APPENDIX M

Animal Confinement Ordinance
FEIR Summary Table

TABLE 2-1: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Level of Significance before Mitigation		Mitigation Measure	Level of Significance After Mitigation	
	LS	PS		LS	SU
Aesthetics					
Impact AES-1: Adverse Visual Change: The construction and operation of new or expanded dairies or other confined animal facilities could result in changes to the visual environment.	LS		None required.	LS	
Impact AES-2: Light and Glare: Operation of new or expanded dairies or other confined animal facilities could result in the generation of substantial light and glare.		PS	***Mitigation Measure AES-2:*** Merced County shall continue to implement §18.41.06 of the County Zoning Code.	LS	
Agricultural Resources					
Impact AG-1: Conversion of Valuable Agricultural Resources: Construction and operation of new or expanded dairies or other confined animal facilities could result in the conversion of valuable agricultural soils and resources.	LS		None required.	LS	
Air Quality					
Impact AQ-1: Fugitive Dust Emissions from Construction Activities: Construction activities associated with the development of dairies and other confined animal facilities could result in short-term dust emissions, including PM_{10}.		PS	***Mitigation Measure AQ-1:*** Implement SJVUAPCD Rules 8020 and 8021, and the following proposed revisions to the Merced County Animal Confinement Ordinance - §7.13.040 U, HH, and OO.		SU
Impact AQ-2: Exhaust Emissions (ROG, NO_x, CO and PM_{10}) Related to Construction Activities: Construction activities associated with the development of dairies and other confined animal facilities would result in short-term exhaust emissions from construction equipment.		PS	***Mitigation Measure AQ-2:*** Mitigation measures will be required if exhaust emissions from construction activities result in the emission of more than 10 tons/year of ROG or NO_x or 15 tons/year of PM_{10}. For most dairy facilities, this impact would be less than significant. For facilities which exceed the assumptions in this Program EIR, mitigation measures should comply with best management practices and at a minimum include the following: • Limit idling time of all construction equipment to less than 10 minutes; Minimize the hours of operation of heavy equipment and/or number of equipment used at one time; • All equipment shall be properly tuned and maintained in accordance with the manufacturer's specifications;	LS	

LS=Less than significant PS=Potentially Significant SU=Significant and unavoidable

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			• Where feasible, equipment utilizing alternative fuels or electric equipment shall be used: • Use the minimum practical engine size for construction equipment; • Where feasible, gasoline powered equipment shall be equipped with catalytic converters; • Curtail construction during periods of high ambient pollutant concentrations which may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways; • Implement activity management to reduce short-term impacts.		
Impact AQ-3: Carbon Monoxide Emissions (CO) from Operational Equipment and Increased Traffic: Operation of equipment used in dairy or other confined animal facility processing and farming could result in the emission of carbon dioxide	LS		None required.	LS	
Impact AQ-4: Ozone Precursor Emissions (Reactive Organic Gases and Nitrogen Oxides) from Dairy Operations, Farm Equipment, and Increased Traffic: Emissions of ROG and NO_x from operations, farm equipment, and increased traffic at new or expanded dairies or other confined animal facilities could exceed SJVUAPCD emissions criteria.		PS	***Mitigation Measure AQ-4:*** Implement the following proposed revisions to the Merced County Animal Confinement Ordinance - §7.13.040 U and OO. Implementation of measure OO could reduce potential ozone precursor emissions for confined animal facilities by up to 34 percent.		SU
Impact AQ-5: PM_{10} Emissions from Fugitive Dust During Project Operations: Dairies and other animal confinement operations result in fugitive dust (PM_{10} and $PM_{2.5}$) emissions from animal movement in unpaved corrals, vehicle use along unpaved driveways and access roads, and equipment operation.		PS	***Mitigation Measure AQ-5:*** Implement the following proposed revisions to the Merced County Animal Confinement Ordinance - §7.13.040 U, HH, and OO. Implementation of measure OO could reduce potential PM_{10} emissions for confined animal facilities by up to 50 percent.		SU
Impact AQ-6: Ammonia and Hydrogen Sulfide Emissions from Project Operations: Manure from animals at new or expanded dairies or other confined animal facilities would be a source of ammonia and hydrogen sulfide emissions.		PS	***Mitigation Measure AQ-6: Mitigation Measure AQ-5:*** Implement the following proposed revisions to the Merced County Animal Confinement Ordinance - §7.13.040 U, II, and OO.		SU

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Impact AQ-7: Greenhouse Gas Emissions from Project Operations: Animal digestion, manure, and cultivation activities at new or expanded dairies or other confined animal facilities would be a source of greenhouse gas emissions.		PS	***Mitigation Measure AQ-7: Mitigation Measure AQ-5:*** Implement the following proposed revisions to the Merced County Animal Confinement Ordinance - §7.13.040 U and OO.		SU
Impact AQ-8: Adverse Odor from Project Operations: New or expanded dairies and other confined animal facilities can emit odors that may be bothersome to isolated rural residents and other sensitive receptors.		PS	***Mitigation Measure AQ-8:*** Implement proposed revisions to the Merced County Animal Confinement Ordinance §7.13.045 C.8.a, Subdivision Ordinance §17.12.070, and Zoning Code §18.02.02, §18.02.03, and §18.184.050.		SU
Biological Resources					
Impact BIO-1: Loss and/or degradation of riparian habitat: Construction and operation of new dairies or other confined animal facilities could result in the loss or degradation of riparian habitat.		PS	***Mitigation Measure BIO-1:*** The following measures shall be implemented by Merced County and the sponsors of confined animal facility projects. The County shall implement these measures during the environmental review process, and shall additionally establish these measures, as appropriate, as conditions of approval for any confined animal facility where riparian habitats are identified. A. To protect riparian areas from erosion and sedimentation problems during construction, protective silt fencing shall be erected 100 feet from any water's edge. A 250-foot buffer zone shall be established for vernal pools, seasonal wetlands, and confined drainages that provide suitable for federally listed aquatic brachiopods (vernal pool fairy shrimp, longhorn fairy shrimp, Conservancy fairy shrimp, and vernal pool tadpole shrimp). No construction activity or equipment storage shall occur within this buffer. B. For work planned within the streambed, a Streambed Alteration Agreement must be obtained, in accordance with CDFG Code Section 1600. For work planned within any jurisdictional waterway, a Nationwide Permit for Fill must be obtained from the Corps, in accordance with Section 404 of the CWA. C. The County shall require that all temporary disturbances to riparian habitat, wetlands, and other waterways will be restored to pre-disturbance conditions upon completion of construction activities. Any permanent loss of these habitats shall be replaced at minimum 1:1 ratio or as required by COE or CDFG.		SU

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			Replacement can include restoration of degraded habitat, permanent preservation of extant habitat, acquisition of habitat mitigation credits at a facility approved by the Corps and CDFG, and creation of new habitat. A mitigation plan approved by the Corps or CDFG for regulated waters and wetlands will satisfy this mitigation requirement provided the ratio is a minimum of 1:1		
Impact BIO-2: Loss of special-status species: Construction activities and land conversions at confined animal facilities could result in substantial adverse effects and habitat modification (take) to special-status plant and animal species.		PS	*Mitigation Measure BIO-1: See Above* *Mitigation Measure BIO-2:* Because of the programmatic nature of this EIR for the ordinance revision, specificity concerning the type and magnitude of impacts on a number of special-status species is problematic. Subsequent project-specific environmental documents will provide site-specific detailed information concerning special-status species. However, the performance standard for all subsequent reports will be no take of special-status species without compensatory mitigation. The determination of take and appropriate mitigation will be analyzed on a case-by-case basin in project-specific environmental documents. Because the USFWS, NMFS, and CDFG are responsible for the determination of "take" under the state and federal endangered species acts for proposed and listed species, as referenced in the Significance Thresholds, the County will require each subsequent action to obtain necessary approval and authorization from these agencies prior to project approval. For non-listed special-status species, the County will determine take based on current County regulations and policies and state and federal laws. In order to identify potential special-status species and/or habitat, the Merced County Planning and Community Development Department shall require a preliminary biological assessment for each conditional use permit application subject to the revised animal confinement ordinance. The preliminary biological assessment shall include the following: • Principal vegetation cover types affected by the project; • A list of special-status species that have been recorded in the project area based on CNDDB queries, consultation with resource agencies and species experts, and review of pertinent literature (distribution and range maps, previous environmental documents, scientific journals, etc.);	LS	

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			• A preliminary analysis of the probability of occurrence of special-status species on the project site based on cover type, essential habitat elements at the project site, historical and current species range, past records of occurrence, and agency consultations; and, • Recommendations for protocol-level surveys if warranted by the preliminary analysis. The County shall submit the results of the preliminary biological assessment to USFWS, CDFG, and NMFS, as appropriate, for review and concurrence with preliminary findings and recommendations. If resource agencies concur that protocol-level surveys are necessary, the surveys will be conducted by qualified biologists. The survey biologist will obtain any permits/authorization necessary to conduct the species-specific surveys. General principals of the surveys are discussed below, but will be modified based on resource agency discussions: *Plant Surveys* Should habitat exist for any special-status plant, a species-specific survey shall be conducted to determine if there are any occurrences within project boundaries in accordance with the *Guidelines of Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS, 1996). Surveys must be conducted during the blooming period, when the plant is most identifiable. Should individuals exist, construction of new or expanded dairies must be designed to avoid harm to these plants. Protective exclusion fencing shall be erected around the listed plant(s) and a worker education program shall be implemented to ensure avoidance. It is possible that impact may be minimized by construction during the dry season. *Animal Surveys* Once it is determined which special-status animal species may be present, it should be determined which impacts can be avoided by timing. For migratory species, it may be possible to conduct work outside of the use period. For example, removal of trees containing nesting raptors may be allowed prior to or after the nesting season and construction may be allowed near active raptor nests if an appropriate buffer of no construction activity is maintained around the nest location. Also, (artificial) stock ponds may be filled outside of California tiger salamander breeding season.		

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			Before construction, a Worker Awareness Program (environmental education) must be conducted to inform project workers of their responsibilities regarding sensitive biological resources. Below are examples of species-specific mitigation measures that should be expected if a preliminary assessment of the project site identifies potential impacts to sensitive resources. As mentioned earlier, all surveys necessary for special-status species will require early consultation with CDFG and/or USFWS, depending on the listing status of the species. Although the following mitigation measures may be used as a guideline, site-specific requirements will likely vary. **Vernal Pool Crustaceans.** During the general assessment of the project site, it should be noted whether vernal pool features exist. Any land that contains vernal pools should be treated as if currently supporting federally and state listed species. Property containing vernal pools requires full surveys to determine presence/absence of the species. Full survey consists of sampling for either two full wet season surveys done within a five-year period or two consecutive seasons of one full wet season survey and one dry season survey. Each vernal pool/swale in a vernal pool/swale complex shall be surveyed. However, in the case of a large vernal pool/swale complex, the USFWS may authorize a representative portion or portions of the vernal pool/swale complex to be surveyed. This sampling should not be conducted until the permittee receives prior permission from the USFWS. The owner should consult the wet and/or dry season brachiopod sampling protocol by USFWS for further details. **Valley Elderberry Longhorn Beetle.** Preliminary assessment surveys for this species should be focused on identification of the elderberry shrub, the insect's plant host. If none are located on the project site, no further surveys are required. If elderberry shrubs are present, a 100-foot protective buffer from the dripline of the plant shall be established with exclusion fencing to protect them from construction impacts in accordance with the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS, 1997). In certain instances, with the approval of USFWS, a 20-foot protective buffer can be used. If avoidance is not feasible, a qualified biologist must conduct a stem inspection of the shrubs to identify any exit holes left by valley elderberry longhorn beetle. This survey must be conducted and possible further mitigation		

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			prescribed, in accordance with the Programmatic Biological Opinion for the species, issued by USFWS Sacramento Field Office in 1996. **Fish.** If appropriate measures are implemented as described under Mitigation Measure BIO-1, the impact to Kern brook lamprey and hardhead will be minimized to a level of less than significant with mitigation. **Amphibians.** If preliminary surveys indicate appropriate habitat for California red-legged frog or California tiger salamander on the project site, contact must be initiated with USFWS and their protocol survey guidelines must be followed to determine presence/absence of the species. If preliminary surveys indicate appropriate habitat for foothill yellow-legged frog or western spadefoot toad, CDFG must be consulted for further survey guidelines to establish presence/absence of the species. Equipment must be used and stored no closer than 100 feet from the water's edge to prevent erosion and siltation of the riparian area and to prevent direct take of this species, if present. **Reptiles.** If western pond turtles potentially inhabit a project site, erosion control measures will mitigate any adverse impacts to this riparian species. Temporary silt fencing must be erected along waterways potentially harboring western pond turtles to prevent siltation. Equipment must be used and stored no closer than 100 feet from the water's edge to prevent erosion and siltation of the riparian area and to prevent direct take of this species, if present. For giant garter snake, blunt-nosed leopard lizard, California horned lizard, silvery legless lizard, and San Joaquin whipsnake, all of which hibernate during the winter months in upland burrows previously used by small mammals, secondary attempts to establish presence/absence will need to consider the species' active periods. If possible, construction should occur within the species' active period, usually mid-spring through late fall, to facilitate detection and escape of individuals from the construction area. During construction, a biological monitor must be on site to ensure that no individuals are present and to provide for their safe escape should any be identified. If work must occur during the inactive season, burrow surveys will be required. These surveys must occur within 60 days prior to		

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			commencement of construction activities within the habitat of the listed reptile. During these surveys, burrows likely to be inhabited by the listed reptiles must be flagged for avoidance. **Birds.** To avoid take of listed birds such as tricolored blackbird, Swainson's hawk, mountain plover, northern harrier, prairie falcon, and California horned lark and those protected under the federal Migratory Bird Treaty Act, and if appropriate nesting habitat exists within the project area, construction activities should be restricted to before or after the nesting season (generally March through July, but varying for each species). Alternatively, if activities take place during the nesting season, a qualified biologist will conduct a pre-construction survey for nesting birds no more than two weeks prior to construction. If a protected species is observed nesting, the biologist will make a determination whether or not construction will impact the nests. If it is determined that construction will impact nests, construction within 500 feet of the nesting locations will be delayed until juvenile birds have fledged. If it is seen prior to construction that a nesting pair of birds are just beginning to nest, it may be possible through consultation with CDFG, to develop ways to discourage the birds from nesting there for that season. Similar to those for reptiles and small mammals, surveys for burrowing owls should focus on identification of burrows. Pre-construction surveys for the owls shall occur in accordance with the *Burrowing Owl Survey Protocol and Mitigation Guidelines* (The California Burrowing Owl Consortium, 1993). If possible, buffer areas around the occupied burrows should be established, inside of which no disturbance shall occur. The size of the buffer area required would vary depending on whether construction occurs during non-breeding or breeding season. If avoidance requirements cannot be met, passive relocation of owls, using one-way doors may be implemented, but only during the non-breeding season. For each vacated burrow that would be excavated by project construction, one alternative unoccupied natural or artificial burrow shall be provided outside of the buffer area. **Mammals.** If potential habitat for San Joaquin kit fox is identified within the project area, surveys will be required in accordance with the *San Joaquin Kit Fox Survey Protocol for the Northern Range* (USFWS, 1999). To detect presence/absence of the species, USFWS requires surveys be		

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			conducted between May 1 and November 1. Depending on the suitability of the habitat, surveys may involve any combination of natal den surveys, spotlighting, and camera and scent station surveys, for a prescribed number of days. Protection measures for the giant kangaroo rat, San Joaquin antelope squirrel, San Joaquin pocket mouse, and Merced kangaroo rat, should appropriate habitat be present at the project site, will involve pre-construction surveys. Within 60 days prior to the commencement of construction activities, a qualified biologist shall survey all construction areas within the habitat of the species. During these surveys, burrows likely to be inhabited by the species shall be flagged for avoidance. Potential burrows shall be avoided to the maximum extent possible during construction. For active burrows, a 75-foot buffer shall be established and actions within the buffer areas will be limited to vehicle and equipment operation on existing roads and restricted to daylight hours. If burrows potentially inhabited by the above species cannot be avoided during construction, the option for passive relocation of owls and later burrow excavation may be considered. Mitigation banks have been effectively utilized to reduce the adverse impacts of certain projects to biological resources. Although the most common type of banks preserve or create wetlands, the need has been identified for banks that involve other natural community types such as grasslands and oak woodlands. As discussed in Impact BIO-3, incremental loss of grassland and oak woodland habitat may become cumulatively significant. Landowners with multiple dairies may be required to coordinate with the Planning Department, CDFS, and USFWS to assess cumulative wildlife habitat losses when participating in mitigation banking.		
Impact BIO-3: Loss of wildlife habitat: Construction and operation of new dairies or other confined animal facilities could result in the loss or degradation of wildlife habitat.		PS	***Mitigation Measure BIO-1: See Above*** ***Mitigation Measure BIO-2: See Above***	LS	
Impact BIO-4: Loss and/or modification to wetlands: Conversion of previously naturalized areas for agricultural purposes has the potential to destroy wetlands, including vernal pools.		PS	***Mitigation Measure BIO-1: See Above*** ***Mitigation Measure BIO-2: See Above*** ***Mitigation Measure BIO-4:*** A. If seasonally wet areas exist on the property, a qualified wetland scientist shall conduct a wetland delineation.	LS	

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			B. Locate developed project areas where they will not affect vernal pools or other wetlands. Undeveloped areas and/or undeveloped buffer areas should be of sufficient width to protect any watershed containing vernal pools or wetlands. C. For confined animal facilities or waste discharge areas located within the watershed of a wetland, seasonal wetland, vernal pool, or confined drainage, the operator shall construct physical barriers, such as a berm, to route water that has come into contact with animal waste or wastewater away from the wetland. If this is not possible or feasible, surface water quality monitoring shall be required for confined animal facilities constructed near vernal pools or other wetlands. D. Various methods of wetland mitigation banking have been utilized and may be discussed with the regulatory agency if wetlands are identified on site. Mitigation banks have been developed in California, in which wetlands are on occasion allowed to be destroyed in return for the purchase of wetland credits at an approved mitigation bank. Credits represent units of wetlands that will be preserved for perpetuity. Ratios of wetlands destroyed to units required for purchase vary depending on the geographic region and quality of wetlands affected. Agreements also have been arranged where the purchaser buys creation units in return for destroyed wetlands. The ratio for creation of wetlands is typically higher than that for preservation of wetlands because of the uncertainty that newly created wetlands will be functional. Below are possible mitigation measures that may be agreed upon by the agency. • For every acre of vernal pool habitat directly or indirectly affected, at least two vernal pool credits will be dedicated with an USFWS-approved ecosystem preservation bank; • For every acre of vernal pool habitat directly or indirectly affected at least one vernal pool creation credit will be dedicated within an USFWS-approved habitat mitigation bank; • For each acre of seasonal swale directly affected, one acre of seasonal swale credit will be purchased from an USFWS-approved habitat mitigation bank;		

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			• All on-site personnel (landowners) will receive instruction regarding the presence of listed species and the importance of avoiding impacts to these species and their habitat outside the project site. Landowners with multiple confined animal facilities may be required to coordinate with Merced County and the resource agencies on addressing their cumulative wetland habitat losses through participation in mitigation banking.		
Impact BIO-5: Interference with the activities of night-active wildlife: Operation of new or expanded confined animal operations could result in increased artificial lighting at the facilities that can disrupt the foraging activities of night-active species.		PS	***Mitigation Measure BIO-5:*** Project-related lighting shall be minimized and directed away or shielded from sensitive areas. Minimizing and/or directing/shielding lighting away from sensitive areas will ensure that disruption of night-active species will not occur. This will help reduce or minimize any accelerated night-time predation rates on the dairy and adjacent agricultural fields. Around residences and other areas where it may be appropriate, landscaping shall be used to shield the agricultural fields from additional lighting. This measure will be implemented through conditions of approval for individual land use permits. Monitoring will be by the Planning and Community Development Department.	LS	
Impact BIO-6: Potential interference with animal movement/migration patterns: Construction and operation of new or expanded confined animal facilities could block or constrict daily and seasonal wildlife movement corridors, thereby affecting wildlife on and near the site.		PS	***Mitigation Measure BIO-1: See Above*** ***Mitigation Measure BIO-2: See Above*** ***Mitigation Measure BIO-6:*** The County shall consult the *Recovery Plan for Upland Species of the San Joaquin Valley, California* (USFWS, 1998) to determine if the siting of new animal confinement facilities block or constrict San Joaquin kit fox movement corridors, which would directly or indirectly affect the recovery efforts. If potential impacts to kit fox movement patterns would result from construction of an animal confinement facility, the County will coordinate with USFWS to determine appropriate set-back distances and other protective measures to facilitate kit fox travel and dispersion.	LS	

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Impact BIO-7: Potential selenium and heavy metals effects to biological resources: Construction and operation of new dairies or other confined animal facilities that use supplemented feeds could result in introduction of heavy metals into the environment by the application of dairy waste to agricultural fields and retention in ponds. If concentrations of metals in terrestrial or aquatic media are significantly higher than naturally occurring background levels, adverse effects terrestrial or aquatic biota may occur.		PS	***Mitigation Measure BIO-7:*** Implement §7.13.040 T, KK. LL, MM, and §7.13.045 D, E, F, and G of the revised Animal Confinement Ordinance.	LS	
Cultural Resources					
Impact CUL-1 - Disruption of known and unknown cultural resources: Construction and operation of new or expanded confined animal facilities could result in the possible future disturbance of known and unknown prehistoric and/or historic resources.		PS	***Mitigation Measure CUL-1:*** A. Within 90 days of certification of the EIR and approval of Revisions to the Confined Animal Ordinance, Merced County shall consult with the Native American Heritage Commission to establish a list of Native American contacts for Merced County. The County shall amend its environmental procedures to require consultation with listed Native Americans regarding the identification and locations of known and unknown cultural resources, and traditional cultural properties during the environmental review process for projects subject to County approval. B. Should known or unknown cultural resources be identified through this consultation process or by standard County assessment methods (discussed above), the County shall require assessment of such resources. Under this requirement, a project applicant shall retain a qualified archaeologist (i.e., qualified under the Secretary of the Interior's Standards and Guidelines for archaeologists) to perform an assessment of the resource. Depending on the nature of any such find, evaluation may include determination of site boundaries and assessment of site integrity and significance. Standards for site evaluation shall adhere to appropriate State and Federal requirements (including California Public Resources Code §21083). Evaluation shall include, if necessary, site mapping and/or limited subsurface testing using standard archaeological methods in accordance with CEQA Guidelines, §15064.5.	LS	

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			C. If, after evaluation, a resource is judged to be of significance pursuant to CEQA Guidelines criteria, the project sponsor shall prepare a mitigation plan in accordance with appropriate guidelines and consultation with listed Native Americans, and submitted to the Merced County Planning & Community Development Department for acceptance. Mitigation could include avoidance, site capping, data recovery, or a combination of these or other measures, as determined by the qualified archaeologist. The County shall require implementation of the accepted mitigation plan as a condition of approval. D. Concurrently with implementation of Measure A above, Merced County shall develop a dispute resolution procedure to resolve disagreements between the County and listed Native Americans regarding proper mitigation of identified cultural resources. E. If archaeological resources are encountered at any site of a confined animal facility during construction, work in the vicinity of the find shall be suspended or diverted until the County complies with Measures B and C above.		
Geology					
Impact GEO-1: Construction Stormwater Quality: Construction activities at new or expanding confined animal facilities could result in degradation of water quality in receiving water by reducing the quality of storm water runoff.		PS	***Mitigation Measure GEO-1:*** Merced County shall continue to implement NPDES requirements and standard Merced County conditions.	LS	
Impact GEO-2: Embankment Failure: Raised retention pond and settling basin embankments may present the potential for erosion and slope failure that could result in the release of process water.		PS	***Mitigation Measure GEO-2:*** A. Implement §7.13.050 I and K of the revised Animal Confinement Ordinance. B. Prior to construction of above-grade embankments for manure settling basins and process water retention ponds, the owner/operator shall submit a geotechnical report prepared by a licensed Geotechnical Engineer or registered Civil Engineer that presents specifications for the construction of embankments using on-site surface or imported soils. The geotechnical report shall be submitted to the Merced County Division of Environmental Health and shall include the following requirement:	LS	

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			• Specific compaction testing requirements that ensure suitable compressive strength for embankments. The compaction requirements shall specifically address possible effects associated with hydrocompressibility of the emplaced soils. C. The operator(s) shall be responsible for conducting an annual inspection of the interior and exterior slopes surrounding the manure settling basins and process retention ponds following the rainy season of each year during the first three years of operation. The inspections shall document the occurrence of any significant erosion (e.g., formation of rills or gullies longer than ten feet and/or deeper than one foot) or any significant slope failures (e.g., soil slips greater than 100 square feet in area). A report of the inspections shall be submitted to the Division of Environmental Health and shall include recommendations and schedule for completing any necessary corrective action. Implementation of any necessary corrective actions shall be completed by the end of November of that year. If after the first three years of operation of each confined animal facility no erosion problems have been observed, the inspection schedule may be reduced if found appropriate by the Division of Environmental Health. D. The owner/operator shall design basins and ponds such that they impound less than 50 acre-feet with embankments lower than 25 feet high. If the retention ponds are designed in this way, the owner/operator shall also comply with Mitigation Measure GEO-2B. Or The owner/operator shall submit designs and specifications to the California Department of Water Resources, Division of Safety of Dams (DSD) to allow determination as to whether the embankments and ponds meet the criteria for jurisdiction by that agency for dam and reservoir construction and operation. The owner/operator shall submit documentation of the determination of DSD jurisdiction over construction and operation to the Division of Environmental Health.		
Impact GEO-3: Seismic Damage: New or expanded confined animal facilities could be exposed to potential damage during expected seismic shaking.		PS	*Mitigation Measure GEO-3:* Merced County shall continue to implement Uniform Building Code requirements and standard Merced County conditions.	LS	

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Hazards, Hazardous Materials & Human Health					
Impact HAZ-1: Mosquitos: Dairy or other confined animal facility wastewater management systems could provide mosquito-breeding habitat.		PS	*Mitigation Measure HAZ-1:* Implement §7.13.040 H and 7.13.050 B, C, J, K, and R of the Animal Confinement Ordinance, and continue to implement the cited standard Merced County Mosquito Abatement District requirements.	LS	
Impact HAZ-2: Flies: Confined animal facilities can be a source of flies that can adversely affect animal and human health, and become a nuisance for other adjacent land uses.		PS	*Mitigation Measure HAZ-2:* A. Implement §7.13.045 C.8.c of the Animal Confinement Ordinance. B. The need for the following measures will be determined on a site-specific basis by DEH. In all cases, these measures will be required if an existing dairy is located within one-half mile of the boundary of any Specific Urban Development Plan, Rural Residential Center, Highway Interchange Center, and Agricultural Service Center; isolated sensitive rural uses, such as schools, hospitals, jails, public and private recreational areas, parks, or wildlife refuges; isolated residentially designated or zoned areas; and concentrations of 10 or more rural residences in agricultural zones developed at urban densities. These measures will also be mandatory for all existing dairies within 1,000 feet of an offsite rural residence. 1. All confined animal facilities shall implement the following Best Management Practices to address potential fly problems: • 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; • 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; • Regular blading of feeding lanes in freestall barns and corrals to ensure that spilled feed is promptly removed and disposed; • Regular removal of manure and spilled feed from stalls in freestall barns is required to prevent nuisance vector	LS	

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			and odor problems. Because of the life cycle of flies, manure and spilled feed removal shall be accomplished no less frequently than 3 times per week from April through October. Removal may be less frequent during other periods of the year because of low fly activity levels.; • Regular scraping of corrals to minimize the potential for development of fly populations on manure; • Weekly inspection of silage storage areas to ensure proper covering, drainage, and removal of any spoiled silage; • Weekly inspection of fence lines of corrals and other "edge" areas and removal of any accumulated manure; • 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; • All exterior doors and windows in milk rooms 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 are repaired or replaced immediately; • If necessary, flytraps are 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 confined animal facilities to control fly populations: • Dead animals are stored in a secured area at the dairy facility and off-site rendering plant operators are immediately notified for pickup of carcasses; • Residual feed is removed from infrequently used feeding areas; • All garbage is disposed of in closed dumpsters that are regularly emptied by a contracted waste management service for off-site disposal;		

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			• Grass and other landscape clippings are removed from the site for off-site disposal or reuse (as feed or soil amendment). C. 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 a confined animal 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 on a site-specific basis include: 1. Biological Pest Control Parasitoids are arthropods that parasitize their hosts. Natural populations of beneficial fly parasitoids (including *Muscidifurax*, *Naonia*, and *Spalangia*) are supported and encouraged through protection of nests and avoidance of the use of insecticides that are lethal to them. The most effective of these insects selectively kill larvae within fly pupae then oviposit eggs within the pupae. When the egg hatches, the parasitoid eats the dead larvae. These insects are very selective regarding their hosts and, therefore, do not harm humans or dairy cattle. If a sufficient population of parasitoids does not develop		

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			naturally, the population is augmented by purchasing additional parasitoids from licensed suppliers. 2. Chemical Pest Control Cultural and biological methods described above for controlling flies at confined animal facilities may be augmented with prudent use of insecticides registered for use at California dairies and other confined animal facilities by the California Department of Pesticide Regulation. These chemicals are used only in compliance with Federal and State laws and regulations regarding pesticide storage, application, and disposal. Chemicals classified as restricted materials shall be applied only under permits issued by the Merced County Agricultural Commissioner. Restricted pesticides shall be applied only by a State licensed Pesticide Applicator. Insecticides shall be prepared and applied in conformance with practices recommended by the University of California Cooperative Extension and the manufacturer. The following chemical pest control measures may be implemented, as necessary, at dairy and other confined animal facilities: • If fly infestation occurs within freestall barns or other buildings, the initial chemical control measure should be application of a space spray that is compatible with (nonlethal to) beneficial parasitoids (e.g., synergized pyrethrins or combination of dichlorvos and synergized pyrethrins). Within milk rooms, only pyrethrum and odorless pyrethrins shall be applied and only under conditions in which the milk and utensils are adequately protected from spray drift; • If space sprays cannot control fly infestation, surface sprays (e.g., dichlorvos, dimethoate, stirofos, or permthrin) may be applied in areas of fly concentration within and around the freestall barns. Surface sprays may be applied to ceiling		

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			areas, including beams and overhead pipes, interior and exterior walls, and exterior surfaces of feed storage bins. These sprays shall not be used in the milk room; • Methomyl scatter bait stations may be prepared and placed away from high traffic areas (e.g., walk lanes and feed lanes) where high fly populations are observed; • If other methods do not control high face fly or horn fly populations in freestalls or corrals, insecticide ear tags may be placed on cattle. To avoid the development of insecticide resistance within fly populations, the following measures shall be implemented: – alternating use of pyrethroid and organophosphate ear tags; – coordinating insecticide use with neighboring dairies and confined animal facilities to reduce the potential for insecticide resistance to the extent possible. • Self-dusting devices or walk-through traps may be installed, as necessary, in corral areas with persistent high horn fly populations. D. If fly nuisance conditions are confirmed, and are attributable to operations at a confined animal 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.		
Impact HAZ-3: Manure Pathogens: Operation of new or expanded dairy and other confined animal facilities could expose people to manure pathogens, potentially causing adverse human health impacts.		PS	*Mitigation Measure HAZ-3:* Implement §7.13.040 E, K, O, T, and MM, §7.13.045F, and 7.13.050 D, F, and H of the revised Animal Confinement Ordinance, and continue to implement §9.28.060 C of the Well Ordinance.	LS	

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Impact HAZ-4: Residual Manure at Closed Facilities: Residual manure remaining at dairy or confined animal facilities following cessation of manure management facilities operation could expose people to elevated methane and nitrate levels, potentially causing adverse human health impacts.		PS	***Mitigation Measure HAZ-4:*** Implement §7.13.040 R of the revised Animal Confinement Ordinance, and continue implementation of §9.28.060 C of the Well Ordinance.	LS	
Hydrology and Water Quality					
Impact WQ-1: Development in the Zone of High Sensitivity to Groundwater Contamination: Operation of new or expanded animal confinement facilities could result in degradation of groundwater resources.		PS	***Mitigation WQ-1:*** A. Implement §7.13.040 A, D, E, F, H, J, K, M, N, O, P, Q, R, T, V, Z, AA, BB, DD, EE, JJ, KK, LL, and NN; §7.13.045 A, B, C.8.d, D, E, and F; and §7.13.050 A, D, E, G, H, I, K, L, S, and T of the proposed revisions to the Animal Confinement Ordinance. B. The following Best Management Practices shall be implemented by all dairies and confined animal facilities 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, §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.		SU

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			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). C. For all new or expanding confined animal facilities, the Division of Environmental Health shall make a final inspection of the facility prior to the commencement of operations to confirm that the dairy meets all local and state requirements.		
Impact WQ-2: Depletion of Water Resources: Operation of new or expanded dairies or other confined animal facilities could result in depletion of water resources.	LS		None required.	LS	
Impact WQ-3: Modification of Surface Water Drainage Patterns: New or expanded confined animal facilities implemented under the Animal Confinement Ordinance could modify surface water drainage patterns, potentially causing localized off-site migration of runoff, erosion, and/or flooding.		PS	***Mitigation Measure WQ-3:*** Implement §7.13.040 E, G, I, §7.13.045 C8d, and O; §7.13.050 M.	LS	
Impact WQ-4: Increase in Runoff: Construction and operation of new or expanded dairy or other animal confinement facilities would result in an increase in impervious in surfaces, potentially increasing runoff volumes and velocities.		PS	***Mitigation Measure WQ-4:*** Implement §7.13.040 D, E, and L of the Animal Confinement Ordinance.	LS	
Impact WQ-5: Exposure to Flood Risks: Dairies or other confined animal facilities located in flood-prone areas could be damaged or rendered temporarily inoperable during a flood event. In addition, floodwaters could inundate dairy facilities (manured areas and/or process water storage facilities) and fields where wet or dry manure had been recently applied, causing impacts to surface water quality.		PS	***Mitigation Measure WQ-5:*** A. Implement § 7.13.040 D, E, G, H, L, S, and BB, §7.13.045 A and C4m, and 7.13.050 A and Q of the revised Animal Confinement Ordinance, and continue to implement §9.28.060 D of the Well Ordinance. B. Implementation of the following measure, in addition to operation of the Merced County Animal Confinement Ordinance and Flood Hazard Ordinance, would further reduce the risk of contamination of surface waters during flood events:	LS	

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			• Spreading of manure or process water in flood plains during flooding, threat of flooding, or saturated soil conditions is prohibited.		
Impact WQ-6: Water Supply Well Pathways for Pollutant Migration: Existing water supply wells adjacent to new or expanding confined animal facilities may represent preferred pathways for pollutant migration to groundwater.		PS	***Mitigation Measure WQ-6:*** All existing water supply wells at a proposed new or modified animal confinement facility site (including those located away from the confined animal facilities in the cropland areas) shall be inspected by the Merced County Division of Environmental Health to ensure that each well is properly sealed at the surface to prevent infiltration of waterborne contaminants into the well casing or surrounding gravel pack. If any of the wells are found not to comply with the Merced County Well Ordinance standards described in impact HAZ-3, the applicant or confined animal facility operator shall retain a qualified professional as described in the County Well Ordinance to install the required seal or functional equivalent. Documentation of the inspections and seal installations, if any, shall be provided to the County Environmental Health Division prior to commencement of dairy operations.	LS	
Land Use					
Impact LU-1: Conversion of Cultivated Land to Confined Animal Facilities: Construction and operation of additional required improvements to dairies and other confined animal facilities could result in the reduction of usable cropland.	LS		None required.	LS	
Impact LU-2: Land Use Conflicts with Urban & Sensitive Land Uses: Improper siting of confined animal facilities could result in potential land use conflicts between agriculture and urban uses, and sensitive public land uses, such as hospitals, schools, and jails.		PS	***Mitigation Measure LU-2:*** Implement proposed revisions to Zoning Code §18.02.02.	LS	
Impact LU-3: Land Use Conflicts with Rural Residences: New and expanded animal confinement facilities could cause adverse effects to adjacent individual rural residences in the agricultural areas.		PS	***Mitigation Measure LU-3:*** Implement proposed revisions to Merced County Subdivision Ordinance §17.12.070 and Zoning Code §18.02.02, §18.02.03 and 18.184.050.		SU

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Mineral Resources					
Impact MIN-1: Loss of Mineral Resources: Development of new or expanded confined animal facilities could result in the loss of availability of mineral resources.		PS	***Mitigation Measure MIN-1:*** Merced County shall continue to enforce General Plan standards and environmental review procedures related to mineral resources.	LS	
Noise					
Impact NSE-1: Creation of Excessive Noise Levels: Construction and operation of new or expanded confined animal facilities could result in adverse levels of noise at adjacent sensitive land uses, including residences.		PS	***Mitigation Measure NSE-1:*** Implement the proposed changes to Zoning Code Chapter 18.02.02, Figure 2B and 2C, and Confined Animal Ordinance Section 7.13.050 F.	LS	
Population and Housing					
Impact POP-1: Population / Housing Growth: Construction and operation of new or expanded confined animal facilities would not lead to large-scale population growth, or in the excessive demand for additional housing units.	LS		None required.	LS	
Public Services					
Impact PS-1: Need for Increased Public Services: Construction and operation of new or expanded confined animal facilities would not lead to large-scale population growth, thereby requiring new or increased levels of public services.	LS		None required.	LS	
Recreation					
Impact REC-1: Recreation Resources: Construction and operation of new or expanded confined animal facilities would not lead to large-scale population growth, thereby leading to overcrowding of existing recreation facilities or the need for new facilities.	LS		None required.	LS	
Transportation and Circulation					
Impact TRF-1: Traffic and Roadway Effects: Construction and operation of new or expanded confined animal facilities could result in the addition of traffic on area roadways, and the addition of high-weight vehicles to rural roads.		PS	***Mitigation Measure TRF-1:*** Implement proposed revisions to Animal Confinement Ordinance §7.13.040 W.	LS	
Utilities and Service Systems					

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Impact PF-1: Public Facilities: Construction and operation of new or expanded confined animal facilities would not lead to large-scale population growth or increased service demands from the facilities themselves, thereby leading to the need for new public facilities.	LS		None required.	LS	
Impact PF-2: Interference with Irrigation District Facilities: Construction and operation of new or expanded confined animal facilities could conflict with Irrigation District facilities, or introduce wastewater into Irrigation District distribution networks.		PS	***Mitigation Measure PF-2:*** Implement proposed revisions to Animal Confinement Ordinance §7.13.040 V and EE and §7.13.050 M.	LS	
Cumulative Impacts					
Air Quality		PS	A. Implement mitigation measures AQ-1, AQ-2, AQ-4, AQ-5, AQ-6, AQ-7, and AQ-8. B. The federal EPA, California Air Resources Board, and/or San Joaquin Valley Unified Air Pollution Control District should sponsor and complete detailed emissions studies of air emissions from all areas of confined animal facilities, including emissions rates from various sources, activities, and facilities. Concurrently, these agencies should evaluate and document the effectiveness of various emissions control options for managing or lessening air pollutant emissions from confined animal facilities. C. Upon completion of the emissions studies set forth above, and should it be determined that controls on emissions from confined animal facilities are necessary to reach attainment status, the SJVUAPCD should incorporate the resulting emissions inventory into its attainment planning for criteria pollutants for which the Air Basin is in nonattainment (currently ozone and PM_{10}).		SU
Biological Resources		PS	A. Implement mitigation measures BIO-1, BIO-2, BIO-4, BIO-5, BIO-6, and BIO-7. B. The California Department of Fish and Game should adopt a policy of "no net loss" for all riparian lands.		SU

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	LS	PS		LS	SU
Cultural Resources		PS	Implement mitigation measure CUL-1	LS	
Geological Resources		PS	Implement mitigation measures GEO-1, GEO-2, and GEO-3	LS	
Hydrology & Water Quality		PS	A. Implement §7.13.040 A, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, V, Z, AA, BB, DD, EE, JJ, KK, LL and NN; §7.13.045 A, B, C.4.d, C.8.m, D, E, and F; and§7.13.050 A, D, E, G, H, I, K, L, M, Q, S, and T of the proposed revisions to the Animal Confinement Ordinance. B. The following Best Management Practices shall be implemented by all dairies and confined animal facilities 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, §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		SU

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			shall be taught the correct use of manure collection machines (wheel loaders or elevating scrapers). C. For all new or expanding confined animal facilities, the Division of Environmental Health shall make a final inspection of the facility prior to the commencement of operations to confirm the dairy meets all local and state requirements. D. All existing water supply wells at a proposed new or modified animal confinement facility site (including those located away from the confined animal facilities in the cropland areas) shall be inspected by the Merced County Division of Environmental Health to ensure that each well is properly sealed at the surface to prevent infiltration of waterborne contaminants into the well casing or surrounding gravel pack. If any of the wells are found not to comply with the Merced County Well Ordinance standards described in impact HAZ-3, the applicant or confined animal facility operator shall retain a qualified professional as described in the County Well Ordinance to install the required seal or functional equivalent. Documentation of the inspections and seal installations, if any, shall be provided to the County Environmental Health Division prior to commencement of dairy operations. E. The Regional Water Quality Control Board should evaluate the potential emissions to groundwater of salts, nutrients, and other substances from all areas of confined animal facilities, including corrals, treatment ponds, and cropped application fields. F. Based on the results of this study, the Regional Water Quality Control Board should adopt uniform standards that apply to all confined animal facilities within the Central Valley for permitted seepage rates from all areas, including corrals, treatment ponds, and application fields; maximum permeability rates for areas that require lining to prevent groundwater degradation; and implementation of a nondegradation policy for groundwater.		
Land Use		PS	Implement mitigation measures LU-2 and LU-3.		SU
Mineral Resources		PS	Implement mitigation measure MIN-1.	LS	

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Noise		PS	Implement mitigation measure NSE-1.	LS	
Transportation		PS	A. Implement proposed revision to the Animal Confinement Ordinance §7.13.040 W. B. Prior to permitting a confined animal facility, each proponent should perform a road impact evaluation. This evaluation should evaluate expected truck traffic, truck routes, average truck weights, and the structural integrity of all likely access routes to the proposed confined animal facility. Should any roadway within the study area be identified that does not have the structural integrity to bear expected loads, the County should require a "fair-share" contribution from the proponents of the confined animal facility to improve such roads.		SU
Utilities & Service Systems		PS	Implement mitigation measure PF-2.	LS	