6. ALTERNATIVES

SECTION 6
ALTERNATIVES

The 1998 amendments to the CEQA Guidelines indicate that:

> *An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which could feasiblely attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to the project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation* (Section 15126.6(a)).

As required under the California Environmental Quality Act (CEQA), this section of the EIR discusses alternatives to the project. Several alternatives were preliminarily considered during scoping for the PEIR, including off-site, reduced herd, increased manure treatment, reduced individual dairy size, and no project alternatives. Evaluation of the feasibility of these alternatives and their potential to meet the major objectives of the **Proposed Project** resulted in the selection of four alternatives to be assessed in detail: **No Project**, two **Reduced County Herd Size**, and **Increased Manure Treatment** alternatives.

Eleven significant and unavoidable air quality impacts were identified for the proposed project, including cumulative impacts. In general, the amount of air emissions and volume of manure and process water generated at dairy facilities are proportional to the number of animals managed at the facilities. A reduction in the number of dairy cows and support stock would result in a corresponding reduction in manure and associated air emissions. Therefore, a **Reduced County Herd Size** alternative is an effective option for reducing significant impacts identified by the environmental analysis of the Element.

Two **Reduced County Herd Size** alternatives are discussed to demonstrate the proportional effect of herd reduction on impact severity. The alternatives would result in a reduction in the overall number of dairy cows and support stock within the County (the maximum theoretical herd) by 10 percent (Alternative 2) and 50 percent (Alternative 3). The selection of two reduced herd alternatives is based on the goal of evaluating a suitable range of alternatives that would reduce or eliminate significant impacts related to air emissions that were identified for the **Proposed Project**. The rate of air emissions generated by a dairy is generally proportional to the number of dairy cattle (i.e., overall herd size).

The fourth alternative, the **Increased Manure Treatment** alternative, was also developed as an approach to reducing air emissions. Under this alternative, all new and expanding dairies (including dairies expanding to a herd size of less than 735 milk cows) would be required to implement advanced manure treatment.

ALTERNATIVES CONSIDERED AND REJECTED DURING SCOPING OF PROJECT

ALTERNATIVE LOCATION

This EIR considered a location alternative to the project, but rejected it because alternative locations of Dairy Development Overlay Zones (DDOZs)within or outside Kings County would not eliminate identified significant impacts of the project or reduce them to less-than-significant levels, as discussed below. The CEQA Guidelines describe the process by which an alternative location should be chosen for an alternatives analysis. Section 15126.6(f)(2)(A) and (B) state that:

> *The key question and first step in analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR... If the lead agency concludes that no feasible locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR.*

The Kings County Revised Draft Dairy Element (Element) proposes to identify the most appropriate locations for dairy development within the County and establish controls that reduce the potential for adverse environmental effects associated with dairy construction and operation. The Element restricts dairy development in areas where dairy operation could present significant adverse effects on adjacent incompatible land uses (e.g., locations closer to urban uses, residential areas, and schools) or on the environment (e.g., locations within flood zones, in steep terrain, or within biologically sensitive areas). Locating dairies in locations outside the DDOZs designated in the Element would result in increased conflicts with incompatible land uses and increased environmental impacts. In effect, the Element has screened the appropriate alternative locations for dairy development within the County.

The County cannot exercise control on the siting of dairy development outside the County boundaries. Therefore, there are no appropriate and feasible alternatives for the location of dairy development under the Element evaluated in this EIR. In addition, none of the primary objectives of the project would be met by considering out-of-County

implementation of the Element. Conceptually, "relocating" the Element is infeasible and would be contrary to the purpose of the proposed project.

LIMIT ON INDIVIDUAL DAIRY HERD SIZES

The alternatives analysis for this PEIR considered the merits of including an alternative that set an upper limit on the allowable herd size at individual dairy sites. Under existing zoning, there is no limit on the size of dairy herds at individual dairy sites. In effect, the herd size is currently controlled by the provision that dairy operations conform with RWQCB permitting requirements. Those requirements are based on the capacity of available cropland within the dairy site to receive and assimilate manure and process water generated at the dairy facility (a function of the number of dairy cattle) as fertilizer and irrigation without resulting in the release of excess nutrients to the environment. Therefore, the herd size is limited by the amount of land controlled by a dairy applicant and crop management (i.e., types of crops and cropping patterns). The County does not and cannot control the amount of land owned or leased by a single entity nor can it control the crop management decisions made by landowners at individual farms.

Relative to the proposed project, a restriction on the size of individual dairies would not reduce environmental impacts associated with dairy construction and operation identified in this PEIR. It is recognized that a smaller dairy herd would generate less manure and process water and would result in decreased impacts related to management of those materials. The environmental impact analysis presented in this PEIR analyzes the effects of the maximum theoretical herd without assuming that a broad range of dairy sizes could be proposed for new and expanded dairies. However, under current conditions and those assumed for the Element, a dairy operator can optimize herd size by balancing nutrient generation and crop production within an individual dairy site on the basis of available land. Under the Element, an applicant for a new or expanded dairy would be required to control air emissions by implementing all feasible control measures. Assuming dairy herd size would be optimized under available land restrictions, the maximum theoretical herd would not be affected by setting a limit on the allowable herds at individual sites. A limit on herd sizes for individual dairies would likely only result in an increase in the number of dairies.

ALTERNATIVE 1: NO PROJECT ALTERNATIVE

The CEQA Guidelines have clarified that, under a "No Project" alternative, an EIR must examine both the existing conditions, as well as a "buildout" scenario (i.e., what would occur if the site were developed as allowed under applicable County plans). The amended CEQA Guidelines Section 15126.6(e)(2) states:

*The **No Project** analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental review is begun as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.*

Therefore, the analysis of the **No Project** alternative in this EIR describes existing dairy development in Kings County as well as expected continued dairy development under the current permitting processes.

Under the **No Project** alternative, the Element would not be adopted and, therefore, would not be implemented. The existing permitting process for new and expanded dairies would not be changed. Currently, Article 4 of the Kings County Zoning Ordinance allows dairy development as a conditional use within AG-20 and AG-40 districts. These districts encompass approximately 85 percent of the land within the County. Under the proposed Element, 70 percent of the County could have dairies and/or manure spreading areas. The districts include areas in which dairy development would be prohibited under the proposed Element, including the upland areas of the southwestern portion of the County and areas within 100-year flood hazard zones.

The Ordinance currently requires that individual dairy projects obtain a Conditional Use Permit (CUP) prior to construction and operation of new dairies and dairy expansions. Section 1903 of the Zoning Ordinance details the conditional use permit application process requirements and identifies specific findings that must be made by the Planning Commission in consideration of permit approval. These requirements are discussed in more detail in the comparison of land use impacts of the alternatives, below.

In 1999, there were 149 dairies in Kings County. The total dairy cow population in the County is 124,668 milk cows; the average herd size is 837 milking cows. Future development of new and expanded dairies within the County is expected as the trend of relocation of southern California dairies to the Central Valley continues. Since 1988, an average of four new dairies has been approved by the County on an annual basis. During that period, the yearly average increase in the number of dairy cows has been 4,573 milking cows per year. Although this rate could increase the County's dairy herd due to relocation of southern California dairies, the rate would be controlled to a degree by the capacity of the KCPA to process permit applications, including review of the applications under CEQA. The rate of dairy development is controlled primarily by market demand. The demand is affected by many complex factors, including milk pricing, consumer population, and competition. Due to the variability of these factors over time, speculation regarding changes in the market demand for dairy products is considered outside the scope of this EIR. However, as described in Section 5, the environmental analysis presented in this PEIR

assumes that the average annual growth rate of the dairy herd in Kings County will be maintained at approximately five percent, the average rate of growth during 1988 through 1999.

Existing conditions and historic agricultural uses throughout the AG-20 and AG-40 districts of Kings County (including the DDOZs designated in the Element) indicate that most of these lands would remain in row and field crop production. The crops currently grown in the County would not typically support development of permanent, large agricultural processing facilities. An exception could be the future development of dairy product processing facilities (e.g., cheese factories). Development of large agricultural processing facilities would require a CUP from the County. However, operation of portable equipment used for processing and packaging certain crops would be expected to continue.

Regardless of the future growth rate of the dairy industry (and thus the dairy cattle population), this alternatives analysis assumes that the ultimate dairy herd size in Kings County would be controlled by the existing RWQCB guidelines on manure nutrient loading rates for the protection of water resources. Under this assumption, the potential dairy herd size developed under the **No Project** alternative would be similar to the theoretical herd considered under the Element. The analysis also assumes that the average annual dairy herd growth rate under all alternatives would be five percent.

ALTERNATIVE 2: TEN PERCENT REDUCED COUNTY HERD SIZE

Although reducing the size of the herd by 10 or 50 percent under Alternatives 2 or 3 would reduce emissions, individual dairy projects under each alternative would continue to exceed identified thresholds of significance for particulate matter (PM_{10}) and reactive organic gases (ROG).

Under the **Ten Percent Reduced County Herd** alternative, the maximum theoretical bovine herd within the County would be reduced from 870,181 to 783,163 animal units (AU). Considering that the existing (1999) County herd consists of an estimated 329,383 AU (milk cows and support stock), the County herd could be expanded by 453,780 AU (Table 6-1). Implementation of the Element would control dairy siting, design, and operation and would remain essentially the same as for the **Proposed Project**, except that the overall County herd size would be reduced by ten percent. Furthermore, the acreage devoted to the dairy facilities may be reduced somewhat, and the excess acreage would be added to the area of crop lands available.

Table 6-1. Dairy Herd Development under Existing Conditions, the Proposed Project and Project Alternatives

	1999		Proposed Project		No Project		10% Reduced Herd		50% Reduced Herd		Increased Manure Management	
Herd Distribution	**Head**	**AU**	**Head**	**AU**	**Head**	**AU**	**Head**	**AU**	**Head**	**AU**	**Head**	**AU**
Milk cows	124,668	*174,535*	381,980	*534,772*	381,980	*534,772*	343,782	*481,295*	190,990	*267,386*	381,980	*534,772*
Dry cows and bred heifers	18,700	*20,944*	57,297	*64,173*	57,297	*64,173*	51,567	*57,755*	28,649	*32,086*	57,297	*64,173*
Heifers (2 years and older)	39,894	*40,771*	122,234	*124,923*	122,234	*124,923*	110,010	*112,430*	61,117	*62,461*	122,234	*124,923*
Heifers (1 to 2 years)	19,947	*20,386*	61,117	*62,461*	61,117	*62,461*	55,005	*56,215*	30,558	*31,231*	61,117	*62,461*
Calves (3 months to 1 year)	49,867	*69,814*	152,792	*74,868*	152,792	*74,868*	137,513	*67,381*	76,396	*37,434*	152,792	*74,868*
Baby calves (<3 months)	9,973	*2,932*	30,558	*8,984*	30,558	*8,984*	27,503	*8,086*	15,279	*4,492*	30,558	*8,984*
Total	**263,049**	***329,383***	**805,978**	***870,181***	**805,978**	***870,181***	**725,380**	***783,163***	**402,989**	***435,090***	**805,978**	***870,181***
Available Expansion	n/a	n/a	542,928	540,798	542,928	540,798	462,331	453,780	462,331	105,708	542,928	540,798

The amount of manure, associated nutrients, and acreage needed for production of crops to take up nutrients would be reduced by ten percent. The area of land no longer needed for manure and process water reuse would be available for other uses allowed by the Zoning Ordinance. Milk production and truck trips would be reduced proportionally. It is assumed that the number of dairy employees, and the associated number of daily vehicle trips generated, would also be reduced by ten percent.

Assumptions regarding the operational characteristics of the dairies under Alternative 2 would remain the same as for the **Proposed Project**. Flushing of the freestall barns and scraping of corrals would generate manure and process water. The process water generated by the dairies would be reused as irrigation for the growing of silage and other crops within the DDOZs and NSOZs designated in the Element. The dry manure that is generated by the dairies developed under Alternative 2 would also be applied as fertilizer within these zones. The amount of process water and manure generated at dairies under this alternative would be generally proportional to the herd size. Therefore, the size (volume) of the process water storage ponds would be reduced by ten percent under Alternative 2. The design and operation of the ponds would be subject to the requirements of the Element.

ALTERNATIVE 3: FIFTY PERCENT REDUCED COUNTY HERD SIZE

Under the **Fifty Percent Reduced County Herd Size** alternative, the size of the maximum theoretical bovine herd in Kings County would be reduced by one-half (50 percent) relative to the proposed project. The County herd would be reduced from 870,181 to 435,090 AU. The potential expansion of the County herd above existing (1999) conditions would be 105,708 AU (Table 6-1). As with the **Proposed Project** and Alternative 2, the location, design, and operation of dairy facilities under Alternative 3 would be controlled by the provisions of the Element. The acreage required for future dairy development would be reduced to serve only one-half as large a herd, and land required for process water application as irrigation water and fertilizer to silage crops would be also be reduced by approximately 50 percent. The volume of traffic generated by dairy development would be reduced proportionally.

ALTERNATIVE 4: INCREASED MANURE TREATMENT

Under the **Proposed Project**, **Policy DE 5.1c** requires that new and expanded dairies implement advanced manure treatment to control emissions of air pollutants. However, **Policy DE 5.1c** includes an exemption from the requirement for advanced manure

treatment for existing dairy expansions that would not require construction of new dairy facilities and would not expand the existing herd to a level (approximately ~~735~~ 705 milk cows and associated support stock) that would result in ROG emissions above SJVUAPCD threshold limits for stationary sources. Under the **Increased Manure Treatment** alternative, all expanding dairies would be required to implement advanced manure treatment for manure generated by the herd expansion. In effect, all existing dairies expanding to a herd size of ~~735~~ 705 milk cows or greater would be required to implement either controlled anaerobic, aerobic, or combined anaerobic/aerobic treatment systems to reduce air emissions related to manure decomposition. The maximum theoretical County bovine herd would be equivalent to that proposed by the Element (870,181 AU). The DDOZs and NSOZs proposed by the Element would not change.

COMPARATIVE ANALYSIS OF ALTERNATIVES

This section compares the potential impacts of the **No Project**, the two **Reduced County Herd Size**, and the **Increased Manure Treatment** alternatives with the **Proposed Project**. The comparative analysis of the alternatives follows the same sequence of topical issues addressed in Section 4 of this PEIR.

GEOLOGY, SOILS, AND SEISMICITY

No change to the existing permit approval process would occur under the **No Project** alternative. Current standards for the geotechnical aspects of construction of new and expanded dairies would apply to new dairy development. Minimum current standards do not require the completion of site-specific geotechnical reports for dairy development. However, at its discretion, the Planning Agency can require above- and below-grade construction of manure separation pits and process water ponds. Therefore, the potential for erosion or failure of the slopes surrounding the pits and ponds could occur if unstable slopes were created. The potential for slope failure and erosion could be increased relative to the **Proposed Project**. Less-than-significant impacts related to seismic damage or injuries associated with dairy development would be similar under the **No Project** alternative as building code requirements would be enforced.

The potential impacts related to geotechnical conditions under either of the **Reduced County Herd Size** and **Increased Manure Treatment** alternatives would be similar to those described for the proposed project because each of the dairy facilities could be located anywhere within the DDOZs and would be subject to all of the provisions of the Element. Each facility would be required to implement the recommendations of the site-specific geotechnical report required by **Policy DE 2.1f** of the Element, reducing the potential for adverse soil conditions and slope instability.

*The potential impacts related to seismic shaking, slope stability, and erosion would be similar for the **Proposed Project**, **Reduced County Herd Size**, and **Increased Manure Treatment** alternatives. These impacts could remain higher under the **No Project** alternative because site-specific geotechnical standards would not necessarily be required.*

AIR QUALITY

The **No Project** alternative would not result in significant changes to existing air emissions. Agricultural tillage would be expected to continue, resulting in PM_{10} emissions and exhaust from farm equipment. The intensity of dairy development is assumed to be similar under the proposed project and the **No Project** alternative. Although dairy operations and associated crop production are not currently required to obtain permits from the SJVUAPCD, the district has developed draft revisions to Regulation VIII that would control PM_{10} at agricultural operations, including dairies. Implementation of the draft requirements would result in PM_{10} emissions that would be similar to those expected under the **Proposed Project**.

The emission of methane, ROG, ammonia, hydrogen sulfide, and odors would occur from dairies developed under the **No Project** alternative. Currently, neither the County nor the SJVUAPCD has specific requirements for the control of these emissions from dairies. It is possible that control of these emissions could be required as a condition of approval for future dairies under the County's current permitting process. However, to date, no specific controls on these air emissions have been made a requirement for new or expanded dairies. Therefore, the emission of methane, ROG, ammonia, hydrogen sulfide, and odors would be expected to be greater under the **No Project** alternative relative to the **Proposed Project**. The minimum air emissions for the **Proposed Project** and each alternative are presented in Table 6-2. The emissions calculations are included in Appendix D.

Under the **Reduced County Herd Size** alternatives, the Element would be implemented, including the policies for emissions control under **Objective DE 5.1**. The overall air quality impacts related to the **Reduced County Herd Size** alternatives (Table 6-2) would be less than those identified for the **Proposed Project**, since the number of dairy animals would be reduced and air emissions from dairy operations are generally proportional to the number of animals managed. Under Alternatives 2 and 3, the maximum theoretical herd would be reduced by 10 and 50 percent, respectively, relative to the **Proposed Project** and the **No Project** alternatives (Table 6-2). The maximum theoretical herd includes the existing dairy herd and additional cattle resulting from new and expanded dairy applications subject to the provisions of the Element. The reduction in herd size would result in limiting the number of cattle added to the existing herd. Air emissions from the existing herd would not change while emission of PM_{10}, ~~ROG~~ ozone precursors, methane,

TABLE 6-2: **Summary of Air Pollutant Emissions from Agricultural and Dairy Operation Alternatives**

Activity	Emissions (tons/year)								
		PM_{10}[1]				Ammonia[2]			
	ROG	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 1	Scenario 2	Methane	NOx
No Project									
Fugitive Dust									
Land Preparation	--	1,191	1,191	1,191	1,191	--	--	--	--
Windblown Dust	--	1,514	1,514	1,514	1,514	--	--	--	--
Cattle Movement at Unpaved Corral	--	5,165	10,400	769	1,548	--	--	--	--
Manure Decomposition	5,191	--	--	--	--	7,338	29,821	45,360	--
Cattle	--	--	--	--	--	--	--	71,000	--
ALTERNATIVE TOTAL	**5,191**	**7,870**	**13,105**	**3,474**	**4,253**	**7,338**	**29,821**	**116,360**	--
Proposed Project									
Fugitive Dust									
Land Preparation	--	1,191	1,191	1,191	1,191	--	--	--	--
Windblown Dust	--	1,514	1,514	1,514	1,514	--	--	--	--
Cattle Movement at Unpaved Corral	--	3,808	6,897	567	1,026	--	--	--	--
Manure Decomposition	3,627	--	--	--	--	7,338	29,821	31,693	--
Cattle	--	--	--	--	--	--	--	71,000	--
Vehicle Traffic Exhaust	4.01	1.15	1.15	1.15	1.15	--	--	--	38.39
Equipment Exhaust	22	14	14	14	14	--	--	--	258
ALTERNATIVE TOTAL	~~3,627~~ 3,653	~~6,513~~ 6,528	~~9,602~~ 9,617	~~3,271~~ 3,286	~~3,731~~ 3,746	**7,338**	**29,821**	**102,693**	**296**
10 Percent County Herd Reduction									
Fugitive Dust									
Land Preparation	--	1,228	1,228	1,228	1,228	--	--	--	--
Windblown Dust	--	1,561	1,561	1,561	1,561	--	--	--	--
Cattle Movement at Unpaved Corral	--	3,373	6,377	502	949	--	--	--	--
Manure Decomposition	~~3,367~~ 3,350	--	--	--	--	6,604	26,839	~~29,425~~ 29,273	--
Cattle	--	--	--	--	--	--		63,900	--
Vehicle Traffic Exhaust	3.64	1.04	1.04	1.04	1.04	--	--	--	34.85
Equipment Exhaust	22	14	14	14	14	--	--	--	258
ALTERNATIVE TOTAL	~~3,367~~ 3,376	~~6,161~~ 6,176	~~9,165~~ 9,179	~~3,290~~ 3,304	~~3,737~~ 3,751	**6,604**	**26,839**	~~93,325~~ 93,173	**293**

TABLE 6-2 - ***continued***

Activity	Emissions (tons/year)								
		PM_{10}[1]				Ammonia[2]			
	ROG	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 1	Scenario 2	Methane	NOx
50 Percent County Herd Reduction									
Fugitive Dust									
Land Preparation	--	1,375	1,375	1,375	1,375	--	--	--	--
Windblown Dust	--	1,748	1,748	1,748	1,748	--	--	--	--
Cattle Movement at Unpaved Corral	--	2,156	4,297	327	639	--	--	--	--
Manure Decomposition	~~2,329~~ 2,312	--	--	--	--	3,669	14,911	~~20,353~~ 20,201	--
Cattle	--	--	--	--	--	--	--	35,500	--
Vehicle Traffic Exhaust	2	0.57	0.57	0.57	0.57	--	--	--	19.19
Equipment Exhaust	22	14	14	14	14	--	--	--	258
ALTERNATIVE TOTAL	**~~2,329~~ 2,336**	**~~5,320~~ 5,335**	**~~7,420~~ 7,434**	**~~3,450~~ 3,464**	**~~3,763~~ 3,777**	**3,669**	**14,911**	**~~55,853~~ 55,701**	**277**
Increased Manure Treatment									
Fugitive Dust									
Land Preparation	--	1,191	1,191	1,191	1,191	--	--	--	--
Windblown Dust	--	1,514	1,514	1,514	1,514	--	--	--	--
Cattle Movement at Unpaved Corral		3,808	6,897	567	1,026	--	--	--	--
Manure Decomposition	3,442	--	--	--	--	7,338	29,821	30,082	--
Cattle	--	--	--	--	--	--	--	71,000	--
Vehicle Traffic Exhaust	4.01	1.15	1.15	1.15	1.15	--	--	--	38.39
Equipment Exhaust	22	14	14	14	14	--	--	--	258
ALTERNATIVE TOTAL	**~~3,442~~ 3,468**	**~~6,513~~ 6,528**	**~~9,602~~ 9,617**	**~~3,271~~ 3,286**	**~~3,731~~ 3,746**	**7,338**	**29,821**	**101,083**	**296**

[1] PM_{10} scenarios are described in Section 4.1 .

[2] Ammonia scenarios are described in Section 4.1.

ammonia, and hydrogen sulfide from manure decomposition, PM_{10} from cattle movement in unpaved corrals, and methane from cattle added to the existing herd would be reduced with herd size reduction. Under the **Reduced County Herd Size** alternatives, the emission of PM_{10} from land preparation would increase as dairy facilities would occupy less land than is currently assumed to be in crop production.

Under Alternative 4, all new and expanding dairies would be required to implement advanced manure treatment to reduce air emissions. Relative to the **Proposed Project**, emissions of ROG, methane, ammonia, and hydrogen sulfide caused by decomposition of manure would be reduced as all expanding dairies would be required to implement controlled anaerobic, aerobic, or combined anaerobic/aerobic treatment technologies. However, the reduction of manure decomposition emissions (Table 6-2) under the **Increased Manure Treatment** alternative would be relatively small compared to the **Proposed Project**. The reason for the small reduction is that the exemption for implementation of advanced manure treatment under **Policy DE 5.1c** of the proposed Element would probably only apply to a small number of existing dairies. However, the emissions from Alternative 4 would be significantly lower than those estimated for the **No Project** alternative. Compared to Alternative 4, the **Reduced County Herd Size** alternatives would result in a reduction in manure decomposition emissions that would be comparable to the reductions relative to the **Proposed Project**.

The PM_{10} emissions resulting from Alternative 4 would be comparable to the PM_{10} caused by the **Proposed Project** and the **No Project** alternative. The emissions would be similar because, under each case, the PM_{10} emissions would be controlled by similar measures, implementation of the draft SJVUAPCD Rule VIII guidelines for dust control. PM_{10} emissions from the **Ten** and **Fifty Percent Reduced County Herd Size** alternatives would be reduced proportionally to the herd reductions relative to the **Proposed Project** and the **Increased Manure Treatment** alternatives.

However, the air quality emissions generated by dairy facilities developed under either of the **Reduced County Herd Size** or the **Increased Manure Treatment** alternatives would continue to result in adverse unavoidable impacts as emissions would not be reduced to levels below significant thresholds set by SJVUAPCD for PM_{10} and ROG. In addition, substantial emissions of methane, ammonia, and hydrogen sulfide would be released from the dairies evaluated under the **Reduced County Herd Size** alternatives. As with the **Proposed Project**, dairy facilities under Alternatives 2 and 3 would be augmented with appropriate air emissions control technologies to substantially reduce but not eliminate ~~reactive organic gas~~ ozone precursor (ROG and NOx), ammonia, methane, and hydrogen sulfide emissions.

*The air quality impacts of the **No Project** alternative are likely to be significantly greater than those of the **Proposed Project** and all of the alternatives. The overall air quality impacts of Alternative 2, **Ten Percent Reduced County Herd Size**, would be less than for the **Proposed Project** and the **Increased Manure Treatment** alternative, and the air emissions from Alternative 3, **Fifty Percent Reduced County Herd Size,** would be less than those for Alternative 2. These reductions in emissions would not eliminate adverse and unavoidable impacts.*

WATER RESOURCES

The **No Project** alternative would not reduce potential adverse impacts on water quality relative to the **Proposed Project** or any of the alternatives. Under the **No Project** alternative, current minimum requirements for confined animal facilities set by State regulations (CCR Title 27, Division 2, Subdivision 1, 22562) would be implemented for the protection of surface and subsurface water quality. Implementation of the minimum requirements could result in construction and operation of process water ponds with higher seepage velocities than those specified by **Policy DE 4.1a.B** of the Element, which would be applied to all of the alternatives. Therefore, the infiltration of nutrients into the subsurface could be increased relative to the **Proposed Project** and the alternatives. Compared to the **Proposed Project**, water demand under the **No Project** alternative would be similar to the water demand of the **Proposed Project**, depending on the intensity of dairy development, the types of crops grown in DDOZs and NSOZs, and climate conditions. The impacts on water resources under the **Increased Manure Treatment** alternative would be similar to those described for the **Proposed Project** and, therefore, less than those posed by the **No Project** alternative.

The impacts of the **Reduced County Herd Size** alternatives on water resources would be less than those described for the **Proposed Project** and the **Increased Manure Treatment** alternative as the requirements of the Element for protection of water quality would be implemented, but less dairy development would occur in the County. The level of the impacts would be less than those of the proposed project, since the amount of manure and process water (and associated nutrients) generated and used to irrigate the crop lands would be reduced. The reduction would be proportional to the reduction of the herd size. Under the **Reduced County Herd Size** alternatives, less crop land would be required for reuse of nutrients in manure and process water. Some form of fertilizer would continue to be applied on lands that would, under the **Proposed Project**, be used for reuse of manure and process water. If commercial fertilizers were used, a reduction in the amount of salt applied to crop land would be reduced relative to the **Proposed Project**.

Under the **Reduced County Herd Size** alternatives, the water demand for dairy operations relative to the **Proposed Project** and the **Increased Manure Treatment** alternative would be reduced proportionally to the percentage of herd reduction. It is likely that the amount

of double cropping of silage crops would be reduced under these alternatives compared to the **Proposed Project** and Alternative 4, resulting in lower water demand. Relative to the **No Project** alternative, the water use under the **Reduced County Herd Size** alternatives would also probably be reduced, particularly in the case of the **Fifty Percent Reduced County Herd Size** alternative. The water use impacts would be similar under the **Proposed Project** and the **Increased Manure Treatment** alternative.

*The water quality impacts of the **No Project** alternative would be greater than those of the **Proposed Project** and the **Increased Manure Treatment** alternative. The water quality impacts of the **Reduced County Herd Size** alternatives would be expected to be less than those under the **Proposed Project** and the **No Project** and **Increased Manure Treatment** alternatives as less dairy development would be expected. Water use would be reduced under the **Reduced County Herd Size** alternatives relative to the **Proposed Project** and the **No Project** and **Increased Manure Treatment** alternatives.*

BIOLOGICAL RESOURCES

Impacts on existing biological conditions could occur under the **No Project** alternative, as dairy development proceeds under existing permitting practices. The specific restriction on dairy development in areas of sensitive biological habitat (**Policy DE 1.2e**) and the requirement for biological surveys **(Policy DE 3.3a**) contained within the Element are not specified under the existing permitting process. Although not specified, dairy development within sensitive habitat could be controlled under the CUP permit review and associated environmental review. The potential for "incidental take" of protected species caused by increased equipment operation and vehicular traffic would be similar to that described for the **Proposed Project** and **Increased Manure Treatment** alternative if a similar level of dairy development were to occur under the **Proposed Project** and the **No Project** alternative.

The potential impact on biological resources with implementation of the **Reduced County Herd Size** alternatives would be reduced relative to the **Proposed Project** and the **Increased Manure Treatment** alternative. The restrictions and requirements for the protection of biological resources contained in the Element would be implemented under both **Reduced County Herd Size** alternatives. However, reduced dairy development would result in less land converted to dairy facilities and the potential for disturbing habitat would be reduced. The potential for "incidental take" of protected species caused by increased equipment operation and vehicular traffic would be reduced under the **Reduced County Herd Size** alternatives relative to the **Proposed Project** and the **Increased Manure Treatment** alternative as less dairy development would be allowed.

*The biological impacts of the **No Project** alternative would be similar or increased relative to the **Proposed Project** and all other alternatives, depending on the effectiveness of the current permitting process in protecting resources. The impacts on biological resources would be reduced under the two **Reduced County Herd Size** alternatives with less dairy development occurring relative to the **Proposed Project** and the **No Project** and **Increased Manure Treatment** alternatives.*

NOISE

Under the **No Project** alternative, the potential for noise impacts related to dairy development would not change. All dairy operations would need to comply with the noise standards of the General Plan. Therefore, the noise impacts under this alternative would be similar to those resulting from the **Proposed Project**, the **Reduced County Herd Size** and **Increased Manure Treatment** alternatives, as the Element relies on conformance with these same standards. However, dairy construction and operational noise would be reduced under the **Reduced County Herd Size** alternatives as less dairy development would occur relative to the **Proposed Project**, **No Project**, and **Increased Manure Treatment** alternatives. Agricultural crop production activities would be expected to be greater under the **Reduced County Herd Size** alternatives. These activities would be expected to generate less noise than dairy construction and operation. In addition, noise related to vehicular traffic generated by dairies under the **Reduced County Herd Size** alternatives would be reduced relative to the **Proposed Project**, **No Project**, and **Increased Manure Treatment** alternatives.

*The noise impacts of the **Reduced County Herd Size** alternatives would be less than those of the **No Project**, **Increased Manure Treatment** alternative, and **Proposed Project**.*

LIGHTING AND GLARE/VISUAL RESOURCES

Lighting and aesthetic impacts related to dairy development would be similar under the **No Project** and **Increased Manure Treatment** alternatives and the **Proposed Project**. The intensity of dairy development would be similar and localized impacts near dairy facilities would occur. The same local effects would be expected under the **Reduced County Herd Size** alternatives, but the intensity of dairy development would be reduced with smaller herds relative to the **Proposed Project**, **Increased Manure Treatment**, and **No Project** alternatives.

*The lighting and visual impacts of the **Reduced County Herd Size** alternatives would be less than those of the **Proposed Project** and the **No Project** and **Increased Manure Treatment** alternatives.*

LAND USE AND POLICIES

Under the **No Project** alternative, no change in dairy permitting process would occur. Dairy development could continue to occur but would be controlled by existing permitting requirements and required environmental review of dairy applications. The potential for conflicts with incompatible land uses could be greater relative to the **Proposed Project** and all other alternatives as less specific controls on setback of dairy facilities from other uses are currently in effect compared to those presented in the Element. However, potential land use conflicts are required to be considered during review of dairy development applications. Considering that the Element would be implemented under the **Reduced County Herd Size** and **Increased Manure Treatment** alternatives, the potential land use impacts under these alternatives would be similar to those under the **Proposed Project**. The **Proposed Project**, **Reduced County Herd Size**, and **Increased Manure Treatment** alternatives would be consistent with all applicable policies of the amended Kings County General Plan and the Zoning Ordinance following the approval of SPRs for individual dairy projects.

*The land use and policy impacts of the **Reduced County Herd Size** alternatives would be less than for any of the other alternatives.*

HUMAN HEALTH AND SAFETY

The **No Project** alternative would present similar potential for human health impacts compared to the proposed project. Control of hazardous materials specifically used for dairy operations and the potential for release of pathogens would be evaluated on a site-specific basis during dairy application review. Pesticides and fertilizers typically used in agricultural crop production would continue to be used.

The **Proposed Project**, **Reduced County Herd Size**, and **Increased Manure Treatment** alternatives have similar impacts related to increased vector activity and pathogens and would require similar use of hazardous materials. Under the **Proposed Project** and these alternatives, dairy development projects would be required to implement an ~~integrated~~ pest and vector management ~~plan~~ program (~~IPM~~ PVMP). Additionally, dairy projects developed under the provisions of the Element would be required to implement specific measures to minimize infiltration or runoff of water that could potentially contain pathogens. Under the **No Project** alternative, dairies are not required to have ~~IPMs~~ PVMPs or specific water quality controls. Therefore the potential for impacts related to insect and rodent pests and pathogens would be increased. However, less dairy development would occur under the **Reduced County Herd Size** alternatives. All alternatives would have similar potential exposure of workers to residual agricultural chemicals in the soil. Under the **Reduced County Herd Size** alternatives, less manure and process water would be

available for reuse as fertilizer, increasing the reliance on commercial fertilizer relative to the **Proposed Project** and **Increased Manure Treatment** alternative.

> *The potential human health and safety impacts of the **Reduced County Herd Size** alternatives would be less than those of the **No Project** and **Increased Manure Treatment** alternatives and the **Proposed Project**.*

TRANSPORTATION

Under the **No Project** alternative, traffic levels could be expected to increase with continued dairy development and would ultimately be similar to the increase associated with the **Proposed Project** and the **Increased Manure Treatment** alternative. Traffic levels would probably continue to be within acceptable levels and no intersections would require improvements.

Traffic generated by the **Reduced County Herd Size** alternatives would be 10 to 50 percent less than for the **Proposed Project** and the **No Project** and **Increased Manure Treatment** alternatives. Under the **Proposed Project**, **Reduced County Herd Size**, and **Increased Manure Treatment** alternatives, traffic levels would continue to be within acceptable levels and no nearby intersections would require improvements. Under cumulative conditions, the background traffic volumes along Kansas Avenue and area highways would continue to increase (approximately three percent per year) as the Corcoran and Hanford urban areas grow, and eventually improvements would be required at several intersections in the project area.

> *The transportation impacts of the **No Project** alternative would be similar to those of the **Proposed Project** and **Increased Manure Treatment** alternative. Traffic level impacts would decrease proportionally to the **Reduced County Herd Size** and **Increased Manure Treatment** alternatives and would be less than the impacts of the **Proposed Project** and **Increased Manure Treatment** alternative.*

PUBLIC SERVICES AND UTILITIES

Operation of the dairy facilities expected under the alternatives and the proposed project would create a slight increase in demand for certain public services, such as police and fire protection, solid waste, schools, and park facilities, since more employees and new families would be located on new and expanded dairy facilities. The increased demand for public services would be similar for the proposed project and the **No Project** and **Increased Manure Treatment** alternatives. The demand under the **Reduced County Herd Size** alternatives would be reduced proportionally to the herd size reduction relative to the **Proposed Project**, **No Project**, and **Increased Manure Treatment** alternatives. Therefore,

the **Fifty Percent Reduced County Herd Size** alternative would result in the lowest increase in demand for public services.

*The public service impacts of the **Reduced County Herd Size** alternatives would be less than those of the **Proposed Project**, **No Project**, and **Increased Manure Treatment** alternatives.*

CULTURAL RESOURCES

The intensity of dairy development controls the potential for impacts on cultural resources. Excavation during construction of dairy facilities could result in the disturbance or destruction of historical or archaeological resources. Under the **No Project** and **Increased Manure Treatment** alternatives and the **Proposed Project**, the intensity of dairy development would be similar. The **Reduced County Herd Size** alternatives would be expected to result in the construction of fewer dairies. Therefore, the **Fifty Percent Reduced County Herd Size** alternative would present the least potential for cultural resource disturbance. Under the **Reduced County Herd Size** and **Increased Manure Treatment** alternatives and **Proposed Project**, the requirements for investigation of cultural resources provided by **Policies DE 3.1c, d,** and **e** of the Element would be implemented. Such requirements could be also be imposed during permit application review under the No Project alternative.

*The potential for impacts to cultural resources of the **Reduced County Herd Size** alternatives would be less than those of the other alternatives or the **Proposed Project**.*

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines require that the "environmentally superior" alternative (including consideration of the proposed project) be identified in an EIR. If the no project alternative is found to be the least environmentally damaging alternative, which it often is, then a second superior alternative shall be identified. The environmental impacts of the **No Project** alternative would be similar to or greater than those of the **Proposed Project** and the **Reduced County Herd Size** and **Increased Manure Treatment** alternatives. Additionally, the **No Project** alternative would not meet the major objectives of the proposed project.

Based on the comparative analysis above, the **Fifty Percent Reduced County Herd Size** alternative would be environmentally superior. This alternative is superior because it would result in a smaller increase in potential impacts (especially air quality) compared to the **Proposed Project**, albeit not eliminate the impacts or reduce all of them to less than significant. In general, the reduction in most impacts (including air emissions) would be proportional to the reduction in maximum theoretical herd size. Therefore, the **Fifty**

Percent Reduced County Herd Size alternative would reduce impacts to levels below those expected for the **Proposed Project** and all other alternatives.