatic-level discussion of the historic resources present in the CVWB's jurisdictional boundary. Additional project-level cultural resources surveys may be necessary for projects located near historic structures or prehistoric sites and such surveys may be considered for inclusion in the provisions of the general WDRs and/or waiver. This issue will be addressed in the Program EIR.

b) At the program level of environmental review, it is not possible to determine if archaeological resources would be disturbed by the installation of AD facilities. Any site grading and excavation activities have the potential to disturb previously unknown archaeological resources. The EIR shall include a program level discussion of the archeological resources present in the CVWB's jurisdictional boundary.

Within this area, prehistoric and ethnohistoric materials might include flaked stone tools, tool-making debris, stone milling tools, fire-affected rock, basketry, culturally modified animal bone, fishing implements, or soil darkened by cultural activities (midden). Historic-era materials might include building remains, metal, glass, cans, or ceramic artifacts or debris.

Potential impacts from the project on archeological resources and measures to mitigate this impact will be addressed in the Program EIR.

c) There is potential for grading operations related to site preparations to result in an adverse impact on paleontological resources. This potential impact would be further discussed in the Program EIR, and measures will be incorporated to mitigate any potentially significant impacts.

d) There is potential for grading operations related to site preparations to result in an adverse impact on human remains. This potential impact would be further discussed in the Program EIR.

Geology, Soils, and Seismicity

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

Discussion

a.i) Fault rupture can occur along fault systems during seismic events (earthquakes). If the rupture extends to the surface, movement on a fault is visible as a surface rupture. The occurrence of fault rupture depends on several factors, including location of the epicenter in relation to the project site, and the characteristics of the earthquake, such as intensity and duration. The hazards associated with fault rupture generally occur in the immediate vicinity of the fault system. Based on the available geologic and seismic data, there are few faults in the Central Valley and fault rupture is not considered likely. The Program EIR would further discuss the potential for fault rupture in the project area, as relevant.

a.ii) Strong earthquakes generated along a fault system generally create ground shaking, which attenuates (i.e., lessens) with distance from the epicenter. In general, the area affected by ground shaking will depend on the characteristics of the earthquake and location of the epicenter.

Much of the Central Valley is located outside of areas that are prone to strong seismic ground shaking. However, depending on the siting of individual AD facilities, some of those facilities may be located in areas that are prone to strong seismic shaking. The Program EIR would require facility construction to meet established local, state, and federal building codes, as relevant, to minimize damage in the event of and earthquake. Additional requirements and mitigation may also be required. For instance, the project applicants would be required to submit to the appropriate county engineering department for review and approval, a geotechnical engineering report produced by a California Registered Civil Engineer or Geotechnical Engineer addressing and making recommendations on the following:

- Road, pavement, and parking area design
- Structural foundations, including retaining wall design (if applicable)
- Design of tanks, pipelines, and other AD facilities
- Grading practices
- Erosion/winterization
- Special problems discovered on the site (e.g., groundwater, expansive/unstable soils, etc.)
- Slope stability

Compliance with California seismic design requirements would ensure that the project would not expose persons or property to hazardous conditions associated with strong seismic ground shaking events. The Program EIR would further discuss the potential for this issue in the project area, as relevant.

a.iii) Liquefaction and other seismically-induced forms of ground movement have historically occurred in California during major earthquake events. These phenomena generally consist of lateral movement, flow, or vertical settlement of saturated, unconsolidated soil in response to strong ground motion. Primary factors in determining liquefaction potential are soil type, the level and duration of seismic ground motions, and the depth to groundwater. Sandy, loose, or unconsolidated soils are most susceptible to liquefaction hazards. Geotechnical reporting would be incorporated into the project, as described above. Compliance with the California seismic design requirements, as noted above, would ensure that the project would not expose persons or property to hazardous conditions associated with seismic-related ground failure. The Program EIR would further discuss the potential for this issue in the project area, as relevant.

a.iv) Geographically, the Central Valley is generally flat, and potential for landslides in most areas is therefore low. However, topographic features located in some portions of the Central Valley, including the foothills along Central Valley margins, topographic features associated with rivers and other waterways, and manmade features including levees and other berms and fill areas, may be subject to mass movements including landslide. Program level measures, including compliance with requirements for geotechnical assessment and

compliance with applicable building codes and local building permit requirements, will be applied. The Program EIR would further discuss the potential for this issue in the project area, as relevant.

b) Site preparation and earthwork would consist of stripping the area of vegetation, as well as site grading, as required. Grading and earthwork would be limited to facility footprint areas, including pipelines and other appurtenant facilities. In general, installation of AD facilities would not typically require excessive grading or earthwork.

Although large scale grading activities are not anticipated, stripping of vegetation and other grading could facilitate the entrainment of soils in water or wind, leading to the transport of surface soils and sediments off site. To minimize the loss of topsoils due to soil erosion and other factors, Best Management Practices (BMPs) would be required under CVWB permitting requirements. These BMPs would implement measures that would reduce or prevent the loss of topsoil from the AD facility site.

In addition, a drainage report would be prepared by a California Registered Civil Engineer, for each individual AD site. The report would identify measures to manage stormwater drainage flows and otherwise prevent topsoil from becoming entrained in stormwater or flood flows. These requirements and additional measures will be addressed in the Program EIR, as relevant. For additional discussion of water quality impacts associated with erosion, please see the Hydrology and Water Quality section of this initial study.

c-d) The project could result in the construction of AD facilities in locations where unstable geologic units or unstable soils may be present, including expansive soils. General measures may be applied in the Program EIR in order to underscore local, state, and federal requirements for the construction of facilities on potentially unstable geologic units or soils, or on expansive soils. These measures include, but are not limited to, compliance with relevant building codes and geologic investigations, as discussed previously.

e) The process wastewater produced by the AD facilities would not be discharged into a septic tank or sewer system. However, for larger/centralized AD facilities located in remote areas, as relevant, septic systems may be required for the treatment of sanitary wastewater flows generated by on-site employees. The ability of soils to support a septic system is highly variable, and requires assessment of conditions at specific installation sites. The Program EIR will implement measures to ensure compliance with relevant state and local codes regarding the engineering and installation of septic systems for sanitary wastewater treatment.

Hazards and Hazardous Materials

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
7. HAZARDS AND HAZARDOUS MATERIALS Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☒	☐	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☒	☐	☐	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☒	☐	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☒	☐
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☒	☐	☐	☐
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☒	☐	☐	☐

Discussion

a) During construction, hazardous materials may be transported, used, and disposed. All hazardous material transport and use should be performed consistent with standard best management practices that may be identified in the Program EIR and in accordance with state and Federal law.

Operation of dairy digester facilities would require the routine handling of gases that can be hazardous. Methane, in particular, can be hazardous due to its flammability and properties as an asphyxiate capable of reducing oxygen to dangerously low levels in the body. The United States Department of Transportation, Office of Pipeline Safety, regulates the safety of gas transmission pipelines. All gas pipeline projects delivering gas through a distribution system must be designed and constructed to meet or exceed the Federal safety standards established in 49 Code of Federal Regulations Part 192. These regulations include specific

standards for material selections and qualification, protection from corrosion, and worker training, safety, and qualifications. Adhering to these guidelines and requirements will ensure that no significant hazards will be created to the public or the environment through the routine transport of compressed gas. This issue will be addressed in the Program EIR.

b) As indicated above, all material transport and use would be consistent with standard industry best management practices. Additional construction-related potential for upset of hazards includes the disturbance of a known or unknown contaminated site, contaminated agricultural soils, or underground storage tank. This issue will be addressed in the Program EIR. Mitigation to be incorporated into the project shall be further defined in the Program EIR, and will include preparation of a stormwater pollution prevention plan and hazardous material management and spill response plan.

c) The potential conflicts with locating a dairy digester facility within 1/4 –mile of an existing or proposed school will be addressed in the Program EIR and appropriate provisions to be incorporated into general WDRs and/or a waiver will be analyzed.

d) A search of readily available government databases shall be conducted at the project level to determine if proposed dairy digester facilities would be located on a hazardous materials site at the project level. This issue will be addressed in the Program EIR and appropriate provisions for submission of relevant information under general WDRs and/or waiver will be considered.

e, f) If a dairy digester were near an airport or private airstrip, airport or airstrip activity would be unlikely to pose an adverse safety hazard for workers at AD facilities. Any potential safety hazards from airport or airstrip operations would be easy to recognize and avoid during the facility siting process. This issue will not be further discussed in the Program EIR.

g) The potential of dairy digester facilities to interfere with emergency response plans would be discussed in the Program EIR. Concurrence with local emergency response plans should be reviewed prior to implementation of project construction. This issue will be addressed in the Program EIR.

h) The production and concentration of gases increases the risk of fire. This risk would be further evaluated in the Program EIR. Several factors, including the proximity of wildlands to the project site, would be analyzed to determine the significance of this impact at the project level. This issue will be addressed in the Program EIR.

Hydrology and Water Quality

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
8. HYDROLOGY AND WATER QUALITY— Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☒	☐	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river, or by other means, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☒	☐	☐
d) Substantially alter the existing drainage pattern of a site or area through the alteration of the course of a stream or river or, by other means, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☒	☐	☐
e) 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?	☒	☐	☐	☐
f) Otherwise substantially degrade water quality?	☒	☐	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☒	☐	☐	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☒	☐	☐	☐
j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

Discussion

a) Specific water quality constituents can be reduced (but not eliminated) by the AD process including pathogens and constituents causing odor. Additionally, nutrient concentrations can be reduced via diversion to a solid product stream, for re-use, under some AD setups.

However, substantial potential water quality effects may still occur, especially from the addition of a variety of co-digestion substrates. Of significant concern is salt loading associated with the AD process. Salts that occur in the AD feedstock, including dairy wastes

as well as other potential supplementary feedstocks, could be concentrated in the effluent water. These salts would be discharged to land and could result in degradation of groundwater quality. Salt is already a significant problem in much of the project area, including most Central Valley areas south of the Delta. Additional salt loading that may occur as a result of operation of the AD facilities could result in a potentially significant impact to water quality.

Water from the AD process would be land-applied in support of agriculture, and would in most cases contain high levels of nutrients. If improperly managed, the land application of process water could result in the discharge of water containing nutrients, salts, pathogens, and other water quality constituents to nearby waterways, or to groundwater. Downstream surface water quality, and groundwater quality, could thereby be adversely affected. Co-digestion of dairy wastes with other feedstocks may also introduce other water quality constituents of concern to the discharged wastewater, including increased salt loads, and pre-processing of wastes may require the use of hazardous chemicals, or other procedures that could result in the release of water pollutants to the environment. These issues may be significant, and will be explored in greater detail in the Program EIR.

Most AD facilities would produce solid waste streams, as well as the liquid waste discussed above. These solid waste streams would be composed of solid digestate leftover from the AD process. Solid digestate could in most cases be put to beneficial use, however, depending on that use and the composition of the solid digestate, water quality constituents could be leached from the digestate and become entrained in natural waters. This situation could potentially result in water quality degradation.

If improperly managed, feedstock handling procedures at the digester site could result in the release of untreated dairy wastes (including associated pathogens and other water quality constituents) to receiving waters during rain events. These potential releases would in general be considered mitigable, based on the application of specific measures including sealing of the AD process system, and drainage and seepage control measures.

Various other potential water quality issues could also arise as a result of implementing the project. These include: (1) construction-related release of fuels, sediments, grease, and other construction related water quality pollutants; (2) during operations, treatment chemicals or other hazardous materials may be spilled on site and could migrate into surface or groundwater if improperly managed; and (3) impervious surfaces that would be installed, especially for larger centralized plants, (parking lots, sidewalks, plant facilities, etc) could result in the collection of water quality pollutants (brake dust, oil and fuels from automobiles, dirt, trash) and subsequent discharge of those pollutants to surface waters during storm events. These potential water quality impacts are generally considered mitigable, but will require further analysis within the Program EIR.

b) Under specific circumstances, installation of dairy facilities may result in the withdrawal of groundwater, resulting in increased drawdown within the underlying aquifer. It is not

expected that this would result in a significant net increase in groundwater depletion because any new water would offset groundwater that would otherwise be pumped for the crops.

Groundwater depletion can also occur as a result of construction of extensive impervious surfaces, which prevent the infiltration of groundwater to the underlying aquifer. The proposed AD facilities would include the construction of some impervious surfaces, associated with roads and other facilities. However, these impervious surfaces would not be extensive, and are not anticipated to substantially interfere with groundwater recharge. Groundwater supply will not be further evaluated in the Program EIR.

c,d) Earthwork would consist of cutting and/or filling to produce gradients specific to each individual AD project. If improperly managed, grading activities could result in the entrainment of sediment in stormwater flows, resulting in erosion or siltation on-site or off-site. Improperly managed grading could also result in changes in the amount of stormwater discharged from a facility area, resulting in flooding on-site or downstream. During operations, improperly designed or sized stormwater conveyance systems could result in further erosion, sedimentation, and flooding. These potential impacts are common among most construction projects where grading would occur, and would be generally considered mitigable based on the application of Best Management Practices (BMPs) to control erosion, sedimentation, and stormwater management, and in compliance with state and local permitting requirements for stormwater discharges.

In general, AD projects are anticipated to be sited to avoid interference with stream channels and other existing drainages. However, siting of specific facilities at the project level may result in interference with existing streams or drainages. The Program EIR will investigate measures that can be applied to reduce interference with existing streams and other drainages. These issues will be explored in greater detail in the Program EIR.

e) As discussed previously, installation of AD facilities may result in new impervious surfaces, which can cause increases in stormwater runoff. It is expected that stormwater runoff from individual AD facilities would be channeled into retention basins (lagoons) for flood mitigation, and/or for water quality treatment. The Program EIR will review these potential issues, as well as relevant and applicable mitigation to reduce the intensity of potential impacts related to stormwater flows.

f) Potential water quality issues are discussed under impact a), above. Note also that at the project level, completion or update of Nutrient Management Plans would be required prior to application of effluent waters to croplands. The discharger would have to comply with the Standard Provisions and Reporting Requirements for Waste Discharge Requirements General Order No. R5-2007-0035 for Existing Milk Cow Dairies dated May 3, 2007 or individual Waste Discharge Requirements. These requirements, and associated water quality, would be further discussed in the Program EIR.

g) The proposed project would not include any housing and therefore would not place any housing in a 100-year flood hazard area. This issue will not be further evaluated in the Program EIR.

h) Substantial portions of the project area are located in a 100-year floodplain hazard area. Installation of specific AD facilities may therefore occur within 100-year floodplain hazard areas. The installation of these facilities could, in the event of a flood event, result in the alteration or displacement of flood flows. Mitigation measures for facilities located within a 100-year floodplain hazard area will be further discussed in the Program EIR.

i) Levees and dams are relatively common in the project area, and it is likely that some individual AD facilities would be sited in areas where the collapse of a dam or levee would result in a flooding hazard. These issues will be further discussed in the Program EIR.

j) The potential for tsunami in the Central Valley is low. The potential for seiche and mudflow throughout most of the Central Valley is low. These issues will not be further discussed in the Program EIR.

Land Use and Land Use Planning

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
9. LAND USE AND LAND USE PLANNING— Would the project:				
a) Physically divide an established community?	☐	☐	☒	☐
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☒	☐	☐	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☒	☐

Discussion

a) Dairy digester facilities do not present a significant threat of physically dividing an established community. Sites for the facilities would be fully contained within dairies or on specified parcels of land. If required, pipelines would be underground and would not divide communities except temporarily during construction periods. This impact would be less than significant and this issue will not be further evaluated in the Program EIR.

b) At the project level, dairy digester facilities would be designed to be consistent with applicable land use plans, policies, and regulations. In general, the facilities would be located on sites zoned for agriculture. Under this scenario, dairy manure management is an integral part of the agricultural use of the land and would not result in a significant land use conflicts. Central facilities may be located on either agricultural or industrially zoned lands. At the program level, this impact is generally considered less than significant, however to comprehensively evaluate various land use and planning circumstances throughout the project area jurisdictions, this issue will be evaluated in the Program EIR.

c) Major adopted plans in the CVWB's jurisdictional area include the San Joaquin Multi-species Habitat Conservation and Open Space Plan, Natomas Basin HCP, Kern Water Bank Authority HCP/NCCP and East Contra Costa County HCP. The continuation and expansion of agricultural facilities is provided for in most HCPs. Centralized facilities may trigger the need for compliance measures, including site-specific surveys and payment of fees under adopted plans but would not create any substantial conflict. This impact will be less than significant and this issue will not be further evaluated in the Program EIR.

Mineral Resources

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
10. MINERAL RESOURCES—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?	☐	☐	☒	☐
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?	☐	☐	☒	☐

Discussion

a, b) Dairy digester facilities would not be of significant size to prohibit recovery of known mineral resources of value to the region or state. Due to the availability of agricultural land and extent of dairy operations which avoid designated mineral resource areas, the project would not be expected to result in the loss of specific recovery sites. Less than significant impacts are anticipated in this regard and this issue will not be discussed in the Program EIR.

Noise

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
11. NOISE—Would the project:				
a) Result in exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐
b) Result in exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☐	☐	☒	☐
f) For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

Discussion

a) Construction and operation of dairy digesters would have the potential to expose noise-sensitive receptors in the vicinity of these AD facilities to noise levels in excess of the applicable standards. Noise levels associated with construction activities would generally be higher than the ambient noise levels. Noise may be generated by the transport of materials and construction personnel to the facility sites and/or construction activities at the site. This impact is potentially significant. The Program EIR will set forth best management practices, including limits on the hours of construction operations that would reduce the potential significance of this impact.

The project would result in the 24 hour/day operation of AD facilities. Additional noise sources and levels would depend on several factors, such as proximity to noise-sensitive receptors, type of facility (i.e., AD facilities on individual dairies versus centralized locations), and the increased truck traffic on the local roadway network (including haul trucks for co-digester facilities and for potential manure, digestate or biogas transport to centralized facilities). Further discussion of potential impacts on noise-sensitive receptors and mitigations to reduce impacts will be analyzed in the Program EIR.

b) Site preparation and construction may result in ground borne vibration associated with earth movement and similar activities. Although these temporary activities may cause perceptible

ground borne vibration, such impacts are anticipated to be minimal and limited to the project site. Operation of the project would not involve any activity that would produce any substantial groundborne noise or vibration. This issue will not be further evaluated in the Program EIR.

c) As discussed under issue "a" above, permanent increases in ambient noise levels from dairy digester operations will be analyzed in the Program EIR.

d) As discussed under issue "a" above, temporary increases in ambient noise levels from dairy digester construction will be analyzed in the Program EIR.

e, f) Even if a dairy digester were near an airport or private airstrip, the noise from the aircraft activities would be unlikely to expose people at the AD facility to excessive noise levels. Dairy digester facilities would not be considered sensitive receptors with regard to noise generated by off-site activities. Any potential impact from aircraft noise would be easy to recognize and avoid during the facility siting process. This issue will not be further discussed in the Program EIR.

Population and Housing

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
12. POPULATION AND HOUSING— Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐

Discussion

a) Dairy digester operation would create a small number of jobs throughout the Central Valley region; however, this increase would not be considered substantial. The project does not involve the construction of features (i.e. roads, residences) that would induce population growth. Biogas generated by the AD facilities would provide for an existing need for renewable energy and is not proposed to be used for new off-site developments. Therefore, less than significant impacts would occur and this issue will not be further evaluated in the Program EIR.

b) Dairy digester facilities would not displace residences, as they would be located on, or in the vicinity of dairies. No significant impacts to existing housing would occur and this issue will not be further evaluated in the Program EIR.

c) Dairy digester facilities would be located on dairies, or in the immediate vicinity of dairies, and would not displace people. No significant impact would occur and this issue will not be further evaluated in the Program EIR.

Public Services

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
13. PUBLIC SERVICES— Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
i) Fire protection?	☒	☐	☐	☐
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☒	☐	☐	☐

Discussion

a.i) The dairy digester and support facilities would be designed to meet the standards of the 2007 California Fire Code. All gas pipeline projects delivering gas through a distribution system must be designed and constructed to meet or exceed the Federal safety standards established in 49 Code of Federal Regulations Part 192. Installation of any pipelines in accordance with these standards would reduce the potential for fire. However, because the dairy digesters would result in the accumulation of methane and other gases that are flammable, this issue will be analyzed in the Program EIR.

a.ii) Installation of dairy digester facilities would not change the amount of police protection required at dairies. No impact would occur and this issue will not be further evaluated in the Program EIR.

a.iii) Dairy digester facilities would not include any new housing and would not generate any new students. Therefore, the proposed project would have no effect on schools and this issue will not be further evaluated in the Program EIR.

a.iv) Dairy digester facilities would not include any new housing and would not generate any new users of public parks. Therefore, the proposed project would have no effect on parks and this issue will not be further evaluated in the Program EIR.

a.v) The Program EIR will evaluate options for new dairy digester facilities to connect to or add to the existing natural gas infrastructure network.

Recreation

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
14. RECREATION— Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

a, b) Dairy digester facilities would not induce population growth and thus would not increase use or demand for recreational facilities. The project description does not include recreational facilities. Considering these factors the project would have no impact on recreation. This issue will not be addressed in the Program EIR.

Transportation and Traffic

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
15. TRANSPORTATION AND TRAFFIC— Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☒	☐	☐	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☒	☐	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

Discussion

a, b) Dairy digester construction would generally result in the temporary addition of construction-related vehicle trips, including employee commuter trips and the delivery of construction materials and equipment. The existing circulation system in the Central Valley is generally not overburdened and capable of handling additional traffic volumes. As such, construction traffic generated by AD facilities would generally be considered negligible, and would not conflict with applicable plans, ordinances, policies, or programs.

AD facilities could add potential truck trips to haul organic materials to co-digester facilities and/or manure to dairies or central facility locations. In addition, AD facilities could result in increased employee traffic. The increase in traffic associated with AD facilities could conflict with applicable plans, ordinances, policies, or programs, and result in a potentially significant impact to existing roadways. Detail on the expected two-way vehicle trips generated for each of the proposed AD facility types will be analyzed in the Program EIR.

c) Air traffic patterns generally would not be affected by the installation of AD facilities. No impact would occur. This will not be further analyzed in the Program EIR.

d) Installation of AD facilities would not alter, or substantially change the type of equipment utilizing, existing roadways. Where employed pipelines would likely occur within road rights of way. Construction in the Caltrans right of way would require an encroachment permit. No increase in hazards due to a design feature or incompatible use would occur. This will not be further analyzed in the Program EIR.

e) Due to the relatively small footprint of AD facilities in comparison to the size of the dairies, it is not anticipated that development of AD facilities would affect emergency vehicle access. This issue will not be analyzed in the Program EIR.

f) AD facilities would not affect or alter existing alternative transportation facilities, nor interfere with the construction of any future alternative transportation facilities. This will not be further analyzed in the Program EIR.

Utilities and Service Systems

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
16. UTILITIES AND SERVICE SYSTEMS— Would the project:				
a) Conflict with wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☒	☐	☐	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐
c) Require or result in the construction of new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐
d) Require new or expanded water supply resources or entitlements?	☒	☐	☐	☐
e) Result in a determination by the wastewater treatment provider that would serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☒	☐	☐	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion

a) The project would result in modification of the existing wastewater discharge systems at dairies or centralized facilities. Effluent from the digestion process would require storage and disposal through land application. As discussed above for Hydrology and Water Quality, this impact will be discussed in the Program EIR. The dairies would be required to control the amount of nutrients applied to land.

b, d) The construction of dairy digesters could create the need for new or expanded water and wastewater facilities at dairies and at centralized facilities. The majority of dairies utilize private water and wastewater systems which may need to be expanded. The Program EIR will address any additional water/wastewater demands created by the project.

c) Dairy digester facilities would create a demand for new or expanded stormwater drainage facilities. Runoff would be channeled to on-site ponds which may need to be resized to accommodate increased impervious surfaces from the project. The Program EIR will address the additional stormwater facilities created by the project and provide applicable best management practices.

e) The dairy digester facilities could create liquid waste streams which could require treatment by public wastewater treatment systems. The Program EIR will address whether public wastewater providers would be utilized and to what extent.

f) The dairy digesters and central facilities would not be expected to generate substantial amounts of solid waste that would be disposed of at landfills. This will not be further evaluated in the Program EIR.

g) The project would comply with federal, state, and local statutes and regulations related to solid waste. No impact would occur; this issue will not be discussed in the Program EIR.

Mandatory Findings of Significance

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
17. MANDATORY FINDINGS OF SIGNIFICANCE— Would the project:				
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Have impacts that would be individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☒	☐	☐	☐
c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

Discussion

a) AD facilities would be constructed on dairies or on other centrally located parcels. There is a potential for the project, without mitigation, to adversely affect biological and cultural resources, including fish and wildlife species, natural habitat, and significant cultural resources. These issues will be addressed in the Program EIR.

b) There is a potential for the project to result in effects on the environment that would be cumulatively considerable, such as air quality impacts. Cumulative impacts will be addressed by issue area in the Program EIR.

c) As discussed above in the Hazards and Hazardous Materials section, there is a potential for hazardous impacts that could affect humans. Air pollutant emissions from AD facilities could also have a substantial adverse effect on humans. These issues will be addressed in the Program EIR.

References

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