ANIMAL CONFINEMENT FACILITIES PLAN

Phase I: Dairy/Bovine Animal Confinement Facilities

Phase I
Animal Confinement Facilities Plan
of the
Environmental Resources Management Element
of the
Tulare County General Plan

General Plan Amendment No. GPA 99-05

And

Final Program Environmental Impact Report
SCH #99031044

March 2000

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INTRODUCTION

NEED FOR THE STUDY

In 1974, an Animal Waste Management Element (AWME) was prepared as part of the Environmental Resources Management Element (ERME) of the Tulare County General Plan. Included within the AWME were proposed policies for the establishment and operation of dairies and feedlots. The Board of Supervisors did not adopt the AWME for incorporation into the General Plan. The policies set forth were, however, adopted by the Tulare County Planning Commission and have been used since 1974 as guidelines in considering Special Use Permit applications for the establishment of confined animal operations, in particular dairies and feedlots.

The policies and guidelines utilized for the establishment and operation of confined animal operations have been reviewed and modified to provide consistency with other regulatory agencies, e.g., California Regional Water Quality Control Board. These reviews have resulted in the modification of the guidelines, particularly in regards to the intensity of operation or density of animal units.

The impact of dairies on county resources has been an issue under investigation by the Tulare County Grand Jury over the past several years. Pursuant to the Grand Jury's findings and recommendations, the Tulare County Board of Supervisors, in January 1998, adopted a "Quality of Life Program". Set forth in this Program was a commitment to protect and enhance the quality of life for the residents of Tulare County. The provision of resources to monitor the impacts of the dairy industry on the county's groundwater supply was included as a component of this program.

The Tulare County Agricultural Advisory Committee (AAC), on May 26, 1998, adopted a set of recommended "Dairy/Animal Confinement Facility Policies" which include locational and animal density criteria for the establishment of new dairies and animal confinement facilities. The Tulare County Planning Commission (by Resolution No. 7693), and subsequently the Board of Supervisors (by Resolution No. 98-0582), adopted the Committee's policies on an interim basis until the Animal Confinement Facilities Plan (ACFP) can be adopted and incorporated into the ERME of the Tulare County General Plan.

OBJECTIVES AND SCOPE OF THE STUDY

The Environmental Resources Management Element (ERME)) series of the Tulare County General Plan has been developed to establish goals and policies that would protect and enhance the county's resources. Under the Environmental Management concept, the following objectives are addressed:

(a) Development of policies and programs which will avoid degradation of the natural environment and offset or reverse degradation which has already occurred;

(b) Recognition of the complexity and interrelation of the environmental and planning processes;

(c) Attendance to environmental issues that, due to their importance, should be given priority attention for policy and action in order to provide for future development; and

(d) Acknowledge those resource systems that require long periods to restore or require ongoing conservation practices in order to avoid continued decline or degradation.

The proposed amendment to the General Plan involves the adoption of the Animal Confinement Facilities Plan (ACFP) and its incorporation into the Environmental Resources Management Element (ERME) of the Tulare County General Plan. The ACFP will be a phased document covering the following:

- Phase I will cover dairy and other bovine animal confinement facilities
- Phase II will cover all other livestock (including, swine, sheep, rabbit, poultry, ratite, and other bird) raising facilities

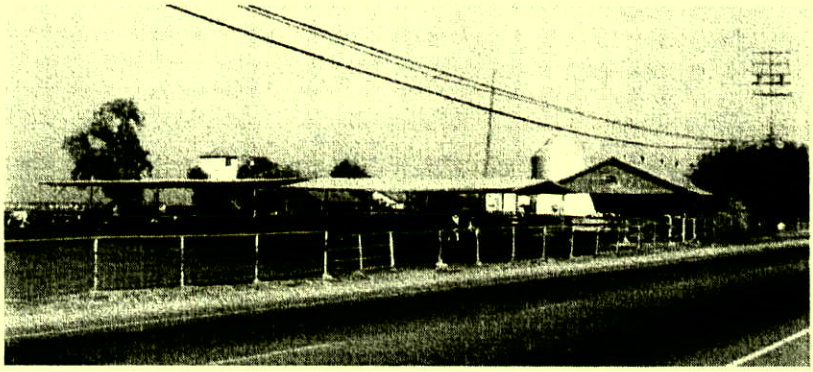
Policies and standards have been developed that specifically address dairies and other bovine animal confinement operations and associated environmental issues for inclusion in Phase I of the ACFP. These policies and standards are premised on current scientific data and technology that provide for the strategic siting and operation of these facilities. Additionally, the policies and standards are reflective of and consistent with State and federal regulations, adopted and proposed.

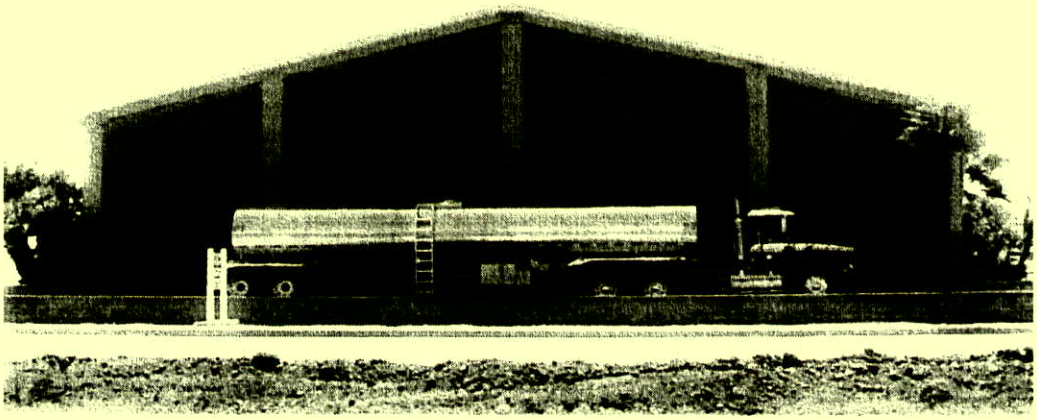
It is intended that the policies and standards established herein will provide for the development of dairies and other bovine animal confinement facilities on the Valley floor of the county in such a manner that: protects the quality of the environment; safeguards the health, safety and general welfare of the County's residents; and provides for the continuation and growth of animal related industries.

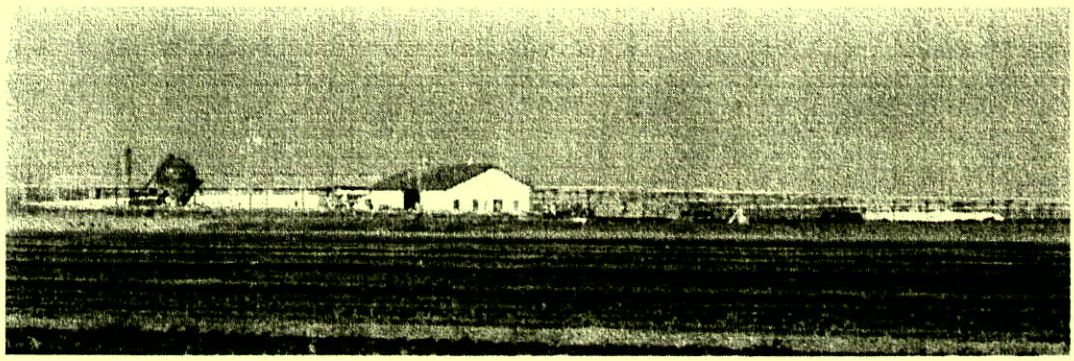
ORGANIZATION OF THE STUDY

Phase I of the Animal Confinement Facilities Plan includes the following sections:

Chapter 1 provides a background of the Animal Industry in Tulare County, outlines associated environmental issues, and summarizes federal, State and local regulations.







CHAPTER 1: BACKGROUND

CHAPTER 1
BACKGROUND

1.1 TULARE COUNTY'S ANIMAL INDUSTRY

Tulare County is ranked second in the nation for agricultural production. The 1998 Tulare County Agricultural Crop and Livestock Report prepared by the Tulare County Agricultural Commissioner reported a total of $2.9 billion in gross receipts. Forty-two percent of this value is attributed to livestock and poultry (11 percent of total), and to livestock products (31 percent of total). Eighty-one percent of the livestock and poultry value is attributed to cattle and calves; ninety-eight percent of the livestock products value is attributed to milk production. Milk has been the County's leading commodity since 1988.

According to the Tulare County Agricultural Commissioner, the value of milk production in 1998 was almost $898 million, ranking the County as the number one dairy county in the State. Increasing the importance of dairy farming in Tulare County is the value of other high-value crops grown in the county which are directly related, such as alfalfa hay and silage ($82 million), grain and silage corn ($64 million), and small grain silage ($17 million). Additionally, studies by the University of California suggest that the "added value" activities (e.g., marketing, shipping, facility construction, and other support services) can generate an additional $2.50 to $3.00 for each dollar of income directly produced by an agricultural commodity.

The statistics noted above reflect the current economic importance of the dairy industry in Tulare County. When compared to statistics for the previous five years, the growth of the industry is substantial: 1997 - >$716 million; 1996 - >$698 million; 1995 - >$567 million; 1994 - >$554 million; and 1993 - >$447 million. The current or 1998 crop value of milk production is double the 1993 value. It should be noted, however, that the increase in crop value is influenced by market conditions and does not necessarily reflect an equitable or across the board increase in the number of dairies in the county or the number of animals. For instance, in January of 1994, there were 290 dairies in operation with a total of approximately 258,986 cows. As of January 1999, there were 291 dairies with a total of approximately 312,340 cows. This reflects a relatively constant number of dairies (increased by less than 1 percent) but an increase in the herd count of approximately 19 percent. (Dairy and cow numbers are based on statistics compiled by the County's Dairy Advisor for annual Master Dairy Lists.)

With 291 dairies in the county supporting an estimated 312,340 cows (milking and dry), the average herd size is 1,073. The average herd size for the previous year (as of January 1998) was 1,040 (305,390 cows on 293 dairies). These numbers reflect the trend that has been seen in the county over the years toward larger herds as farm numbers hold fairly constant but total cow numbers grow. Over the past five years, the number of dairies with less than 200 cows remains relatively unchanged and represents only five percent of the total dairies. A noticeable drop has occurred in the numbers of

herds with 200 to 600 cows, while herds with 600 to 1,000 cows increased slightly during the 5-year span. Herds with 1,000 to 1,500 cows grew from 56 percent in 1994 to 59 percent in 1999. The other noticeable growth has been in the 1,500 to over 2,500 cow herds during this same time frame, and indications are this trend will continue. (Tom Shultz, U.C.Cooperative Extension 1999). A comparison of herd size for 1994 and 1999 is shown on Table 1.1-1 below.

Table 1.1-1
Tulare County Dairy Herd Size

Herd Size	Number of Herds	
	1994	1999
<200	15	14
200-400	51	38
400-600	47	33
600-800	35	40
800-1,000	40	40
1,000-1,500	56	59
1,500-2,000	29	33
2,000-2,500	12	17
>2,500	5	17

(NOTE: The dairy totals include two non-private dairies, the College of the Sequoias and Tulare High School farms).

1.2 ENVIRONMENTAL ISSUES ASSOCIATED WITH THE INDUSTRY

It is anticipated that Tulare County will continue to lead the milk production industry on both a State and national level. However, it is not anticipated that the number of dairies would increase proportionately with the milk production; only the number of cows would increase. If the herd size increases without a proportional increase in the cropland utilized for waste disposal/nutrient recycling, the potential for groundwater contamination increases.

The increase in herd size without a proportionate increase in cropland disposal area is not an issue exclusive to dairies. In December 1997, a report on animal waste pollution and the environmental risks associated with livestock and poultry operations was compiled by the United States Senate Committee on Agriculture, Nutrition & Forestry, Minority Staff. This report indicates that nationwide, the number of hog farms and poultry operations has decreased by 35 to 60 percent while maintaining production or, in some cases, doubling or tripling production. This trend is apparent in Tulare County as well with livestock and poultry production maintaining or increasing without a net increase in new facilities.

The addition of new dairy operations, as well as the increase in herd size of confined animal operations without a proportional increase in operational area, can

result in too high a concentration of animals both on-site and within a given area. It is possible that certain areas in the county may be nearing saturation. A review of planning records from the County Resource Management Agency reveals that the greatest number of existing dairies in Tulare County are found east and west of the City of Tulare. Figure 1-1 reflects the generalized locations of dairies. Other established dairy areas in the county are located:

- between Dinuba and Goshen along Road 80 and Avenue 360;
- southwest of Goshen along State Highway 198 and west of Highway 99;
- the Waukena area northeastward to within four miles of the western county line;
- south of the Tule River between Roads 48 and 160, generally east and west of Tipton and Pixley; and
- west of Tipton along Avenue 144 (Highway 190) between Roads 64 and 96.

Higher concentration of dairies results in a higher concentration of animal waste, which if not managed and disposed of properly can lead to soil and water (ground and surface) contamination. The degradation of ground and surface water quality has evolved as a major concern on a State and national level, however, it is not the only issue associated with the industry. Although the PEIR contained in Chapter 4 of this Report discusses potential impacts on a more detailed level, the following list reflects the major environmental concerns associated with confined animal operations.

- Degradation of Surface Water
- Degradation of Ground Water
- Degradation of Air Quality
- Land Use Conflicts
- Road Construction and Maintenance
- Potential Health Hazards
- Loss of Natural Habitat

1.3 REGULATORY ENVIRONMENT

1.3.1 FEDERAL STANDARDS

Clean Water Act

In 1972, Congress enacted the Clean Water Act (CWA) that established national policies for protecting water resources. For the past 25 years, the basic approach of the Act has been for stringent control of "point sources" of water pollution with specific exemptions for many agricultural operations. On October 18, 1997, the 25th anniversary of the CWA, the Department of Agriculture (USDA) and the Environmental Protection Agency (EPA) were directed to prepare a Clean Water Action Plan (CWAP). The purpose of the Plan is to strengthen and expand existing clean water programs by:

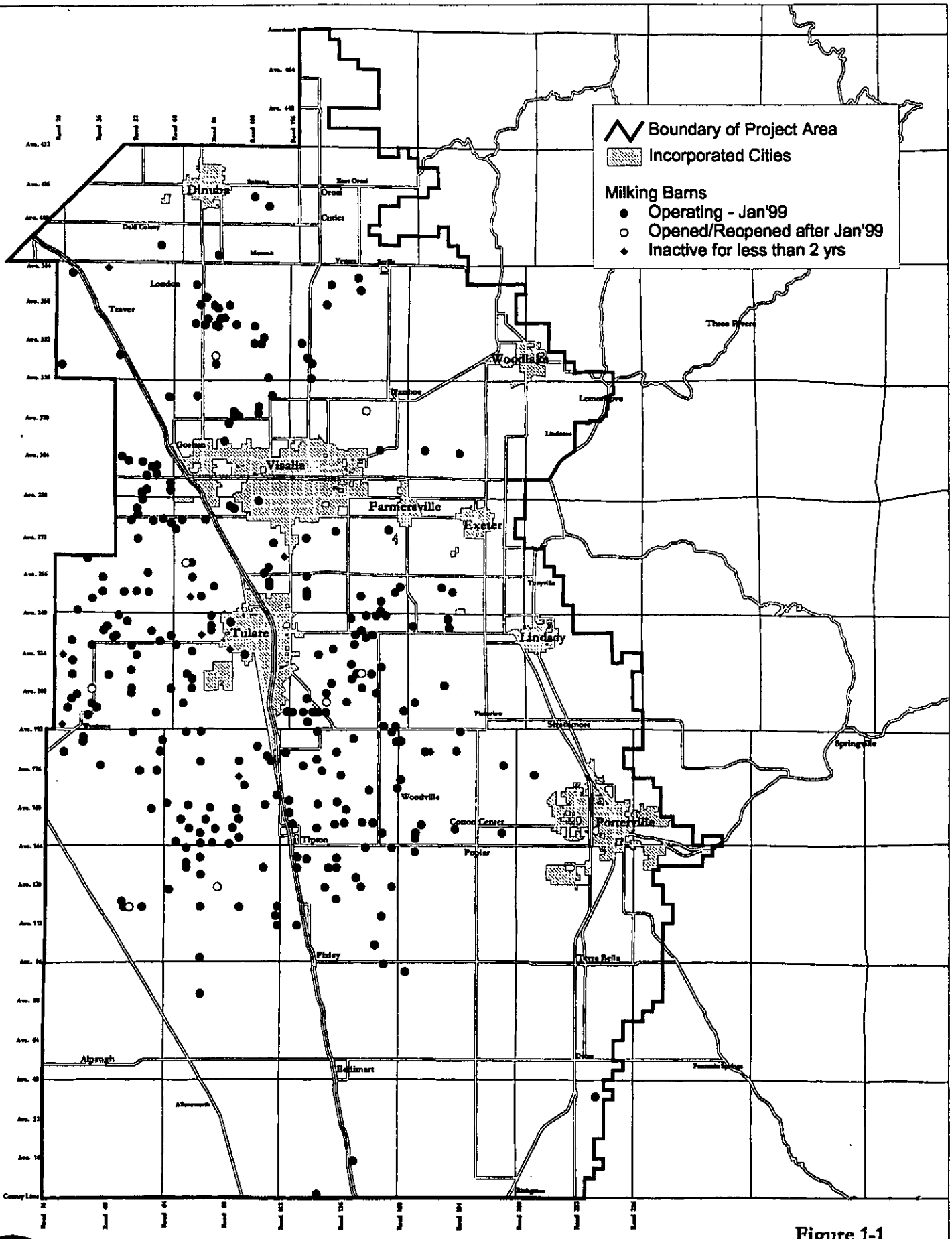


Figure 1-1

Location of Dairies in Tulare County

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

N W E S

2 0 2 4 6 Miles

- protecting public health;
- enhancing stewardship of natural resources;
- strengthening polluted runoff standards and controls; and
- improving information and citizen's right to know.

The CWAP includes more than 100 key actions that will achieve the desired goals. One specific action calls for the development of a Unified National Strategy for Animals Feeding Operations. On September 11, 1998, USDA-EPA released a draft strategy that is intended to minimize the water quality and public health impacts of animal feeding operations (AFOs). Under the draft strategy, AFOs are characterized or defined as:

> "agricultural enterprises where animals are kept and raised in confined situations. AFOs congregate animals, feed, manure and urine, dead animals, and production operations on a small land area. Feed is brought to the animals in lieu of grazing or otherwise seeking feed in pastures or fields."

The draft strategy establishes a national performance expectation that all AFOs should develop and implement a Comprehensive Nutrient Management Plan (CNMP) by the year 2008. However the filing of a CNMP is voluntary unless the AFO qualifies as a "Concentrated Animal Feeding Operation" (CAFO) and is subject to NPDES regulations (refer to discussion of NPDES regulations below). An AFO is considered a CAFO under federal regulations if:

- it confines more than 1,000 animal units (equivalent of 700 mature dairy cows); or
- it confines between 301 (equivalent of 200 mature dairy cows) and 1,000 animal units and discharges pollutants into waters of the United States (either directly into on-site water, or indirectly by channeling wastes through a ditch, flushing system, or other device); or
- EPA has designated it as a CAFO upon determining that the operation, regardless of its size, is a significant source of pollution. This determination, which considers a number of factors (such as slope, vegetation, and the proximity of the operation to the waters), is based on an on-site inspection by the agency that issues the permits.

According to federal regulations, a facility will not be considered a CAFO if it discharges pollutants only in the event of a 25-year, 24-hour storm. (Defined as the number of inches of rainfall in a 24-hour period that is expected to occur only once every 25 years, a figure that is published for every location in the United States by the National Weather Service).

At a minimum, a CNMP should address feed management, manure handling and storage, land application of manure, land management, record keeping, and other utilization options (for AFOs located within vulnerable watersheds). A CNMP should

also include a schedule for implementing the best management practices that are identified.

National Pollutant Discharge Elimination System (NPDES) Permits

The federal Clean Water Act regulates water quality in surface waters with respect to discharges into those waters from industrial, municipal or agricultural uses. Under Section 402 of the Act, permits can be issued for point sources to ensure that national minimum standards for effluent are met. These permits are called National Pollutant Discharge Elimination System permits or NPDES permits. In California these permits are issued by the Regional Water Quality Control Boards and implemented under the authority of the California Water Code. NPDES discharge permits are not generally issued for dairies if the operation meets Regional Water Board requirements. However, a NPDES permit cannot be waived if discharge to surface water occurs.

1.3.2 STATE STANDARDS

Water Quality Control Plan for the Tulare Lake Basin

The Basin Plan for Tulare County was first adopted by the Central Valley Regional Water Quality Control Board (CVRWQCB) in 1975 under the auspices of the Water Quality Control Plan for the Tulare Lake Basin. (Reference Figure 1-2 for the location of the Tulare Lake Basin.) The Plan became effective after the approval by the State Water Board and U.S. Environmental Protection Agency. Included within the Basin Plan, as originally adopted and subsequently amended, are water quality standards that protect both surface and ground waters.

Title 27 of the California Code of Regulations, Section 2510-2601 (Chapter 15) contains minimum standards to protect both surface and ground waters from discharges of animal waste at confined animal facilities. (Reference Appendix B) In addition to the standards in Chapter 15, the following are required by RWQCB, as outlined in the 1995 edition of the Tulare Lake Basin Plan:

- Lands that receive dry manure shall be managed to minimize erosion and runoff, and applied manure shall be incorporated into surface soils soon after manure application.
- Animal confinement areas, manure storage areas, lagoons, disposal fields, and crop lands that receive manure shall not create a nuisance.
- Salt in animal rations should be limited to the amount required to maintain animal health and optimum production.
- Animal confinement facilities, including retention ponds, shall be protected from overflow from stream channels during 20-year peak stream flows for facilities that existed as of 25 July 1995 and protected from 100-year peak stream flows for facilities constructed after 25 July 1975. Facilities constructed after 8 December 1984 must comply with the specifications in Chapter 15.

REGIONAL WATER QUALITY CONTROL BOARDS
TULARE LAKE BASIN LOCATION MAP

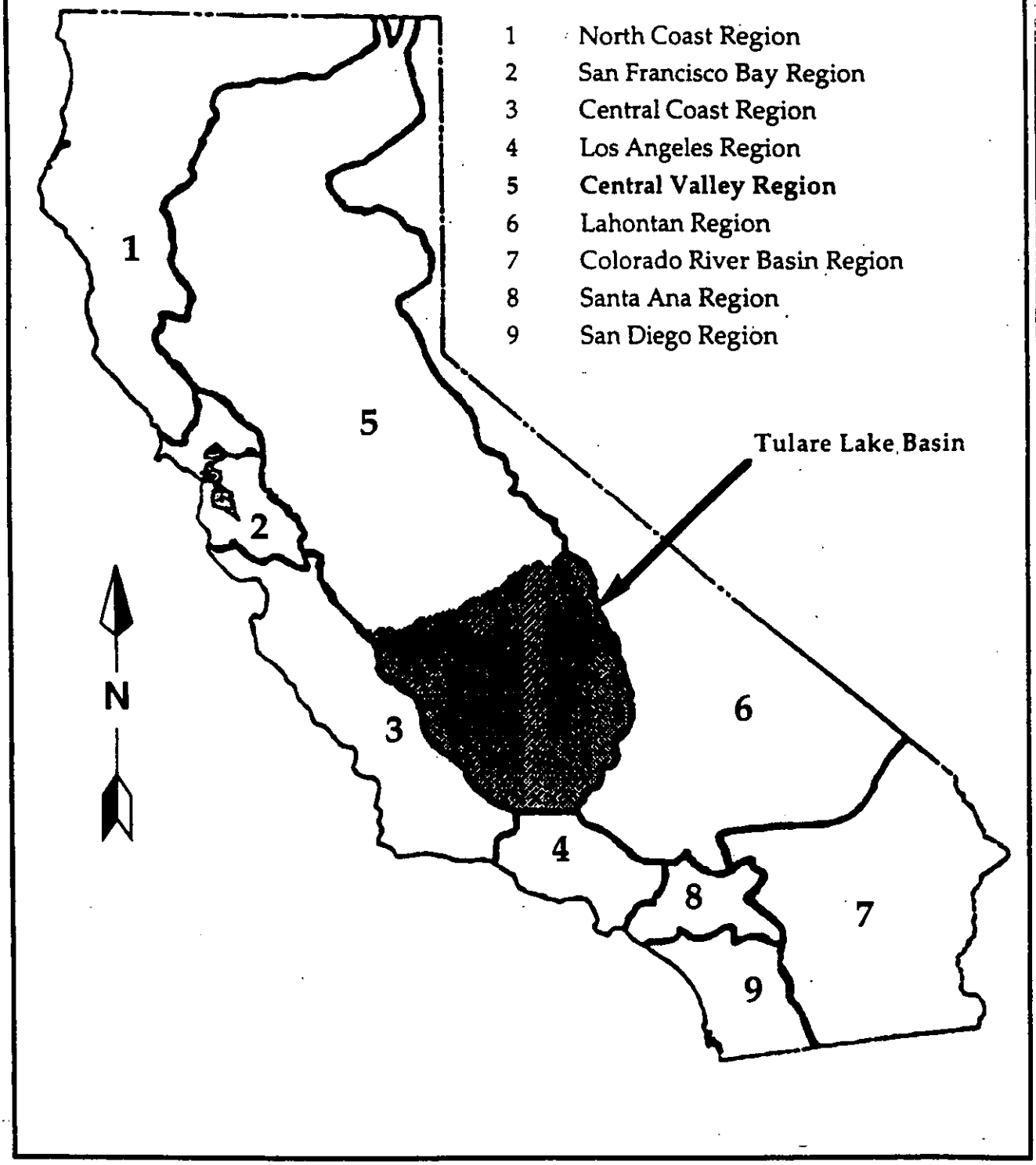


Figure 1-2

LOCATION OF THE TULARE LAKE BASIN

Tulare County Resource Management Agency

25 0 25 50 75 100 Miles

N W E S

- Facilities shall be designed and constructed to retain all facility wastewater generated, together with all precipitation on, and drainage through, manured areas during a 25-year, 24-hour storm. Facilities with operation capacities equal to or greater than the capacities described in 40 CFR 412 (Feedlots Point Source Category) must obtain an National Pollutant Discharge Elimination System (NPDES) permit prior to discharge for events greater than a 25-year, 24-hour storm.
- New manure retention ponds shall be sited, designed, constructed, and operated to ensure that the invert of the pond will be at least 5 feet above the highest anticipated elevation of underlying groundwater.

Waste discharge requirements for the land application of wastewater may be conditionally waived for animal confinement facilities that can demonstrate compliance with the above. This waiver does not waive responsibility of the facility owner or operator to apply for and comply with a storm water permit. Facilities for which waste discharge requirements are waived shall provide an annual report to the Regional Water Board describing land and waste management practices for the prior year. The annual report must summarize the following:

1. Inventory of total head of milking cows, dry cows, heifers, calves, and comparable number of animal units at the dairy during the year.

2. Crops and acreage used for wastewater disposal (irrigation application).

3. Estimates of the quantity of dry manure (tons) spread on site and exported off site, including the location of the fields where the manure is applied, and the names of buyers and/or location of application (disposal) areas, if applicable.

The California Regional Water Quality Control Board (RWQCB), Central Valley Region, has adopted General Waste Discharge Requirements for Milk Cow Dairies under Order No. 96-270 (see Appendix B). As regulated under the State Water Code, discharges of dairy waste include, but are not limited to: (a) the application of wastes to land; (b) the movement of waste constituents from application and storage areas into the soil; and (c) movement of waste or water containing wastes into surface waters. Under Resolution No. 82-036, RWQCB waives waste discharge requirements (WDRs) for specific types of discharge, including those from confined animal facilities, when discharge activities are in compliance with Title 27 of the California Water Code. However, for milk cow dairies that do not meet the waiver conditions in Resolution No. 82-036, individual waste discharge requirements are established. Typically, dairies that would not meet the waiver conditions include, but are not limited to, those located on very sandy soils, in areas of high ground water, or where the loading rates of the operation are excessive.

1.3.3 LOCAL REQUIREMENTS

Special Use Permit

The Tulare County Zoning Ordinance provides that dairies and feedlots, when more than 25 animals are on the property at any time, are permitted in most agricultural zones upon the granting of a Special Use Permit. Use permits have been required for these facilities since October 5, 1972. Facilities that were existing prior to this date are permitted to continue operation under a "legal nonconforming" or "grandfathered" status. Under the Zoning Ordinance, a use permit is not required for grandfathered dairies unless they propose to expand or the operation is being revised in some way, triggering the requirement for a use permit.

Of the 291 dairies operating in the county as of January 1999, 188 or sixty-five percent of operating dairies are under a Special Use Permit. A summary of dairy special use permit activity since 1973 is provided in Table 1.3.3-1 on page 11.

The Tulare County Zoning Ordinance defines a 'feed lot' as "an enclosed area where bovine animals, sheep, goats, horses, mules, swine or other similar domesticated quadrupeds are held for concentrated feeding or display preliminary to slaughtering, shipping or resale". In the various agricultural zones, no feed lot or area for concentrated feeding of more than 25 animals may be permitted unless a use permit has been secured as required under the Zoning Ordinance.

Of the eighty-eight established bovine feedlots in the county, seventeen have been issued use permits for feedlots. In addition, five bovine feedlots were established or, in the case of two existing feedlots, were expanded after approval of a use permit for a dairy, although the approved dairy facility (milk barn, lagoon, etc.) was not built. In these cases, a feedlot with maximum animal numbers not exceeding those allowed by the dairy use permit was allowed to continue even though the dairy facility component of the use permit was considered to be expired because construction did not occur within two years of permit approval.

Bovine feedlots established by use permit range in acreage and maximum animal numbers permitted from 10 acres with 100 animal units to 720 acres with 7,200 animal units, with most approved for at least 80 acres with 800 animal units. A number of bovine feedlots are located at the sites of former dairy facilities. These feedlots tend to be smaller than those established under special use permit, most likely because the older dairies tended to be much smaller than dairies (or feedlots) established more recently. Also, other small feedlots (generally less than ten acres of corral area) are found throughout the county (especially west and east of the City of Tulare), the status of which varies. Animal numbers for feedlots without use permits are not known.

TABLE 1.3.3-1
Summary of Dairy Special Use Permit Activity

Year	Total # PSP Applications	Action					Approvals		
		Approved	Denied	Withdrawn	Expired	Pending	New	Amend/Expand	Bring into Conformance & Expand
1973	23	17	2	1	3	--	15	--	2
1974	5	5	--	--	--	--	3	1	1
1975	4	4	--	--	--	--	3	--	1
1976	9	7	1	1	--	--	3	--	4
1977	2	1	--	--	1	--	--	--	1
1978	8	4	--	--	4	--	3	--	1
1979	10	8	--	--	2	--	8	--	--
1980	12	10	--	2	--	--	8	--	2
1981	11	9	--	--	2	--	6	--	2
1982	3	3	--	--	--	--	2	1	--
1983	8	7	--	1	--	--	5	--	2
1984	6	5	--	--	1	--	3	1	1
1985	8	6	2	--	--	--	4	1	1
1986	7	7	--	--	--	--	1	2	4
1987	38	28	1	2	7	--	21	3	4
1988	26	15	--	6	5	--	7	4	4
1989	33	20	--	2	11	--	7	7	6
1990	28	13	--	2	13	--	6	4	3
1991	14	10	--	1	3	--	--	4	6
1992	18	11	1	1	5	--	3	3	5
1993	15	11	--	2	2	--	6	5	--
1994	33	20	1	3	9	--	8	8	4
1995	19	15	1	2	1	--	3	11	1
1996	15	14	1	2	2	1	1 P=1	7	1
1997	27	19	--	1	--	7	8	8 P=4	3 P=3
1998	26	12	--	1	--	13	7 P=7	4 P=3	1 P=3
1999*	12	--	--	--	--	12	-- P=5	-- P=2	-- P=5

*Submitted between January 1-April 30; P= Pending.

Animal Waste Management Element

The Animal Waste Management Element (AWME) of the Tulare County General Plan was approved by the Tulare County Planning Commission in 1974. Although the Planning Commission recommended adoption to the Board of Supervisors, the AWME was not adopted by the Board and consequently not incorporated into the General Plan. Included within the original AWME were standards that would have been utilized for a staff-level permitting process for dairy and other concentrated animal raising facilities. The Tulare County Planning Commission did, however, adopt these standards by resolution to be used as "guidelines" when considering and approving use permits for new dairies.

Because the AWME was not adopted by the Board of Supervisors, the guidelines do not have the force of law behind them, e.g., they are not regulations. As noted above, they are only "guidelines" adopted by the Planning Commission which provide a baseline for evaluation by staff and the Commission in considering whether or not to issue a special use permit for a dairy project. The guidelines are applicable only to new facilities. Expansions of existing animal raising facilities are not subject to the guidelines except for animal unit densities. This does not, however, preclude the evaluation of expansion requests in light of the guidelines, nor does it limit the evaluation of requests to bring "grandfathered" facilities into compliance. Limiting the applicability of the guidelines to new facilities has, however, provided flexibility in dealing with unique situations because as "guidelines", the standards can be adjusted or modified to fit special circumstances.

An Agricultural Advisory Committee (AAC) was activated by the Tulare County Board of Supervisors in 1992, with the directive to submit recommendations concerning improvement and update to the AWME. Among the issues of concern at the time were:

- The on-site animal density standards in the County's guidelines are more permissive than what the Central Valley Regional Water Quality Control Board permits. Because of that, it gives the dairymen a false sense of what is really permitted in terms of animal units even though it was common knowledge that State regulations, if more restrictive than local regulations, would supercede County requirements.

- The need to convert animal unit density standards from gross acreage to crop or net acreage.

- There was a growing belief, now confirmed, that many of the permitted dairies, as well as the old nonconforming dairies, had increased herd sizes without getting a special use permit. The County's lack of enforcement resources was recognized along with a need to build an effective monitoring program.

- There was no local tracking of where solid wastes were being disposed.

These concerns led to a report by the AAC in 1992 recommending wholesale changes in the AWME. It also included a proposal to convert the guidelines to rules and regulations that could be enforced as a part of the County's General Plan. Placing the guidelines into the General Plan would give them legal standing under California Planning and Zoning Law. The adoption process, however, was delayed due to a lack of funding to prepare the environmental studies necessary to meet CEQA requirements. As a result, the 1992 recommendations by the AAC were never formally adopted as part of the General Plan. However, the Planning Commission did adopt some of the recommended changes.

In 1998, the AAC re-visited the animal facilities policies, ultimately recommending the set of Interim Policies currently used. The Planning Commission and Board of Supervisors, adopted the 1998 Guidelines as interim policies pending formal adoption as part of the General Plan. (Refer to Appendix N for adopted interim policies.) These interim guidelines are summarized as follows:

1. A 160 acre minimum site area (includes dairy facilities and crop land used for waste discharge).

2. The maximum density of animals shall not exceed four (4) animal units per crop acre unless measures are taken to prevent the unacceptable nitrification or salt pollution of soils and provides parameters are provided for maximum allowable animal units based on operational/management types and cropping patterns. However, in no case shall the maximum total animal density exceed 10 animal units per crop and the maximum number of cows in milk shall not exceed 8 animal units per crop acre.

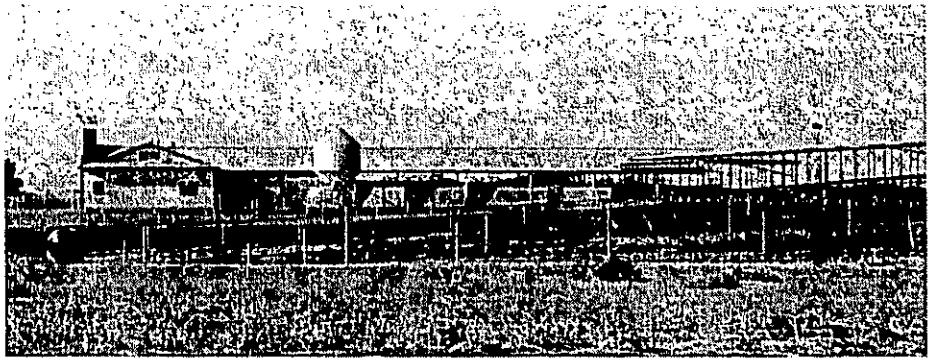
3. The addition of a new operation shall not cause the maximum density of total animals to exceed four animal units per gross acre within a one-mile radius.

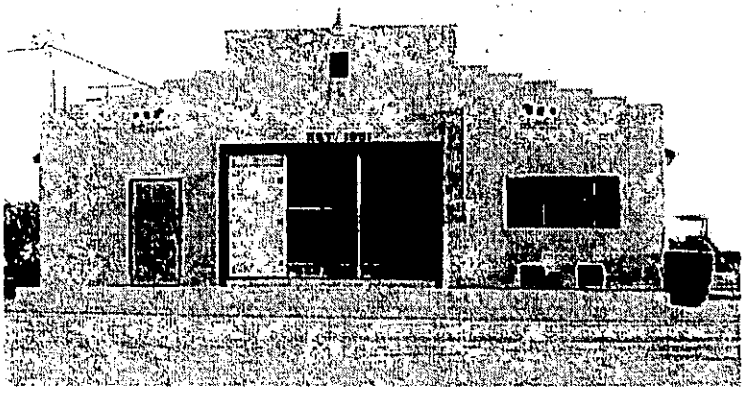
4. Dairies or other animal confinement facilities shall not be located within the windsheds of incorporated and unincorporated communities or within the windsheds of areas zoned for residential use and containing at least 30 dwellings; within primary floodplains; within 1,000 feet from schools or public parks; in sink holes or areas draining into sink holes; or within one-half mile from a concentration of ten or more dwellings.

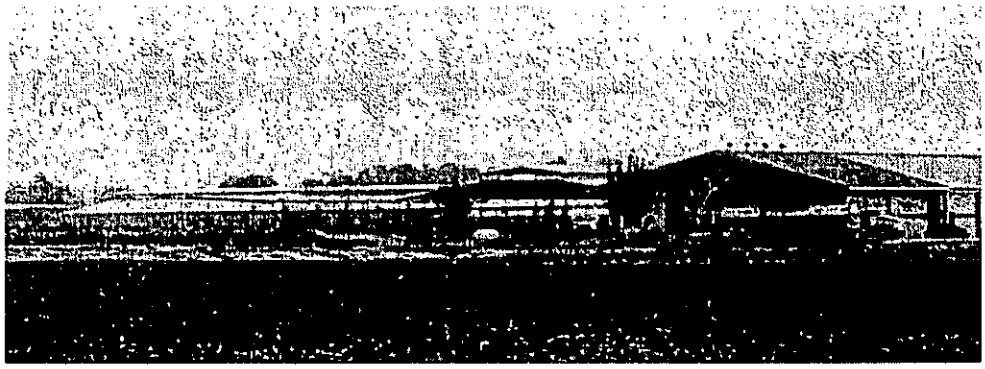
5. Dairies are also prohibited within micro-windsheds for occupied dwelling units not owned by the applicant and dairies are prohibited within one-half mile upwind and one-quarter mile downwind of citrus, vineyards, fruit orchard or vegetable growing operations.

6. New facilities (animal barns, corrals, and pens; manure and feed storage areas excluding hay barns, wastewater lagoons/sumps) shall be located at least one-quarter miles from the nearest nearest dairy, swine or other animal raising facilities and at least one-half from the nearest poultry-raising facility.

The function of the first four policies is to prevent over concentration of dairies and other animal confinement facilities in any particular area to prevent excessive discharges of nitrates and salts, as well as controlling nuisances such as dust, vectors and odor. The function of the last two policies is to avoid present and future land use conflicts and environmental hazards. The separation from fruit and vegetable growing areas has resulted in the location of new dairies and animal confinement facilities in the western section of the Valley floor.







CHAPTER 2: DAIRY MANAGEMENT SYSTEMS

CHAPTER 2
DAIRY MANAGEMENT SYSTEMS

2.1 DAIRY DESIGN

There are a number of options when designing dairy facilities as outlined below. In Tulare County, dairy design includes free stall and open air corral systems. Most newer dairies tend to be free stall design (Tom Shultz, U.C. Cooperative Extension).

Environmental Barn Systems: This is a self-contained system combining all basic facilities in either a warm (insulated) or cold (non-insulated) barn structure. This system is ideal for cold or moderate climates providing year-round protection for cows and operators.

Roofed Free Stall System: This system consists of a compact series of roofed free stalls, matched with sufficient feed bunks. Service alleys between rows of free stalls and feed bunks are paved to allow mechanical scraping or flush cleaning of alleys. This system is ideal for moderate climates where extreme cold or heat is not common. Systems can be expanded easily with minimum land required for improvements.

Free Stall Corral System: Ideal for warm and dry climates where some protection from cold, wind and heat is desired, this system uses unpaved corrals. Fence line feeding is utilized. Paved service lanes connect corrals to the milking parlor/holding facility. Dry manure is collected from corrals periodically.

Free Stall with Lot System: This system allows use of non-insulated free stall barns with doors open to paved area, depending on prevailing winds. Outside feed bunks may be covered for protection. The milking parlor/holding area may be located according to best farmstead layout. A variety of feeding methods is possible including mixer wagons and fence line feeding. Manure handling can be semi-solid or liquid according to facilities and equipment. Settling tanks should be provided for lot run-off.

Open Air Corral System: This system is used in hot and dry climates where unpaved lots are desired and practical. Corrals should contain shade structures to protect cows from heat stress. Evaporator cooled shades are practical with temperatures above 90°F. Fence line feeding is utilized. Paved service lanes connect corrals to the milking parlor facility. Dry manure is collected from corrals periodically.

The design of dairy facilities is dependent upon location and environment. However, when planning any dairy system there are eight basic elements to consider:

- Housing or Shelter – In colder climates, environmental free stall barns provide protection for cows and convenience for operators on a year-round basis. In moderate climates, rows of roofed free stalls provide necessary cover and comfort

for cows. In hot climates, shade structures (some with evaporator coolers) provide protection from extreme heat and rain.

- Milking Parlor – Provides a sanitary and convenient area for milking large numbers of cows with minimum time and labor. Includes elevated milking stalls, prep-stalls, pipeline milking systems, milkroom, utility room, office and lavatory space.

- Holding Area – Holding cows prior to milking in milking parlor is required. A separate area apart from free stalls should funnel cows into parlor efficiently. Consider crowd gates, entrances, exits, catch pens, foot baths and fly control.

- Service Areas – Include paved lots, unpaved corrals, service alleys in free stall barns, movement lanes, fences, railing and water facilities.

- Feeding Facilities – Includes storage, mixing, distributing and feeding of silage, haylage, hay, grains supplements, etc. Manger space for each cow and herd groupings should be considered.

- Treatment & Maternity Areas – These areas should include stanchions or lanes for confining cows for treatment, artificial insemination, vaccination, etc. Separate maternity pens, apart from small calves, should also be provided in large herds. A bullpen, when needed, is sometimes included.

- Calf & Young Stock Facilities – Are often separated from the main herd facility. Provides controlled nursery for small calves and group pens or free stalls for older calves, grouped according to age and size.

- Manure Handling – The cleaning of barns, service alleys, holding areas and parlors must be planned. Cleaning methods, storage and/or disposal must be considered.

2.2 WASTE DISPOSAL SYSTEMS

The concentration of polluting by-products associated with confined animal operations requires the appropriate treatment and disposal of wastes so as to prevent pollution and preclude nuisances. Several types of treatment systems have been used to solve the problems associated with manure disposal. There are advantages and disadvantages to all types of systems. The most common methods of waste treatment systems and disposal methods used over the past 20 – 30 years are outlined below.

Most dairies in Tulare County utilize a "two phase" treatment system. Phase 1 is considered aerobic and involves sedimentation/separation. Phase 2 is considered anaerobic and involves the storage lagoon/retention pond. (Tom Shultz, U.C. Cooperative Extension)

2.2.1 WASTE TREATMENT

Anaerobic Lagoons: One of the first efforts for treatment of animal wastes was the anaerobic lagoon, a take-off and often direct copy of the treatment system used for human wastes. However, because the composition of human and bovine animal wastes is so radically different, this method generally must be followed by additional treatment prior to discharge into the environment.

Solids entering an anaerobic lagoon will decompose at varying rates depending on environmental factors such as the temperature of the lagoon, the degree of mixing that takes place, and the acidity and alkalinity levels of the lagoon. Most of the hydrogen, carbon and oxygen will be removed from the soluble portion in the form of methane and carbon dioxide. (Manure Waste Ponding and Field Application Rates, J.L. Meyer, March 1973.) Considerable gas is evolved and is temporarily trapped with infrequent gas eruption into the air. This results in an objectionable odor in the immediate area. References show that this odor dissipates within 1,000 feet of the source. (Tom Shultz, U.C. Cooperative Extension 1999)

The general purpose of the anaerobic lagoon is the removal, destruction and stabilization of organic matter and not water purification. Lagoons provide excellent settling capacity for interception and separation of heavy solids from liquid flows. The lagoons are relatively cheap to construct and do not require a great deal of maintenance other than removal of the solids build-up at regular intervals and vector control through abatement of weeds and floatage. Dirt removed from the lagoons is used to slope corrals for drainage back to the lagoon. (Tom Shultz, U.C. Cooperative Extension 1999)

Aerobic Lagoons: The aerobic lagoon was developed in an attempt to minimize the objectionable features of the anaerobic lagoon. If properly operated, aerobic lagoons, with either natural aerobic features or mechanical aeration, provide for continual bacteriological action and gradual dissipation of odors. The effluent is well-mixed and easier to dispose of in slurry form.

If no mechanical aeration is provided, lagoons must be no more than three or four feet deep, requiring a large area of land for treatment. Lagoons designed for mechanical aeration may be fifteen to twenty feet deep. A solids removal system is needed with mechanically aerated lagoons. A typical unit might include an aerobic lagoon with diffused aeration, a solid-liquid separator, pumping station and automatic flushing equipment.

Combination Systems: A combination anaerobic-aerobic system may produce an effluent that meets desired water quality standards. An anaerobic unit can serve to equalize any periodic slug loads from confinement feeding operations and can provide for partial degradation, solubilization, and gasification of organic matter. The aerobic unit can provide aerobic stabilization of the soluble and remaining particulate matter in the aerobic unit effluent. Additional units for removal of the biological solids in the

effluent may be necessary in certain cases. Such combination systems can be useful when animal wastes cannot be distributed upon the land.

Oxidation Ditches: In the oxidation ditch process, wastes are either dropped directly into the ditch or pumped into the ditch. The wastes then serve as a substrate for microbial decomposition. The wastewater slurry is mixed and oxygenated by a continuously operating mechanical surface rotor that keeps the wastes circulating so that the solids are kept in suspension. (Proceedings of National Symposium on Animal Waste Management, EPA, September 1971.) It also supplies the necessary oxygen for aerobic bacteria to work. Oxidation ditches do tend to foam, and large undigested materials tend to settle out, sometimes restraining the flow in the ditch.

Composting: The composting of dairy manure where the stacks are either stirred or air is forced through them by blowers can be an effective method of disposal but is not problem-free. In the early stages of composting when the waste is still moist, fly attraction can be a nuisance. If handled properly, composted manure is easily adapted to bulk handling and improves the usefulness and acceptability of the product by eliminating offensive odors and fly attraction. Manure can then be reused for bedding, sold for humus, or transferred to fields for use as fertilizer.

2.2.2 WASTE DISPOSAL

Liquid Handling: After the various types of treatment as outlined above, there is still a problem of how to handle the liquid effluent. Waste liquids can vary from 75-140 gallons per cow per day, depending on individual practices, e.g., size of washing areas, use of sprinklers, etc. Liquid disposal on land, together with liquid holding ponds, provides for flexible application of liquid manure. A typical system for converting liquid manure into usable fertilizer consists of a standpipe, into which the liquid manure is discharged, which also receives irrigation water. This dilutes the manure into a slurry that is then distributed to the fields. Slurry is used to irrigate in two ways: (1) gravity flow distribution on the surface; and (2) injection by mechanical means under the surface. Surface spreading has two objectionable effects, potential for odors and the potential for runoff. The injection method eliminates the potential for these impacts but cannot be used in wet weather or when the fields contain crops.

Land Disposal: Manure is one of the most logical additives to build and maintain fertile soils. Significant amounts of basic plant nutrients are present in manure and the organic matter in livestock manure improves soil tilth, increases water-holding capacity, lessens wind and water erosion, improves aeration of the soil, and has a beneficial effect on the soil micro-organisms. (Manure Waste Ponding and Field Application Rates, J.L. Meyer, March 1973.) When the manure is added to crop lands, the nitrogen (N) content is subjected to the same reactions as the N from commercial fertilizers. These reactions include mineralization, absorption by crops, nitrification, and denitrification or leaching. If not properly managed, manure storage areas can generate point sources of excessive salts and nitrates into groundwater. Also, excessive addition

of manure can increase nitrogen and salt content in soil and groundwater to levels injurious to crops and human and animal health.

Appendix C to this document contains a table that is an excerpt from the *Western Fertilizer Handbook* (1995) listing plant food utilized by various crops.

2.3 SOIL LOADING CAPACITIES

A common denominator for calculating the amount of nutrient matter that can safely be applied to crop areas is the "animal unit". In Tulare County, one mature cow (1,400 pounds) represents one animal unit. An "Animal Unit" is the feed equivalent of one milk cow, as follows:

Classification	Animal Units per Head
Dairy cows in milk and bulls	1.00
Dry cows and heifers more than two years of age	0.75
Heifers one year to two years (beef or dairy)	0.70
Heifers three months to one year (beef or dairy)	0.40
Calves to three months of age	0.17
Beef cows in milk and feedlot steers	0.75

It is acknowledged that other agencies/jurisdictions use an animal use equivalent of 1,000 pounds. For this reason, the following conversion table is provided:

	1,400 lb. AU	**1,000 lb. AU**	**Lbs.**
1 mature cow, bull or steer	1.00	1.40	1,400
1 dry cow	0.75	1.20	1,200
1 heifer (1 – 2 years)	0.70	1.10	1,100
1 heifer (3 months to 1 year)	0.40	0.50	500
1 calf (under 3 months	0.17	0.15	150

(Reference: 40 CFR 122, Appendix B)

The discussion below provides the assumptions and references utilized for determining an acceptable range for soil loading capacity based on nitrates and salts. This information is taken from reports prepared by a dairy subcommittee of the Agricultural Advisory Committee and by Dr. Tom Shultz, U.C. Cooperative Extension, Dairy Advisor for Tulare County. These reports are provided in submitted form in Appendix R.

Based on scientific data provided by the University of California Cooperative Extension Service staff, the Dairy Subcommittee of the Tulare County Agricultural Advisory Committee, in April 1998, prepared the following for determining acceptable animal units per crop acre:

> Different classes of livestock produce nitrogen in manure at different amounts or rates; the classes of livestock used are milk cow, dry cow and heifer. Table values for nitrogen excretion is often expressed on a 1,000 lb. AU basis (ASAE, 1992; MWPS-18, 1985). Today's average milk cow in the southern San Joaquin Valley is better represented at a weight of 1,400 lbs. (D. Bath, 1993; H. H. Van Horn/ C. J. Wilcox, 1992). With today's modern rations, higher producing cows, and intensive management systems, average nitrogen produced is estimated at 0.80 lbs/day, 0.45 lbs/day, and 0.225 lbs/day for milking cows, dry cows, and replacement heifers, respectively (D. Bath, 1993; H. H. Van Horn/ C. J. Wilcox, 1992).
>
> Volatilization of ammonia from manure represents a 50 percent loss from the point of excretion to the ground (MWPS-18, 1985; J. Meyer/R. Rauschkolb/ E. Olson, 1976; D. Vanderholm, 1975). Corral management systems result in different levels of nitrogen volatilization loss. The two standard management systems in the Southern San Joaquin Valley are Open Corral and Free Stall, which have nitrogen retention coefficients of 60 percent and 80 percent, respectively. (MWPS-18, 1985; D. Vanderholm, 1975) A higher coefficient for Free Stall systems is attributed to the fact that cows spend more time in the free stalls, resulting in a greater amount of manure being collected and flushed into the lagoon systems.
>
> Nitrogen (N) loss in recycling ponds is dependent on storage duration and management with a range of losses reported from 30 percent to 80 percent. (J. Meyer/R. Rauschkolb/ E. Olson, 1976; D. Vanderholm, 1975) Nitrogen loss has been determined to be 30 percent for storage duration of <30 days; 40 percent for storage duration of 30-60 days; and 50 percent for storage duration >60 days. Recycled N removal by crops has been determined to typically be 250 lbs. N per acre for a single crop rotation to be 350 lbs. N for a double crop rotation. (California Fertilizer Association, 1995) The Natural Resources Conservation Service (NRCS) allows 425 lbs. of N for a double crop rotation if evidence of maximum yields is provided. However, RWQCB limits AU/ac for total salts to 2,000 lbs./ac/yr. for single crop and 3,000 lbs. for double cropping (for salt production calculations use 1.8 lb/day/1,400 AU, not including N). (Tom Shultz, U.C. Cooperative Extension 1999)

Based on scientific data provided by the University of California Cooperative Extension staff, dairy manure salt guidelines are as follows:

The figures and references are compiled to assist in preparing only guidelines on manure nutrient utilization. Site specific physio-chemical information of soil types and irrigation water, as well as crop production history and proposed cropping patterns, should be supplied to more accurately determine the animal unit capacity in a given dairy permit application. Regardless of which guidelines are used, the correct and accurate labeling of factors in the calculations are essential. The following information is offered to reduce misinterpretations.

Daily elemental form of salts (atomic weight of mineral ÷ atomic weight of the compound containing the mineral i.e., potassium oxide), excluding nitrogenous fractions, equals .926 lbs./1,000 lb. animal unit (AU). Nitrogenous fractions listed are 0.45 lb./1,000 lbs. AU/day total Kjeldahl nitrogen (TKN) that includes 0.08 lb. ammonia nitrogen. (ASAE, 1992)

Conversions: 0.926 x 1.4 (1,400 lb. cow) = 1,296 lbs. elemental salts (without nitrogen) and 0.45 x 1.4 = 0.63 lbs. N fraction for a 1,400 lb. dairy cow AU.

Average total potential salts/1,400 lb. cow daily (excluding nitrate) for typical Chino, San Joaquin Valley and Northern California rations equaled 1.8 lbs. compound form salts and the elemental form salts (without N) equaled 1.296 lbs. Total N was listed at 0.79 lbs./1,400 lb. dairy cow. (Meyer, J. et al, 1973)

Conversions: 1.296 ÷ 1.4 AU = 0.926 lbs. elemental form salts for 1,000 lb. AU. 0.79 lbs. N/1,400 lb. AU ÷ 1.4 = 0.56 lb. N/!,000 AU.

Salts are given as 1.5 lbs./1,000 lb. AU/day in "Fixed Solids" (600°C residue) and 0.45 lb. elemental N. (USDA-SCS [now USDA-NRCS], 1992)

Conversions: 1.5 x 1.4 = 2.1 lb. compound form salts/1,400 lb. AU
0.45 x 1.4 = 0.63 lb. N/1,400 lb. AU

In Merced County the RWQCB uses the chemical element guidelines (ASAE) on a 1,000 lb. AU basis. The RWQCB uses the mineral compound version (UCCE) on a 1,400 lb. AU in Tulare and Kings counties. The above conversions show they are essentially the same, when properly converted into an equivalent basis. However, misinterpretation can result if erroneously quoted or not correctly converted. The mineral compound, i.e., phosphate, oxide, etc., version appears more readily applicable to field situations.

RWQCB, Fresno office, guidelines for manure salts and N uptake by plants from double cropped land are 3,000 lbs. and 425 lbs. respectively/acre/year. The average used for single cropping is 2,000 lbs. compound form salts and 250 lbs. of N/acre/year. These figures are based on 1.8 lbs. 1,400 AU/year of compound

form salts. The figures are derived from UCCE references on salt loading data and N needs from the Western Fertilizer Handbook.

Regardless if nutrient loading is based on ASAE and 1,000 lb. AU or UCCE and 1,400 lb. AU, the acres needed for recycling manure should be similar. Since N can volatilize and in large part salts do not, the first limiting factor will be salts. Subtracting volatilized N will allow two 1,400 lb. AU more /acre than would salts at higher AU/crop acre densities. Higher yields and variable salt uptakes by selective plants may reduce the difference. This could be verified by appropriate tests.

Both the ASAE and NRCS publications state that whenever locally derived values for animal waste are available, this information should be given preference over the more general data in these publications. Also, including phosphorous in local manure salt guidelines restrictions is questioned if adding inorganic fertilizer is needed to meet plant requirements. Proper sampling and replication of testing are needed for justification of any site specific variations. These procedures are outlined in UCCE Dairy Manure Management Series #3.

Table 2.3-1 shows the range of maximum animal units per crop acre based on salt loading with different scenarios based on dairy design, cropping patterns, and solid manure disposal. Table 2.3-2 shows the range of maximum animal units per crop acre based nitrogen content of manure and manure water for different scenarios based on dairy design, cropping patterns, and length of time effluent left in ponds. Tables 2.3-3 and 2.3-4 provide sample calculations for nitrogen content for open corral and free stall designs, respectively.

Table 2.3-1
SALTS LOADING ANIMAL DENSITY

Animal Housing Type	Cropping Program	Solids Discharge Method/Location	Max. AUs per Crop Acre *
Open corral (all)	Double	Off site (100%)	7.61
Open corral (all)	Single	Off site (100%)	5.07
Open corral (all)	Double	On site (100%)	4.56
Open corral (all)	Single	On site (100%)	3.04
Free stall & Open corral	Double	Off site (100%)	5.71
Free stall & Open corral	Single	Off site (100%)	3.80
Free stall & Open corral	Double	On site (100%)	4.56
Free stall & Open corral	Single	On site (100%)	3.04

(*See Above Text for Deviations from Maximum for Salts)

ASSUMPTIONS for Scenarios between Upper and Lower Parameters:

Open Corral-Double Crop-Solids Off-site = 7.61 AU x 1.8 lb. salts/AU x 365 days x 60% retained = 3,000 lbs. salts
Open Corral-Single Crop-Solids Off-site = 5.07 AU x 1.8 lb. salts/AU x 365 days x 60% retained = 2,000 lbs. salts
Open Corral-Double Crop-Solids On-site = 4.56 AU x 1.8 lb. salts/AU x 365 days x 100% retained = 3,000 lbs. salts
Open Corral-Single Crop-Solids On-site = 3.04 AU x 1.8 lb. salts/AU x 365 days x 100% retained = 2,000 lbs. salts

Free Stalls-Double Crop-Solids Off-site = 5.71 AU x 1.8 lb. salts/AU x 365 days x 80% = 3,000 lbs. salts
Free Stalls-Single Crop-Solids Off-site = 3.80 AU x 1.8 lb. salts/AU x 365 days x 80% = 2,000 lbs. salts
Free Stalls-Double Crop-Solids On-site = 4.56 AU x 1.8 lb. salts/AU x 365 days x 100% = 3,000 lbs. salts
Free Stalls-Single Crop-Solids On-site = 3.04 AU x 1.8 lb. salts/AU x 365 days x 100% = 2,000 lbs. salts

Table 2.3-2
Summary of Animal Units Per Crop Acre

Animal Housing Type	Cropping Program	Solids Disposal Method/Location	Maximum A.U.s per crop acre		
			50% [m]	60% [n]	70% [p]
Open Corral (all)	Double	100% off site	9.71	8.13	6.71
	Single	100% off site	6.94	5.78	4.98
	Double	100% on site	5.85	4.85	4.17
	Single	100% on site	4.17	3.47	2.98
Free stall milk cows	Double	100% off site	7.81	6.54	5.59
Dry cows & heifers	Single	100% off site	5.59	4.65	4.00
Open corral	Double	100% on site	5.85	4.85	4.17
	Single	100% on site	4.17	3.47	2.98

[m] Effluent in lagoon 60 days or more
[n] Effluent in lagoon 30 to 60 days
[p] Effluent in lagoon 30 days or less

Table 2.3-3
EXAMPLE: OPEN CORRAL

1	2	3	4	5	6	7	8	9	10	11
Milk Cows	600	X .80	X .50	X .60	X 365	=52560				
Dry Cows	102	X .45	X .50	X .60	X 365	= 5026				
Heifers	582	X .225	X .50	X .60	X 365	=14339				
						71925	X .70			= 50348
						71925		X .60		= 43155
						71925			X .50	= 35963

Double crop	50348/350	= 149 acres	6.71 AU/ac
Solids off site	43155/350	= 123 acres	8.13 AU/ac
	35963/350	= 103 acres	9.71 AU/ac
Single crop	50348/250	= 201 acres	4.98 AU/ac
Solids off site	43155/250	= 173 acres	5.78 AU/ac
	35963/250	= 144 acres	6.94 AU/ac
Double crop	83913/350	= 240 acres	4.17 AU/ac
Solids on site	71925/350	= 206 acres	4.85 AU/ac
	59938/350	= 171 acres	5.85 AU/ac
Single crop	83913/250	= 336 acres	2.98 AU/ac
Solids on site	71925/250	= 288 acres	3.47 AU/ac
	59938/250	= 240 acres	4.17 AU/ac

Column 1	Classification
Column 2	No. of head
Column 3	Lbs. N secreted per head per day
Column 4	% volatization in corral/feed area
Column 5	% of excretion recovered in lagoon
Column 6	days per year
Column 7	Lbs. N into lagoon
Column 8	% N left after denitrification in lagoon up to 30 days
Column 9	% N left after 30 to 60 days in lagoon
Column 10	% N left after 60 or more days in lagoon
Column 11	Lbs. N from the lagoon annually

Table 2.3-4
EXAMPLE: FREESTALL

Milk cows free stall – dry cows & heifers open corral

1	2	3	4	5	6	7	8	9	10	11
Milk Cows	600	X .80	X .50	X .80	X 365	=70080				
Dry Cows & Heifers	102	X .45	X .50	X .60	X 365	=19365				
						89445	X .70			= 62612
						89445		X .60		= 53667
						89445			X .50	= 44723

Double crop	62612/350	= 179 acres	5.59 AU/ac
Solids off site	53667/350	= 153 acres	6.54AU/ac
	44723/350	= 128 acres	7.81 AU/ac
Single crop	62612/250	= 250 acres	4.00 AU/ac
Solids off site	53667/250	= 215 acres	4.65 AU/ac
	44723/250	= 179 acres	5.59 AU/ac
Double crop	83913/350	= 240 acres	4.17 AU/ac
Solids on site	71925/350	= 206 acres	4.85 AU/ac
	59938/350	= 171 acres	5.85 AU/ac
Single crop	83913/250	= 336 acres	2.98 AU/ac
Solids on site	71925/250	= 288 acres	3.47 AU/ac
	59938/250	= 240 acres	4.17 AU/ac

Column 1	Classification
Column 2	No. of head
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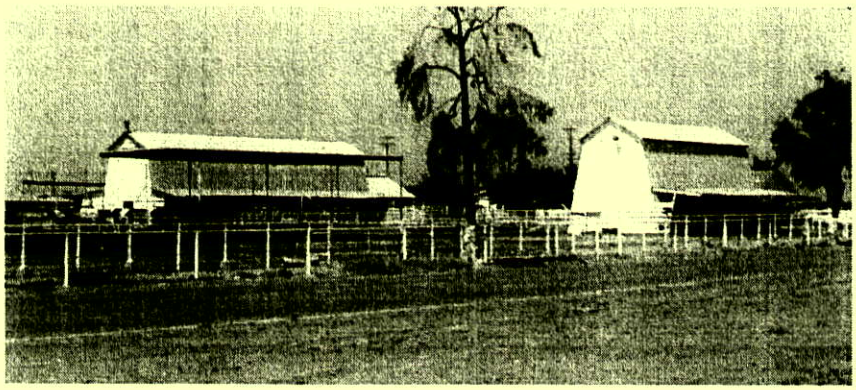
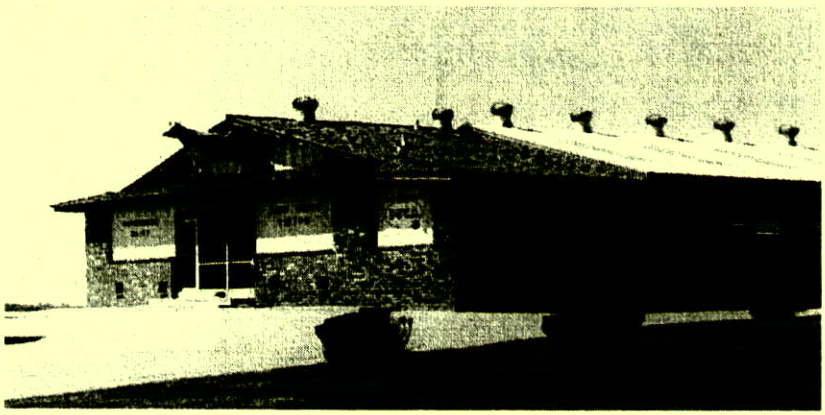
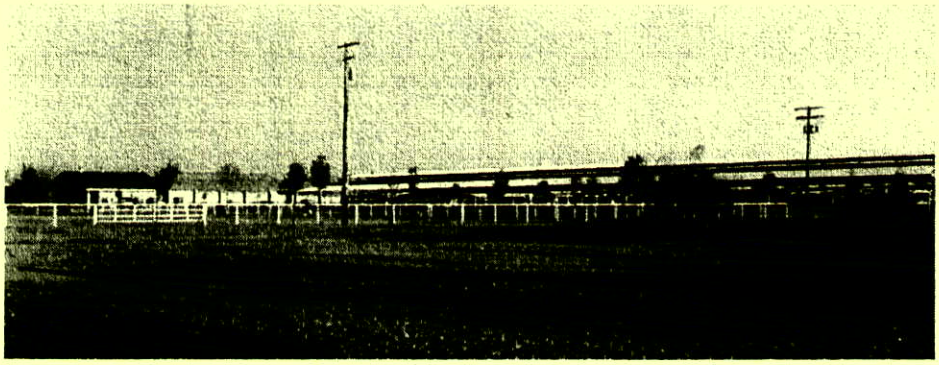
Column 6	days per year
Column 7	Lbs. N into lagoon
Column 8	% N left after denitrification in lagoon up to 30 days
Column 9	% N left after 30 to 60 days in lagoon
Column 10	% N left after 60 or more days in lagoon
Column 11	Lbs. N from the lagoon annually







CHAPTER 3: POLICIES AND STANDARD CONDITIONS

CHAPTER 3
POLICIES AND STANDARD CONDITIONS

The following policies apply to dairies and other bovine animal confinement facilities for which a special use permit is required under the Tulare County Zoning Ordinance. In applying these policies, the following definitions are to be referenced:

Animal Confinement Facility: Where used, the term "animal confinement facility" includes animal barns, corrals, or pens; feed (excluding hay barns) and manure storage and handling areas; and wastewater lagoons/sumps. When measuring setbacks and distances between animal facilities, measurements shall be taken from or between the most proximate part of the above-described facilities. Areas used for crop production or not otherwise utilized in the production of animals shall not be included for purposes of determining said setbacks and distances.

Bovine Animal: Dairy and beef cattle and/or other similar ox-like animals.

Crop Acreage: Irrigable portion of the total/gross subject parcel(s), including wastewater conveyance ditches, that is to be used for wastewater discharge and which excludes buildings, corrals and/or pens, feed and/or manure storage areas, lagoons/sumps, canals, waterways, and public road rights-of-way.

Animal Unit: A common animal denominator, based on feed consumption, whereas one mature cow (1,400 pounds) represents one animal unit, as defined by the Regional Water Quality Control Board. An "Animal Unit" is the feed equivalent of one milk cow, as follows:

Classification	Animal Units per Head
Dairy cows in milk and bulls	1.00
Dry cows and heifers more than two years of age	0.75
Heifers one year to two years (beef or dairy)	0.70
Heifers three months to one year (beef or dairy)	0.40
Calves to three months of age	0.17
Beef cows in milk and feedlot steers	0.75

Animal Units for other animals on site will be calculated according to Regional Water Quality Control requirements.

3.1 LOCATIONAL AND ANIMAL DENSITY POLICIES:

1. A new dairy site shall contain at least 160 acres (gross). Other new animal confinement facility sites shall contain at least 80 acres (gross).

2. The density of animals on a dairy/confined animal raising facility shall be limited to the number whose production of wastes (Nitrogen, salts and other minerals)

can be utilized by the crops grown on site or transported off site for beneficial use in a way that does not create a pollution problem. Each dairy or other animal confinement facility should have its own liquid manure discharge area; if however, sharing of discharge areas is necessary, the combined nutrient loading on the discharge area shall be within the range of parameters for discharge as reflected in the Table shown below. Plans shall be submitted that: (1) demonstrate that liquid manure and solid manure can be evenly distributed over the entire crop acreage; (2) detail the number of acres of cropland, crops to be grown, and amount of doubled cropped acreage; (3) indicate the amount of liquid manure and solid manure to be disposed of off site and the intended use of said manure; and (4) identify any off-site discharge area for recycled lagoon water available through a recorded easement [NOTE: any off-site land proposed for discharge of liquid manure water must be dedicated for such purpose through a recorded easement in a form acceptable to the County]. Ultimately, the number of animals allowed on a project site shall be based on nitrogen and salt loading rates so that onsite wastewater (including precipitation and drainage) and manure are discharged or applied to crop lands at rates of application that are appropriate for the crop, soil, climate, special local situations, management system, and type of waste product. The Regional Water Quality Control Board shall determine the adequacy of loading rate plans to assure the preceding.

The following tables set forth the range of parameters for the maximum allowable Animal Units per Crop Acre for different dairy/animal confinement facility development and operating scenarios (depending on animal housing type and solid wastes disposal method/location) that may be utilized for individual facilities. Salts content in manure and manure water is considered the first limiting factor. Values are based on current RWQCB daily allowance of 1.8 lbs. compound form Salts per 1,400 lb. AU and single and double crop plan uptake of 2,000 and 3,000 lbs. compound Salts respectively per acre yearly.

The Salts Loading Animal Density Table (which generally requires a lower density than the Nitrogen Loading Animal Density Table shown below the Salts Table) will be used to establish the maximum animal units per crop acre for new and expanded dairies and other animal confinement facilities. However, if mitigation measures can be demonstrated to the decision making body (with assistance from the University of California Cooperative Extension and/or the Regional Water Quality Control Board), then deviations from the requirements of the Salts Loading Table can be considered. Such deviations shall be based on a management plan (Salts Loading Report) which demonstrates how a proposed animal facility can avoid salts over-loading of the available crop acreage beyond that shown in the Salts Loading Table. If the decision-making body determines that salts over-loading can be adequately mitigated to avoid salts buildup in groundwater and soils, then the Nitrogen Loading Animal Density Table below can be used to determine the animal confinement facility's maximum animal units per crop acre.

Acceptable salts loading factors could be achieved beyond that listed in the Salts Loading Animal Density Table based on a facility's site specific and operational factors including soil types, irrigation water, crop production history and proposed cropping types and patterns, manure and sludge use and removal, and any accepted technology proposed to further control potential salts loading (refer to Animal Waste Utilization pages 10.1 and 10.2 as cited in Appendix O). These variables are to be documented in a Salts Loading Report to be submitted with applications for use permits for dairy or other animal confinement facilities. Deviations from the Salts Loading Animal Density Table can be permitted by showing that the additional salts generated by an animal facility are being utilized in a beneficial way and/or are being reduced by accepted technology.

SALTS LOADING ANIMAL DENSITY TABLE

Animal Housing Type	Cropping Program	Solids Discharge Method/Location	Max. Anima Units per Crop Acre *
Open corral (all)	Double	Off site (100%)	7.61
Open corral (all)	Single	Off site (100%)	5.07
Open corral (all)	Double	On site (100%)	4.56
Open corral (all)	Single	On site (100%)	3.04
Free stall & Open corral	Double	Off site (100%)	5.71
Free stall & Open corral	Single	Off site (100%)	3.80
Free stall & Open corral	Double	On site (100%)	4.56
Free stall & Open corral	Single	On site (100%)	3.04

(*See Above Text for Deviations from Maximum for Salts)

ASSUMPTIONS for Scenarios between Upper and Lower Parameters:

Open Corral-Double Crop-Solids Off-site = 7.61 AU x 1.8 lb. salts/AU x 365 days x 60% retained = 3,000 lbs. salts
Open Corral-Single Crop-Solids Off-site = 5.07 AU x 1.8 lb. salts/AU x 365 days x 60% retained = 2,000 lbs. salts
Open Corral-Double Crop-Solids On-site = 4.56 AU x 1.8 lb. salts/AU x 365 days x 100% retained = 3,000 lbs. salts
Open Corral-Single Crop-Solids On-site = 3.04 AU x 1.8 lb. salts/AU x 365 days x 100% retained = 2,000 lbs. salts

Free Stalls-Double Crop-Solids Off-site = 5.71 AU x 1.8 lb. salts/AU x 365 days x 80% = 3,000 lbs. salts
Free Stalls-Single Crop-Solids Off-site = 3.80 AU x 1.8 lb. salts/AU x 365 days x 80% = 2,000 lbs. salts
Free Stalls-Double Crop-Solids On-site = 4.56 AU x 1.8 lb. salts/AU x 365 days x 100% = 3,000 lbs. salts
Free Stalls-Single Crop-Solids On-site = 3.04 AU x 1.8 lb. salts/AU x 365 days x 100% = 2,000 lbs. salts

The following table sets forth the range of parameters for the maximum allowable Animal Units (A.U.s) per Crop Acre for different dairy/animal confinement facility development and operating scenarios that may be utilized for individual facilities, based on Nitrogen content in manure and manure water. This table can be used to calculate an animal facility's maximum allowable animal density only if the decision-making body deter-mines that salts overloading can be adequately mitigated as set forth in the preceding provisions of this Policy.

NITROGEN LOADING ANIMAL DENSITY TABLE

Animal Housing Type	Cropping Program♣	Solids Discharge Method/Location	Maximum Animal Units Per Crop Acre		
			50% N♦	60% N♦	70% N♦
Open Corral (all)	Double	Off site (100%)	9.71	8.13	6.71
Open Corral (all)	Single	Off site (100%)	6.94	5.78	4.98
Open Corral (all)	Double	On site (100%)	5.85	4.85	4.17
Open Corral (all)	Single	On site (100%)	4.17	3.47	2.98
Free stall & Open Corral ♥	Double	Off site (100%)	7.81	6.54	5.59
Free stall & Open Corral ♥	Single	Off site (100%)	5.59	4.65	4.00
Free stall & Open Corral ♥	Double	On site (100%)	5.85	4.85	4.17
Free stall & Open Corral ♥	Single	On site (100%)	4.17	3.47	2.98

ASSUMPTIONS for Ratios for Scenarios between Upper and Lower Parameters:

♥Free stall = 60% milk cows and Open corral = 40% support stock♥

♣Double cropping based on 350 pounds of Nitrogen utilized per acre and Single cropping based on 250 pounds of Nitrogen utilized per acre (Double crop = 1.4 x Single crop)♣

♦Percentage of Nitrogen remaining = function of the number of days wastewater has been in the lagoon [>60 days in lagoon = 50% N remains; 30-60 days in lagoon = 60% N remains; <30 days in lagoon = 70% N remains]♦

However, in all cases, the maximum total animal density on the dairy site shall not exceed ten (10) animal units per crop acre, and the maximum density of cows in milk on site shall not exceed eight (8) animal units per crop acre. For confined animal facilities other than dairies, the maximum on-site density shall not exceed ten (10) animal units per crop acre.

3. New dairy and other animal confinement facilities (animal barns, corrals, and pens; wastewater lagoons/sumps; manure and feed storage areas excluding hay barns) shall be located at least one-half mile (2,640 feet) from the nearest dairy, swine, poultry, or other animal confinement facility. These separations are required to avoid potential nuisance problems, disease transmission, soil and groundwater contamination, and air quality degradation.

Expansions of legally-established dairies or other legally established animal confinement facilities that do not meet the one-half mile separation may be permitted provided that any new facilities do not encroach any closer than the

existing facilities. Consideration of such expansions shall be on a case-by-case basis through the special use permit process; however, in no instance shall the degree of nonconformity of the separation encroachment be increased.

4. A new dairy or other animal confinement facility shall not be located as follows:

-- within any Windshed Area for incorporated and unincorporated communities or within the Windsheds for areas zoned for residential use and containing at least thirty (30) legally-established dwelling units (for which the Windshed Area shall be measured from the outermost residential zoning boundary) — a 'Windshed Area' is defined as a one-mile setback from an incorporated or unincorporated community's Urban Area Boundary (however, for those communities that have an Urban Development Boundary but do not have an Urban Area Boundary, the Urban Development Boundary line shall be used) or urban-type residential zoning boundary line;
-- within primary floodplains;
-- within 1000 feet of the boundary of a public park;
-- in sink holes or areas draining into sink holes; or
-- within one-half mile (2640 feet) of school grounds or of the nearest point of a dwelling structure in a concentration of ten (10) or more occupied private residences [to qualify as a 'concentration', such residences must be legally established, occupied, located within a contiguous area, and exceed a density of one dwelling unit per acre, excluding travel trailers]. As used herein, 'legally established' residences are defined as residences "established in accordance with all applicable building and zoning regulations".

[NOTE: The Community Windshed shall not apply where the decision-making body determines that a portion of a community's Urban Area Boundary has been expanded to include municipal uses such as sewage treatment facilities, airports, and waste disposal sites that are located well beyond the city's Urban Development Boundary. In such cases, the decision-making body shall determine the location of the Community Windshed area; however, in no instance shall a Community Windshed setback of less than one mile be allowed from a community's Urban Development Boundary.]

5. A new dairy or other animal confinement facility shall not be located closer than the distances shown on Micro-Windshed Diagram "A" (Residential) to an occupied dwelling owned by a property owner other than the animal confinement facility site owner/operator or employee.

A new dairy or other animal confinement facility shall not be located closer than the distances shown on Micro-Windshed Diagram "B" (Agricultural) to an established citrus grove, vineyard, deciduous fruit/nut orchard, or vegetable agricultural enterprise.

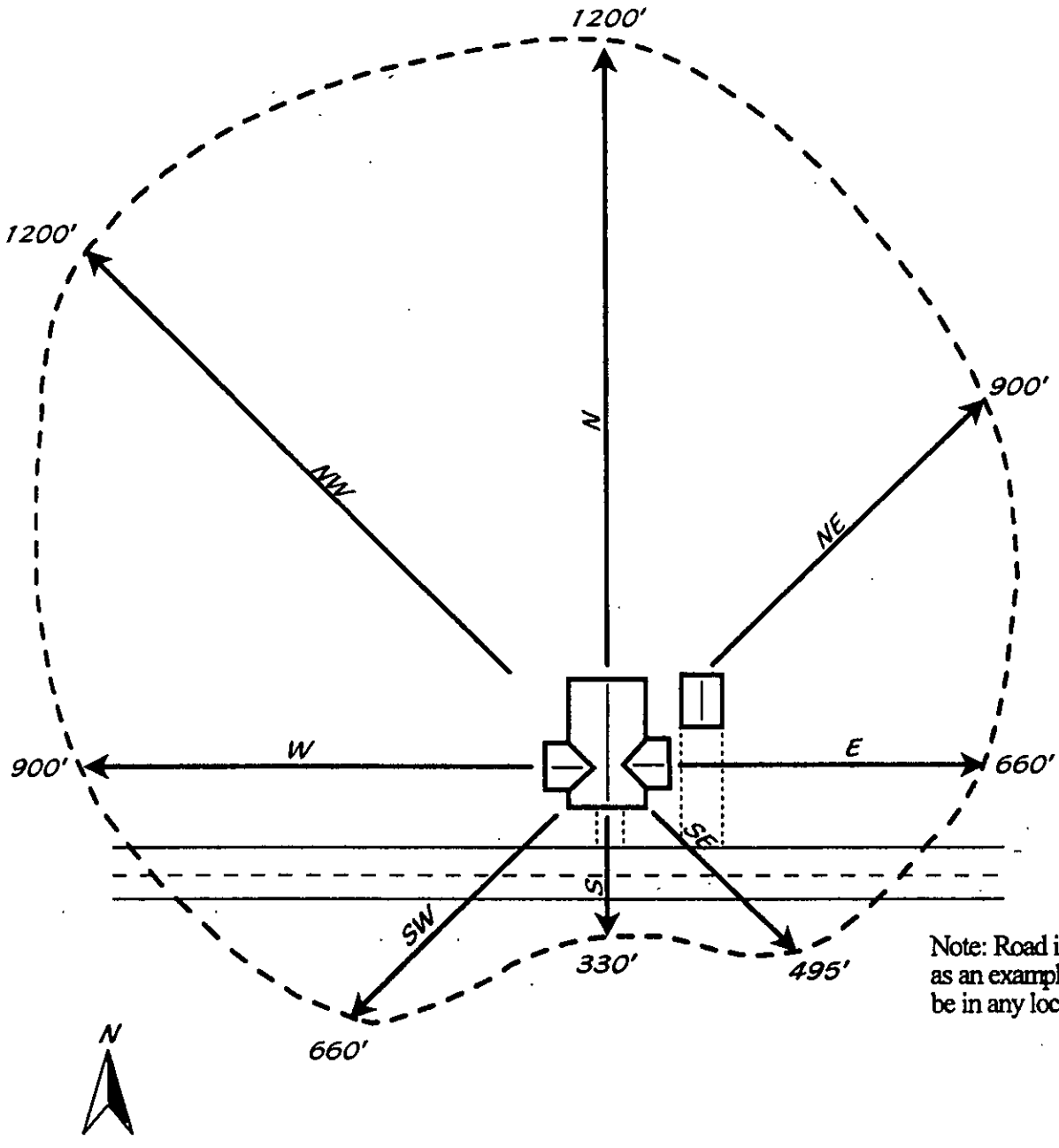
6. These above regulations shall not apply to the repair, maintenance, replacement, and upgrading of a legally-existing dairy or other animal confinement facility, provided that such work does not increase the animal capacity of the facility.

7. Expansions of existing legal nonconforming dairies or other existing legal nonconforming animal confinement facilities that do not meet the policies set forth above will be considered on a case-by-case basis, subject to the Special Use Permit process, provided that the degree of nonconformity is not significantly increased. However, no expansions of existing dairy or other animal confinement facilities shall be approved unless the whole dairy under permit meets the density standards set forth in Policy No. 2 above.

8. Deviations from the animal density standards set forth in Policy No. 2 and the Micro-Windshed criteria in Policy No. 5 above may be allowed on a case-by-case basis provided that (a) The animal facility proposal meets Policies No. 1, 3, and 4 above; and (b) a more detailed environmental review (for example, an EIR) demonstrates that the proposed change(s) from Policy No. 2 and No. 5 will clearly have no environmental effects that cannot be mitigated to a level which is less than significant. However, in no instance shall the maximum total onsite animal density for any dairy or animal confinement facility ever exceed ten (10) animal units per crop acre, nor shall the maximum density of cows in milk onsite ever exceed eight (8) animal units per crop acre.

   In addition, no deviations from the Micro-Windshed distances set forth in Policy No. 5 above (from an offsite residence or from a tree crop or vineyard operation) may be approved unless the owner of the residence or agricultural operation agrees in writing to the deviation.

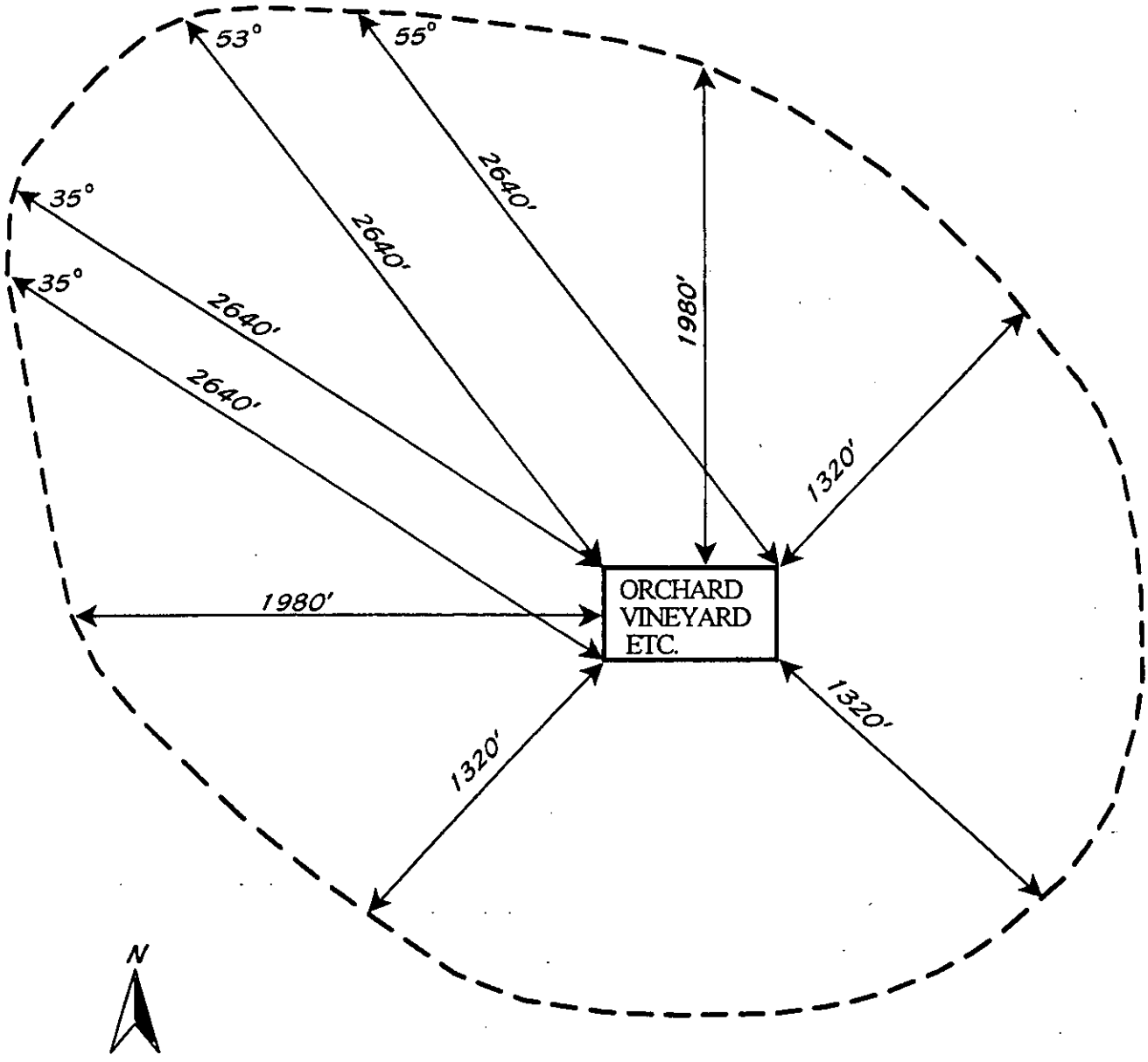
MICRO-WINDSHED DIAGRAM 'A'



Note: Road is shown as an example - could be in any location.

Measurements are to be made from the geometric center of the dwelling to the nearest part of the subject confined animal facility.

MICRO-WINDSHED DIAGRAM 'B'



Measurements are to be made to the nearest edge of the affected orchard/vineyard/etc from the nearest part of the subject confined animal facility.

3.2 COMPLIANCE AND MONITORING POLICIES:

Pursuant to the need for addressing grandfathered facilities as well as establishing a monitoring and enforcement program, the following policies shall apply to all dairies and other animal confinement facilities in the county:

1. An Annual Compliance Report (in a form established by Ordinance) shall be completed and filed with the appropriate County agency for every confined animal facility in Tulare County. [Appendix D to this document contains a proposed Annual Compliance Report.]

2. Compliance inspections shall be conducted on at least 20 percent of dairies each year with priority given to inspecting those dairies that did not submit an Annual Compliance Report, those dairies that exceed their permitted or grandfathered animal density, and other dairies as determined by Ordinance. Every dairy shall be inspected at least once every five years.

3. All dairies shall be subject to Policy No. 2 (re: animal density) of the new "Locational and Animal Density Policies" and shall be brought into compliance with said Animal Density Policy No. 2 within a reasonable period of time as established and implemented by Ordinance. Existing legal nonconforming dairies or other existing legal nonconforming animal confinement facilities that do not meet the other Dairy/Animal Confinement Facility Policies will be considered on a case-by-case basis, subject to the Special Use Permit or equivalent permitting process.

4. A streamlined administrative permitting procedure shall be developed to facilitate the permitting of legal nonconforming or grandfathered animal facilities.

5. The Dairy/Animal Confinement Facility Policies adopted herein shall be reviewed by the Agricultural Advisory Committee or other entity designated by resolution of the Board of Supervisors, every two years, or as needed, to determine if modifications and/or updating are necessary. The Committee or successor shall then forward a written report to the Tulare County Board of Supervisors.

6. An annual report shall be filed by the RMA with the Planning Commission and the Agricultural Advisory Committee which compiles the Annual Compliance Reports required under Policy No. 1 above and the CEQA-required Mitigation Monitoring & Reporting Program adopted for the Program EIR. The primary purpose of the annual report is to address animal facilities' compliance with the Animal Confinement Facilities Plan, to identify problems and proposed solutions (such as new regulations). In addition, the report should disclose any relevant new technology or industrial advancements that could result in the need to revise policies and/or mitigation measures of the ACFP/PEIR.

3.3 STANDARD CONDITIONS OF APPROVAL

Listed below are suggested conditions of approval for applications for Special Use Permits for dairies and other bovine animal confinement facilities. Conditions may be added and/or deleted prior to or during the course of the public hearing on specific applications. (After each, the agencies requiring the condition are listed in parentheses.)

1. The dairy site shall consist of _____ acres (gross). There will be _____ acres available for distribution of nutrient-laden irrigation water discharged from the dairy facility. At least _____ acres will be double cropped annually and _____ acres will be single cropped annually. The permittee shall provide adequate distribution facilities to deliver recycled lagoon water to the crop acreage and shall make all reasonable efforts to apply manure and recycled lagoon water to crop land at rates which are reasonable for the crop, soil, climate, special local situations, management system, and type of manure.

   The total animal units on the dairy site shall not exceed _____. The number of milk cows on site shall be limited to _____ head. [Tulare County Resource Management Agency (RMA)]

   {NOTE: Notwithstanding this condition, which is in conformance with Tulare County's animal density policies, the Regional Water Quality Control Board may limit the dairy operation to a lower maximum herd size than is approved under this Special Use Permit or require other adjustments (such as additional acreage) which could require amendment to the special use permit.}

   Animal units shall be calculated (based on a common denominator of one animal unit equals a 1,400 pound animal) as follows:

1 cow or bull	= 1.00 animal unit
1 heifer or steer (2 years and up)	= 0.75 animal unit
1 heifer or steer (1-2 years)	= 0.70 animal unit
1 heifer or steer (3 months to 1 year)	= 0.40 animal unit
1 calf (up to 3 months)	= 0.17 animal unit

1.A. Cropping patterns and disposal of manure shall be such as to maintain this facility in conformance with the animal density parameters set forth in Policy No. 2 of the Tulare County Dairy/Animal Confinement Facility Policies as adopted pursuant to the Animal Confinement Facilities Plan.

2. The dairy operation is subject to the requirements contained in the California Code of Regulations, Title 27 – pertaining to "Confined Animal Facilities", as administered by the Regional Water Quality Control Board (RWQCB). The applicant shall submit a completed application, technical reports, and any required filing fee to the RWQCB prior to issuance of any building permits and at least 120 days prior to discharge. A copy of the material shall be submitted to the

Code Compliance Coordinator at the time of submittal to RWQCB. Unless good cause is shown, failure to submit the material in the required time may result in immediate notification sent to the RWQCB and a recommendation to the Planning Commission for initiating the process of revocation of this Use Permit. (RWQCB, RMA)

3. Sufficient on-site parking shall be provided for all cars and trucks. The parking area and the entrance roads shall be treated with an acceptable dust-retarding treatment so that dust and mud will not create conditions detrimental to the surrounding area and roads. Said treatment shall be maintained at all times. (RMA)

4. All drive approaches at driveways and major entrances to the improved portion of the site shall be constructed and surfaced as per the Tulare County Improvement Standards, and the applicant or his contractor shall obtain an encroachment permit from the Tulare County Resource Management Agency prior to issuance of any building permits for construction and/or prior to doing work within any County road right-of-way. (RMA)

5. All public road approaches, driveways and off-street parking areas shall be maintained so that mud, dust, gravel, and manure do not create conditions detrimental to the surrounding roadways. (RMA)

6. All grading activities, with the exception of minor grading incidental to driveway approach installation or grading otherwise exempt by Ordinance, shall be confined to areas on the project site which are set back a minimum distance of 100 feet from all adjacent property boundaries, including County road rights-of-way. {NOTE: Such grading within the prescribed 100-foot setback area may be considered agriculturally exempt from permit requirements under the Grading Ordinance.} (RMA)

7. The applicant shall make all arrangements for the relocation of all overhead and underground public utility facilities that interfere with any improvement work to be performed by the applicant. The applicant shall also make arrangements with the public utility company affected for the cost of relocating such facilities and no portion of relocation cost will be paid by the County. (RMA)

8. The facility shall meet the requirements of Division 15 of the Food and Agricultural Code, and Title 3 of the California Code of Regulations as administered by the Tulare County Milk Inspection Service. [Tulare County Environmental Health Division (TCEHD)]

9. The applicant shall provide detailed plans of the facility to the Milk Inspection Service for review and approval prior to issuance of any building permits. (TCEHD)

10. All new wells shall comply with the construction requirements of the Tulare County Well Ordinance. (TCEHD)

11. No well shall be located closer than 100 feet from any animal enclosure, nor shall such enclosure encroach within 100 feet of an existing well. (TCEHD)

12. Inactive wells shall be properly destroyed in accordance with the Tulare County Well Ordinance. (TCEHD)

13. All agricultural wells shall have an overhead air gap at the standpipes. (TCEHD)

14. Lagoons shall meet a minimum 150 foot setback from all wells, public ditches, and public waterways. (TCEHD)

15. Animal confinement areas, manure storage areas, lagoons, and crop lands shall be properly managed to prevent a nuisance of odors, dust, or vector harborage and breeding. (TCEHD)

16. Lagoons shall be designed for maximum efficiency of recycled water disposal. Lagoons shall not be deeper than twenty (20) feet and shall maintain a minimum of ten (10) feet of separation from the highest recorded groundwater table. The lagoons shall not cause pollution of groundwater by meeting soil texture requirements of the RWQCB. Verification of final depth shall be provided by a certified engineer or appropriately licensed contractor to the RMA's Planning Compliance Coordinator, in the form of a written statement, prior to any discharge of any liquid into the lagoon and after a final inspection has been conducted. (TCEHD and RMA)

17. All new sewage disposal systems shall meet all construction standards and minimum setbacks of 100 feet from all wells, ditches, and waterways. (TCEHD)

18. No liquid waste material shall be discharged into any water-way that runs off the dairy site nor shall there be any pollution of same. (TCEHD and RWQCB)

19. Lagoons shall provide capacity to hold 120 days accumulation of liquids. (RWQCB)

20. A surfaced fire apparatus access, twelve (12) feet in width, shall be provided to within five (5) feet of the fresh water holding tank and the water pressure tank. (Fire Warden)

21. A 30 inch by 30 inch hinged inspection cover shall be located on the fresh water holding tank. The inspection cover shall be located along the portion of the tank that fronts on the surfaced access. (Fire Warden)

22. The fresh water pressure tank shall be plumbed with a valved, 2-1/2 inch hose connection (National Hose Thread) in such a manner as to provide ready access for pumper connection. All plumbing from the tank to the valve shall be a minimum of 4 inches O.D. (Fire Warden)

23. Portable fire extinguishers shall be installed in the milk house as per N.F.P.A. Pamphlet #10 (10# ABC type). (Fire Warden)

24. Advisory Note: All activities associated with this dairy operation must comply with the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) Rules and Regulations, including Regulation VIII Fugitive Dust Rules, pertaining to construction, unpaved roads and open service areas, and other aspects of the dairy operation which may be addressed, now or in the future, by such Rules and Regulations. (APCD)

25. All agricultural burning shall comply with the SJVUAPCD Rules and Regulations. (SJVUAPCD)

26. No portion of the _____ acres covered by this application, or any easement required by this permit, shall be sold, released or conveyed, or used for purposes other than those expressly permitted under this use permit unless an amendment to the use permit is approved by the County. This shall not restrict the sale of the entire parcel of property as a unit subject to all of the conditions required herein. In addition, if there is any change in the area available for recycled water disposal, the applicant shall immediately notify the Planning Director to advise of the change and, if determined necessary by the Director, apply for an amendment to the use permit. (RMA)

27. Dead animals shall be removed from the site within 48 hours and shall not be visible from the public road while awaiting removal. (TCEHD and RMA)

28. A fly abatement program shall be used to keep flies under control on site so that they do not become a nuisance on site or to surrounding property owners. (RMA)

29. The dairy operation shall meet all of the requirements of the {mosquito abatement district} for design and maintenance. (See Attached requirements for construction and management of dairy wastewater systems in order to accomplish mosquito control.)

30. Should any additional residences or mobilehomes be constructed or installed, all densities and setbacks (separations from animal confinement and waste facilities, etc.) shall be in compliance with the AE-___ Zone. (Tulare County Ordinance)

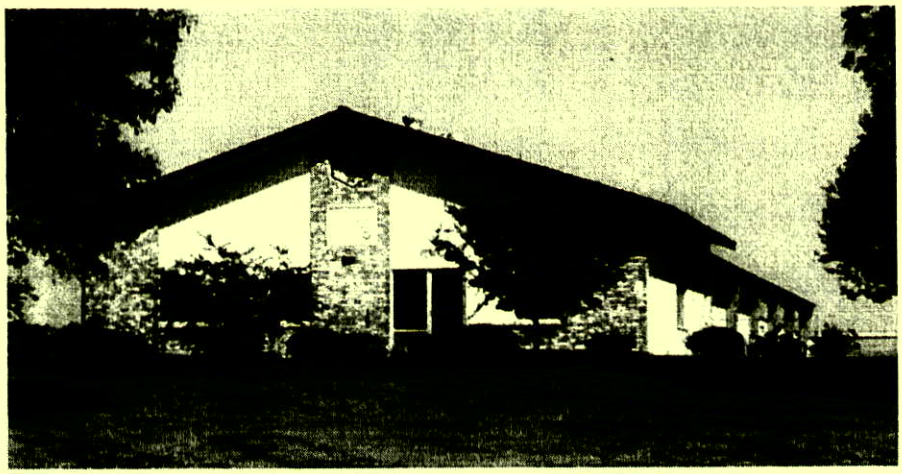
31. If more than five (5) unrelated employees are housed on the site, the dairy operator shall contact the Resource Management Agency to determine if a Permit to Operate Employee Housing is required by Section 7-23-1000 et seq. of the

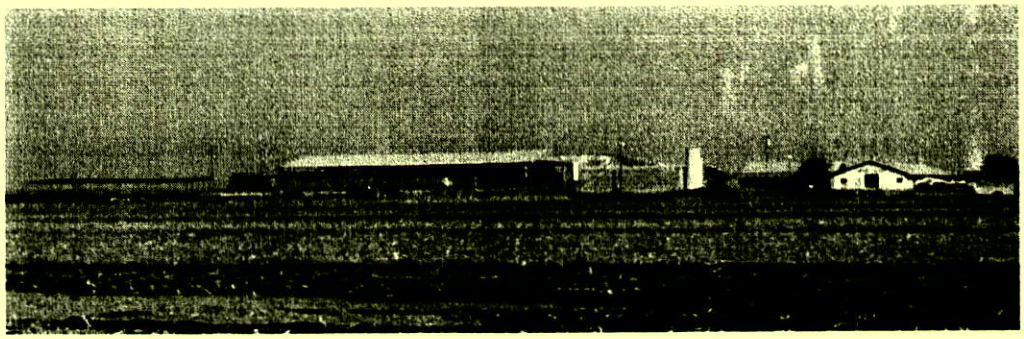
Tulare County Ordinance Code and, if required, obtain such permit prior to occupancy.

32. The applicant shall file a Right to Farm Notice in accordance with Section 7-29-1070(a) of the Ordinance Code.

33. Buildings housing dairy animals, corrals, sump pits, and silage and haylage storage areas for a new dairy shall not be located closer than 100 feet from all property lines at the perimeter of the new dairy site.

34. Standardized conditions as set forth in Planning Commission Resolution No. 5976, as amended by Resolution Nos. 6013, 6334, and 6702, shall apply to this application. (See Attachment) (RMA)





CHAPTER 4: DRAFT PROGRAM EIR

According to Section 15132 of the State Guidelines, the final EIR shall consist of:

(a) The draft EIR or a revision of the draft.
(b) Comments and recommendations received on the draft EIR either verbatim or summary.
(c) A list of persons, organizations, and public agencies commenting on the draft EIR.
(d) The responses of the Lead Agency to significant environmental points raised in the review and consultation process.
(e) Any other information added by the Lead Agency.

The organization of this Final PEIR includes the Draft PEIR followed by the Response to Comments (which includes an introduction to the document, a list of public agencies, organizations and persons commenting on the Draft, the comment letters, and the responses to comments). Changes or additions to the draft are reflected by a vertical line in the right margins. Two appendices (Appendix R and Appendix S) have also been added.

PREFACE

This Draft EIR is prepared as a "Program EIR" to identify potential environmental impacts associated with the adoption of Phase I of the Animal Confinement Facilities Plan (ACFP) of the Tulare County General Plan and subsequent development of dairies and other bovine confinement facilities located on the Valley floor within Tulare County. Because the nature of the primary action under consideration at this time is the adoption of a policy document, the discussion of impacts and suggested mitigation measures is "generalized" to address issues typically associated with the development and operation of dairies and other bovine animal confinement facilities. At the time a specific project is proposed, a review of site specific issues will be conducted utilizing a supplemental environmental questionnaire/checklist. A draft supplemental questionnaire is included in this document as Appendix Q. Completion of the supplemental questionnaire will not only allow for evaluation of potential impacts on a site specific basis but will also provide for incorporation of appropriate mitigation measures into individual projects specific to the situation.

A project is defined by Section 15378 of the State CEQA Guidelines as the "whole of an action". It is acknowledged that the policy document under consideration is the first phase of a proposed policy program that will address all types of animal raising operations located in Tulare County. Phasing of the policy program is a function of funding and addressing current concerns. It is not intended, in any way, to "piecemeal" the project in terms of environmental review. It is noted that animal raising operations for non-bovine animals can be considered related activities and it is anticipated that other types of animal raising operations may, in fact, have similar environmental impacts to those identified for bovine operations. However, until policies are developed that address those types of facilities and adequate documentation is available to support those policies, analysis would be speculative. Prior to adoption of subsequent phases of the ACFP, appropriate environmental evaluation will be conducted.

4.0 EXECUTIVE SUMMARY

INTRODUCTION

Section 15123 of the CEQA Guidelines provides that an EIR shall contain a brief summary of the proposed actions and its consequences. The summary shall identify: each significant effect with proposed mitigation measures and alternatives that would reduce or avoid that effect; areas of controversy known to the Lead Agency; and issues to be resolved including the choice among alternatives and whether or how to mitigate the significant effects.

PROJECT DESCRIPTION

General Plan Amendment No. GPA 99-05 involves the adoption of Phase I of the Animal Confinement Facilities Plan (ACFP) of the Environmental Resources Management Element of the Tulare County General Plan. The purpose of Phase I of the ACFP is to establish and adopt policies and standards specially addressing the location and development of dairies and other bovine animal confinement operations in the county.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

The impacts and proposed mitigation measures associated with the adoption of the ACFP and subsequent development of dairies and other bovine animal confinement operations are summarized in Table 4.

POTENTIAL AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

Potential environmental impacts associated with implementation of the ACFP and subsequent dairy development were identified for the following areas through the NOP process:

- Ground and surface water contamination
- Degradation of air quality
- Loss of natural habitat
- Road construction and maintenance
- Potential health hazards related to vector breeding and control
- Land use conflicts
- Cumulative Impacts

ALTERNATIVES

An evaluation of feasible alternatives to the project is provided pursuant to Section 15126.6 of the CEQA Guidelines. The following alternatives were evaluated:

- No project
- Adoption of the ACFP with inclusion of a policy that the addition of any new dairy or other bovine animal confinement facility shall not cause the maximum number of animals within a one-mile radius to exceed 4 animal units per gross acre.
- Adoption of the ACFP with a maximum allowable number of bovines countywide not to exceed 4 animal units per gross acre.

TABLE 4
SUMMARY OF POTENTIAL IMPACTS AND PROPOSED MITIGATION MEASURES

IMPACT NUMBER	IMPACT	MITIGATION NUMBER	MITIGATION MEASURE	LEVEL OF SIGNIFICANCE AFTER MITIGATION
4.3.1-1	Soil contamination and degradation of groundwater quality.	4.3.1-1	Application of dry or liquid nutrient matter at acceptable agronomic rates.	Less than significant
		4.3.1-2	Design and construct wastewater holding ponds in accordance with Title 27 of the California Code of Regulations.	
		4.3.1-5	Submittal of a Comprehensive Nutrient Management Plan (CNMP).	
		4.3.1-6	Submittal of an Annual Compliance Report.	
		4.3.1-7	Submittal of geo/hydro report.	
		4.3.1-8	Based on results of geo/hydro report (#4.3.1-7), install wells to monitor nitrate and salt levels and if necessary, prepare a groundwater monitoring plan.	

IMPACT NUMBER	IMPACT	MITIGATION NUMBER	MITIGATION MEASURE	LEVEL OF SIGNIFICANCE AFTER MITIGATION
4.3.1-2	Degradation of surface water quality.	4.3.1-3	Design and construct storage ponds to accommodate 120 days accumulation plus 25-year storm.	Less than significant
		4.3.1-4	Issuance of a NPDES Permit.	
		4.3.1-5	See above	
		4.3.1-6	See above	
4.3.1-3	Exposure of people or property to water related hazards such as flooding or inundation.	4.3.1-1	See above	Less than significant
		4.3.1-3	See above	
4.3.1-4	Depletion of water resources.		N/A	N/A
4.3.2-1	Increased traffic generation	4.3.2-1	Construction of impacted roads to engineered standards; abandonment of public road(s) & applicant maintaining road(s) to a standard that minimizes mud and dust.	Less than significant
4.3.2-2	Accelerated physical deterioration of public and/or private roads.	4.3.2-1	See above	Less than significant
		4.3.2-2	Establishment of a traffic impact fee program.	
		4.3.2-3	Prohibit new facilities in areas where existing roads cannot handle additional traffic.	
		4.3.2-4	County should seek funding from other sources for construction & maintenance of farm-to-market roads.	

IMPACT NUMBER	IMPACT	MITIGATION NUMBER	MITIGATION MEASURE	LEVEL OF SIGNIFICANCE AFTER MITIGATION
4.3.3-1	Generation of emissions from construction activities	4.3.3-1	Implementation of SJVAPCD Regulation VIII and Enhanced and Additional Control Measures	Less than significant
4.3.3-2	Increase in exhaust emissions (ROG, NO_x, CO) from operational equipment.	4.3.3-1	See above	Less than significant
4.3.3-3	Increase in secondary pollutants (ROG, hydrogen sulfide, ammonia, etc.).	4.3.3-3	See above	Significant, unavoidable, cumulative
4.3.3-4	Increase in methane emissions.		None available	Significant, unavoidable, cumulative
4.3.3-5	Increase in fugitive dust emissions.	4.3.3-1	See above	Significant, unavoidable, cumulative
4.3.3-6	Exposure of sensitive receptors to substantial pollutant concentrations.		None required	Less than significant
4.3.4-1	Loss and/or degradation of habitat.	4.3.4-1	Conducting biological surveys for sensitive areas and incorporation into the design of species specific mitigation.	Potentially significant
4.3.4-2	Loss and/or degradation of vernal pools and other wetlands.	4.3.4-1	See above	Potentially significant
4.3.4-3	Loss and/or degradation of riparian habitat.	4.3.4-1	See above	Potentially significant
4.3.4-4	Injury or mortality to listed species.	4.3.4-1	See above	Potentially significant

IMPACT NUMBER	IMPACT	MITIGATION NUMBER	MITIGATION MEASURE	LEVEL OF SIGNIFICANCE AFTER MITIGATION
4.3.4-5	Interference with activities of nocturnal wildlife.	4.3.4-2	Project-related lighting shall be minimized and directed away from sensitive areas.	Less than significant
4.3.5-1	Conversion of farmland.		None required	Less than significant
4.3.5-2	Conflict with zoning regulations, Williamson Act or land use plans or policies.		None required	Less than significant
4.3.5-3	Potential land use conflicts.	4.3.5-1	Adoption of ACFP policies.	Less than significant
		4.3.5-2	Elimination of dairies and other animal confinement facilities from the list of "special uses" for the A-1, AE, AE-20 and AE-80 zones.	
4.3.6-1	Increase health hazard from flies and gnats.	4.3.6-1	Implementation of management guidelines.	Less than significant
4.3.6-2	Increase hazard from mosquitoes.	4.3.6-2	Implementation of management guidelines.	Less than significant
		4.3.6-3	Implementation of management guidelines.	
4.3.7-1	Disturbance or destruction of unidentified historical or archaeological resources.	4.3.7-1	If construction activities reveals presence of cultural resources, work shall cease and appropriate measures taken.	Less than significant

4.1 INTRODUCTION

4.1.1 PROPOSED ACTION

The proposed action for which this Environmental Impact Report (EIR) has been prepared is the amendment of the Environmental Resources Management Element (ERME) of the Tulare County General Plan by adopting an Animal Confinement Facilities Plan (ACFP). The ACFP contains policies and standards that address confined animal operations and associated environmental issues. Specifically addressed in Phase I of the ACFP are policies and standards for dairies and other bovine animal confinement operations.

4.1.2 PURPOSE OF THE EIR

The California Environmental Quality Act (CEQA) requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects. Section 15121(a) of the Guidelines for the Implementation of the California Environmental Quality Act (State CEQA Guidelines) defines an EIR as an informational document that will:

> ...inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.

Section 15121(b) further states that the information contained in the EIR does not control the agency's ultimate discretion on the project, however, the agency must respond to each significant effect identified in the EIR, substantiated through of adoption of specific findings.

As defined by Section 15378 of the State CEQA Guidelines, a "project" is "...the whole of an action which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment..." A project may include an activity directly undertaken by any public agency including the adoption and amendment of local General Plans or elements thereof.

Section 15146 of the State CEQA Guidelines states that "the degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR". Subsection (b) further states that "an EIR on a project such as the adoption or amendment of a comprehensive zoning ordinance or a local general plan should focus on the secondary effects that can be expected to follow from the adoption or amendment, but the EIR need not be as detailed as an EIR on the specific construction projects that might follow".

It is intended that this EIR be used as a Program EIR. Section 15168 of the State CEQA Guidelines described a Program EIR as an EIR prepared on a series of actions that can be characterized as one large project and are related. (Reference Appendix E for an excerpt from the CEQA Guidelines regarding Program EIRs.) The actions may be: related geographically; a logical part in the chain of contemplated actions; connected with the issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways. A Program EIR can then be used to evaluate subsequent related projects by providing the basis for an Initial Study to determine whether the later activities may have any significant effects and allowing subsequent environmental documents to focus on new specific effects which are unique or site specific.

4.1.3 PROCEDURES

A Notice of Preparation (NOP) for this EIR was distributed by the Tulare County Resource Management Agency in April 1999, pursuant to Section 15082 of the State CEQA Guidelines. The NOP included an Initial Study prepared for the Animal Confinement Facilities Plan that identified potential environmental impacts associated with its implementation. The NOP/Initial Study and agency responses are included within this EIR as Appendix F.

CEQA requires a public review period for commenting on the draft EIR. Under Section 15105 of the Guidelines, the public review period shall not be less than 30 days nor more than 60 days. If the EIR is submitted to the State Clearinghouse, the public review period shall not be less than 45 days unless a shorter period is approved by the Clearinghouse.

The review period for this Draft EIR will be 45 days, beginning with the circulation of the document to all responsible, trustee, or other interested State, federal and local agencies, and anyone else who requests to review it. During the review period, any agency, group or individual may comment in writing on the Draft EIR, and the Lead Agency (Tulare County) must respond to each comment on environmental issues in the Final EIR. CEQA does not require formal hearings at any stage of the environmental review process (Section 15202 of the Guidelines), but many agencies hold public hearings on Draft EIRs during the public review period, at which oral testimony is received from the public. In the case of this Draft PEIR, a public hearing will be held before the Tulare County Planning Commission to receive comments.

The CEQA process requires that the lead agency seriously consider input from other interested agencies, citizen groups and individuals. CEQA provides for a public process requiring full disclosure of the expected environmental consequences of the proposed action. The public must be given a meaningful opportunity to comment. CEQA also requires monitoring to ensure that adopted mitigation measures are carried out.

Government Code Section 65358(a) states that the legislative body may amend an adopted general plan if it deems it to be in the public interest to do so. Amendment of the general plan is a legislative action that requires public hearings before the planning commission and legislative body (Government Code Section 65353 et seq.). After noticing and holding its public hearing, the Tulare County Planning Commission will make a written recommendation on the amendment and forward that recommendation to the Tulare County Board of Supervisors. The Board may then take an action to approve, modify or disapprove the recommendation of the Planning Commission.

4.1.4 SCOPE OF THE EIR

This Program EIR has been prepared in accordance with CEQA, the State Guidelines for the Implementation of the California Environmental Quality Act (California Administrative Code, Title 14, Chapter 3) and County of Tulare CEQA Guidelines. Based on the Initial Study and comments received on the NOP, the following issues were determined to be potentially significant and are evaluated in this EIR:

- GEOLOGY/HYDROLOGY/WATER QUALITY, addressing the potential for contamination of soil and groundwater due to leaching of nutrients, salts and other minerals from animal wastes disposed on cropland, from build-up of manure in the corrals, and from retention ponds; and the potential for degradation of surface water from erosion or discharge.

- TRAFFIC/CIRCULATION, addressing the increase of truck traffic in areas where roadways are not constructed to engineered standards, resulting in a decrease in the service life of area roads.

- AIR QUALITY, addressing the potential impact on air quality from the generation of dust, odors and gases.

- BIOLOGICAL RESOURCES, addressing the potential for the loss and/or degradation of habitat, vernal pools and other wetlands, and/or riparian habitat; interference with animal movement/migration patterns; injury or mortality to listed species; and interference with activities of nocturnal wildlife.

- AGRICULTURE, addressing the potential for the reduction of producing cropland.

- LAND USE AND PLANNING, addressing potential land use conflicts between dairies and sensitive cropland or urban/suburban uses.

- HAZARDS, addressing the potential for creating health hazards from animal confinement operations.

- CULTURAL RESOURCES, addressing any potential impacts on archaeological and historical resources.

4.1.5 ORGANIZATION OF THE EIR

Section 4.2 of the EIR describes the project in greater detail and discusses the project objectives. Section 4.3 describes specific characteristics of the environmental setting, organized within the framework of the topical areas of focus prescribed in response to the NOP. Section 4.3 also identifies and discusses potentially significant impacts on aspects of the environment and sets forth mitigation measures for these impacts, as appropriate. The evaluation of impacts has been organized in the following manner:

Setting: A description of the baseline environment that may be affected by the project, by topic. This topic may also include a discussion of the regulatory environment that may be applicable to the project.

Impacts: Impact Evaluation Criteria: The standard by which impacts are measured or threshold, with the objective of determining if an impact will be significant.

Impact #: Each impact associated with a subject area will be listed by number for future reference.

Conclusion: Statement on whether the impact is significant or less than significant; if found to be significant, a determination of whether or not the impact can be avoided or reduced to an acceptable level through the implementation of mitigation measures, or if the impact is unmitigable, unavoidable and/or irreversible.

Mitigation Measures: Each mitigation measure will be listed by number for future reference and will state to which impact or impacts (by number) the recommendation applies.

Effectiveness of Measure: Statement whether or not the recommended measures will reduce the impact below the level of significance based on the Impact Evaluation Criteria.

Implementation/Monitoring: Statement of how the measure will be implemented and monitored. An expanded Mitigation Monitoring and Reporting Program will appear as an appendix to the Final EIR.

Section 4.4 addresses mandatory CEQA sections including cumulative impacts, significant environmental effects which cannot be avoided if the project is implemented, significant irreversible environmental changes, growth-inducing impacts, and effects found not to be significant. The last section of the EIR, Section 4.5, evaluates alternatives to the proposed project. The proposed project is compared to each alternative, and the

environmental ramifications of each are analyzed. Several appendices have been included to facilitate full environmental review of the proposed project.

4.2 PROJECT DESCRIPTION

4.2.1 PROJECT LOCATION

Tulare County lies in the southern half and on the east side of the San Joaquin Valley, the great central valley of California, which is bounded on three sides by mountains – the Coast Range to the west and the Sierra Nevadas to the east and south. (Reference Figure 4-1) The county itself covers approximately 4,863 square miles and encompasses 3,112,320 acres. Federal and State owned lands comprise approximately 51 percent of the county area.

As shown on Figure 4-2, the county is divided into three distinct geographic planning areas: mountains, foothills and the Valley floor. The Valley floor covers the western approximate one-third of the county, encompassing lands generally below 600 feet in elevation. The portion of the county referenced as the Valley floor comprises the project boundary for Phase I of the ACFP.

4.2.2 PROJECT DESCRIPTION AND OBJECTIVES

General Plan Amendment No. GPA 99-05 involves the adoption of Phase I of the Animal Confinement Facilities Plan (ACFP) of the Environmental Resources Management Element of the Tulare County General Plan. The Draft ACFP is attached to this Draft EIR and is incorporated herein by reference. Refer to the ACFP for a complete overview of the project's description and objectives. Generally speaking, the purpose of Phase I of the AFCP is to establish and adopt policies and standards specifically addressing the location and development of dairies and other bovine animal confinement operations.

4.2.3 PROJECT AREA CHARACTERISTICS

As noted above, the Project Area includes land below the 600 foot elevation encompassing the Valley floor area of the county (933,649 acres). Valley lands are generally level with gentle to rolling slopes along the margins. There are eight incorporated cities and approximately fifty smaller communities ranging from small rural service centers to larger unincorporated communities serving populations from 2,000 to 6,000 persons. Growth boundaries {Urban Development Boundaries (UDBs) and Urban Improvement Areas (UIAs)} have been adopted for the cities and larger unincorporated communities. Outside these boundaries, land is designated for agricultural use under the Rural Valley Lands Plan. (Reference Figure 4-3) Table 4.2.3-1 shows approximate acreage breakdown by land use type.

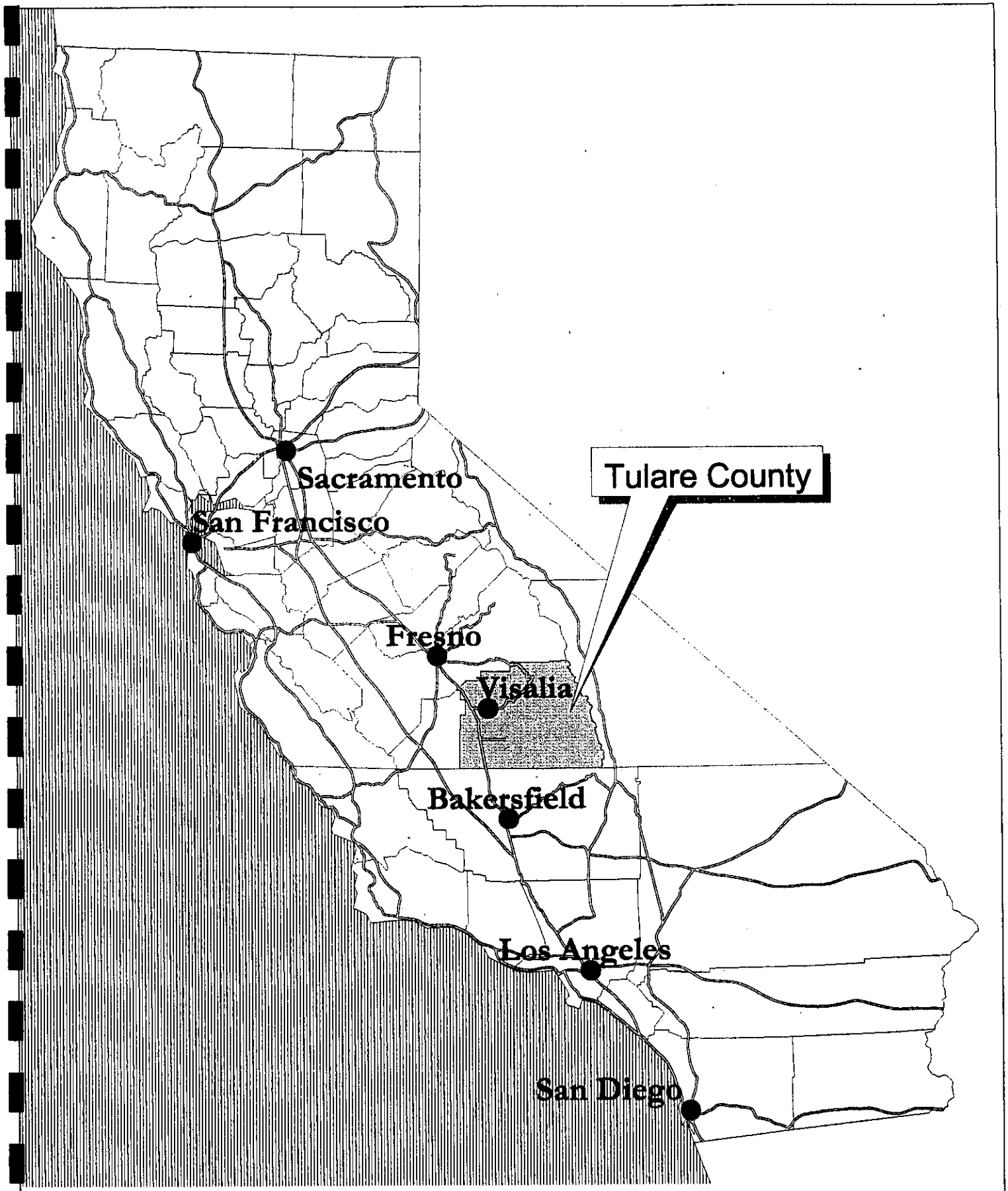


Figure 4-1

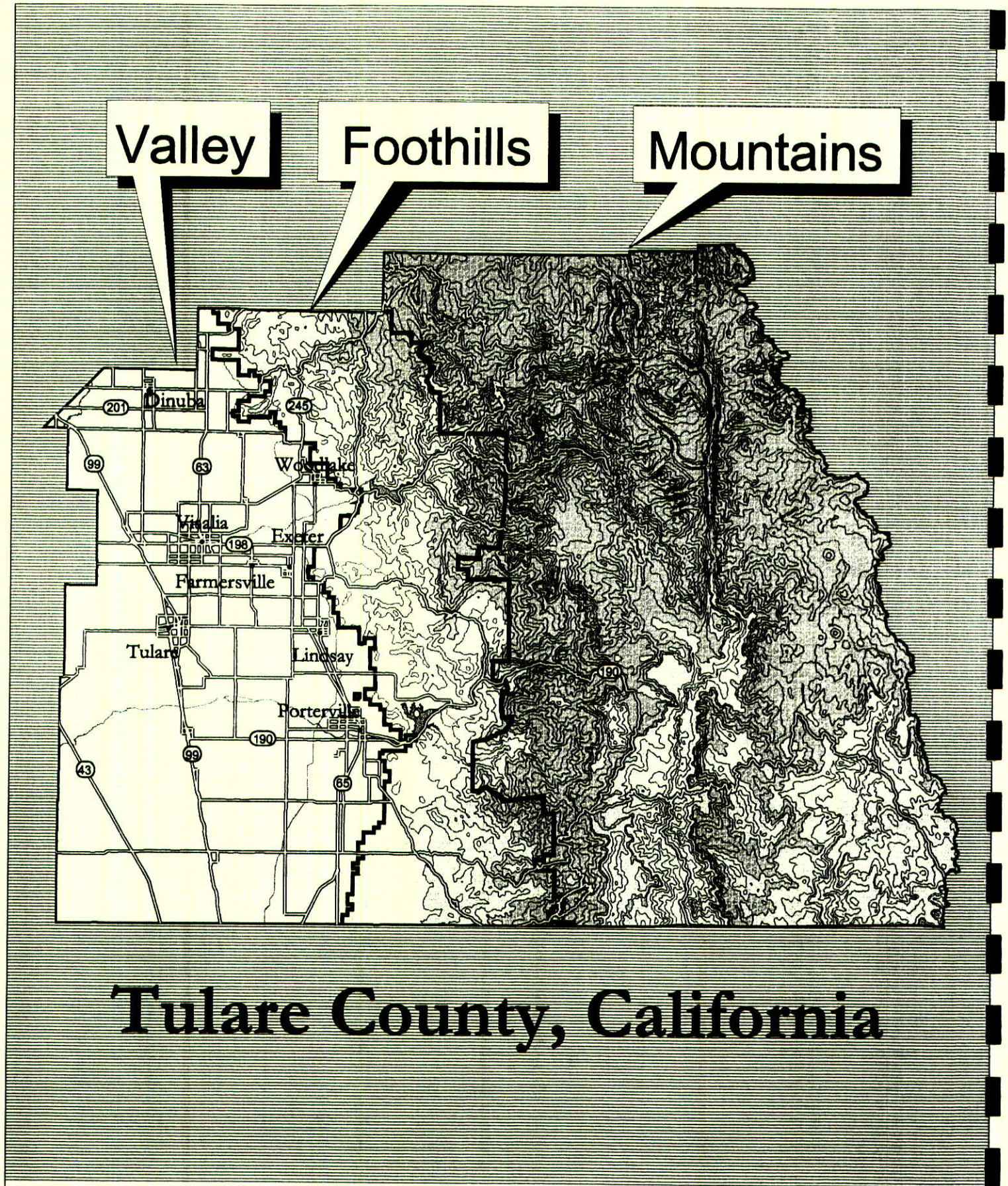
Project Vicinity

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

25 0 25 50 75 100 Miles

N W E S



Tulare County, California

Figure 4-2

Project Location

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

6 0 6 12 Miles

N W E S

TABLE 4.2.3-1
GENERALIZED LAND USE for the VALLEY FLOOR

LAND USE	ACREAGE
URBAN (land within UDBs or UIAs)	138,131
PUBLIC LANDS (outside UDBs or UIAs)	32,374
NON PUBLIC NATIVE	56,143
CROPLAND (Includes orchards, vineyards and field crops)*	580,500
DAIRIES**	111,385
FEEDLOTS, SWINE & POULTRY**	15,116
TOTAL Acreage within Project Area	933,649

*May include field crop area utilized for dairy disposal
**Includes total acreage (improved and cropland) based on use permit files and survey information on grandfathered facilities where available.

Figure 4-4 shows the applicable zoning for the area outside the UDBs/UIAs. Dairies and feedlots when more than 25 cows are on the property are permitted in the AE, AE-20, AE-40, AE-80 and A-1 zones, subject to the granting of a Special Use Permit. Table 1.3.3-1, located on page 11, provides a summary of special use permits processed for dairies since 1973 (when the use permit requirement took effect).

The University of California Cooperative Extension compiles a "Master Dairy List" annually reflecting dairy and herd sizes based on information received from the Tulare County Milk Inspection Program. The list is prepared in January and reflects the totals for the previous year. The 1999 Master Dairy List indicated that there were a total of 291 dairies in the county with 265,302 milking cows and 312,340 total cows in herds for 1998. The list also provides the following information on herd size:

Cow Herd Size	Herds	Percent
0 - 199	14	5
200 - 399	38	13
400 - 599	33	11
600 - 799	40	14
800 - 999	40	14
1000 - 1499	59	20
1500 - 1999	33	11
2000 – 2499	17	6
2500+	17	6
Average = 1073	Total = 291	100

Special Use Permits for dairies when more than 25 cows are on the property have been required since October 5, 1972. Dairies that were in operation prior to this date are permitted to continue under a "legal nonconforming" status at the level of operation existing in 1973 (as reflected on the January, 1973 Master Dairy List). Any expansion of

these "grandfathered" facilities requires approval of a use permit to bring the facility into compliance. Approximately one-third of the dairies currently in operation are considered "grandfathered" facilities.

Since 1974, when the Tulare County Planning Commission adopted the policies and standards contained in the proposed Animal Waste Management Element, limitations on the number of animals approved through the use permit process were expressed in "animal units" rather than numbers of animals. In many cases, the numbers approved under specific use permits reflect the maximum number of animal units allowed for the designated acreage, pursuant to the policies and standards applicable at the time of approval.

Table 4.2.3-2 below provides an overview of acreage and animal units of existing dairies, both permitted and grandfathered, as well as facilities that have been approved but not yet built and facilities for which applications were pending as of the date of completion of the NOP process (April 30, 1999). For permitted facilities, data included is based on application case files. For grandfathered facilities, data was compiled from a survey conducted by RMA staff, mailed to nonconforming operations in 1998. For the nonconforming operations where no response to the survey was received, information from the Tulare County Assessor's Office, aerial photos and field checks were utilized.

TABLE 4.2.3-2
Tulare County Dairies

Dairy Type	Total #. of Animal Units	# of Milk Stock (AUs)	Gross Acreage	Improved Area (in acs.)	Net Acreage (cropland)
Special Use Permit in operation	441,105	271,449	63,810	9,572	56,388
Grandfathered facilities	34,184	28,921	16,077	2,412*	13,951
Special Use Permit approved but facility not yet built or built but not in operation	74,503	47,936	12,931	1,471	10,901
Pending Applications	78,328	58,105	11,082	1,662	7,903
Total	628,120	406,411	103,900	15,117	88,783

*Based on average of 15% of total area devoted to improvements.

Utilizing the numbers shown in Table 4.2.3-2, the overall average of cows in milk within the Project Area is calculated to be 4.58 AU/AC per net crop acre and 3.9 AU/AC per gross acre. The overall average of total animals units per net crop acre within the Project Area is 7.07 AU/AC and 6.05 AU/AC per gross acre.

Figure 4-5 shows land encumbered by existing dairies, both permitted and grandfathered, dairies approved but not yet built or under construction, and pending facilities for which applications are being processed by RMA. A comparison of Figure 4-5 and the zoning map (Figure 4-4) indicates that the majority of existing facilities are located in the AE-40 zoned areas. Although dairies are also permitted in the AE-20 and AE-80 zones, the majority of lands zoned AE-20 are dedicated to orchards and vineyards. AE-80 zoned areas generally contain either native lands or soils with other restrictions (reference Section 4.3.1 of this EIR for further discussion of soil and groundwater restrictions).

To provide a complete picture of the location of and amount of land encumbered by dairies and other animal confinement facilities a number of illustrations have been provided. Figure 4-6 reflects the location of dairy sites approved but not yet built and dairy sites approved and under construction but not in operation as of the date of the NOP. Figure 4-7 shows the location of dairy sites with applications pending with the Tulare County Resource Management Agency as of the date of the NOP. Figure 4-8 shows the locations of bovine feedlots and Figure 4-9 reflects the location of swine and poultry facilities in the county. Finally, Figure 4-10 compiles all this information to provide an overview of all lands encumbered by animal operations.

Figure 4-11 shows an estimate of lands available for future dairy development. It should be noted, however, that there may be restrictions which would preclude such development that can only be evaluated on a site specific basis. The area shown is, therefore, only provided for an estimate of where potential dairy development could occur. Agriculturally zoned land (AE-20, AE-40 and AE-80) located outside of Windshed Areas (urban or crop buffers) that is not devoted to existing dairy or other animal confinement operations, publicly-owned, or classified as "native vegetation" encompasses 145,149 acres. Available land is generally located west of Tulare, east and west of the communities of Tipton and Pixley, and north of Earlimart. The area north of Visalia appears to have reached maximum dairy development.

4.2.4 RELATIONSHIP TO OTHER PLANS, ORDINANCES AND POLICIES

The ACFP, once adopted, will be incorporated into the Tulare County General Plan. State law requires that elements of an adopted general plan be internally consistent. To this end, the ACFP will be consistent with and further implement goals and policies of the Tulare County General Plan.

4.3 ENVIRONMENTAL SETTING, IMPACTS, MITIGATION MEASURES

4.3.1 SOILS, GEOLOGY, HYDROLOGY AND WATER QUALITY

Setting: Most of the soils on the Valley floor portion of the county are used for irrigated agriculture, supporting a variety of crops. A highly specialized intensive farming industry/economy that uses a wide variety of crops has developed because of the combination of good soils, a plentiful supply of water for irrigation, and the long growing

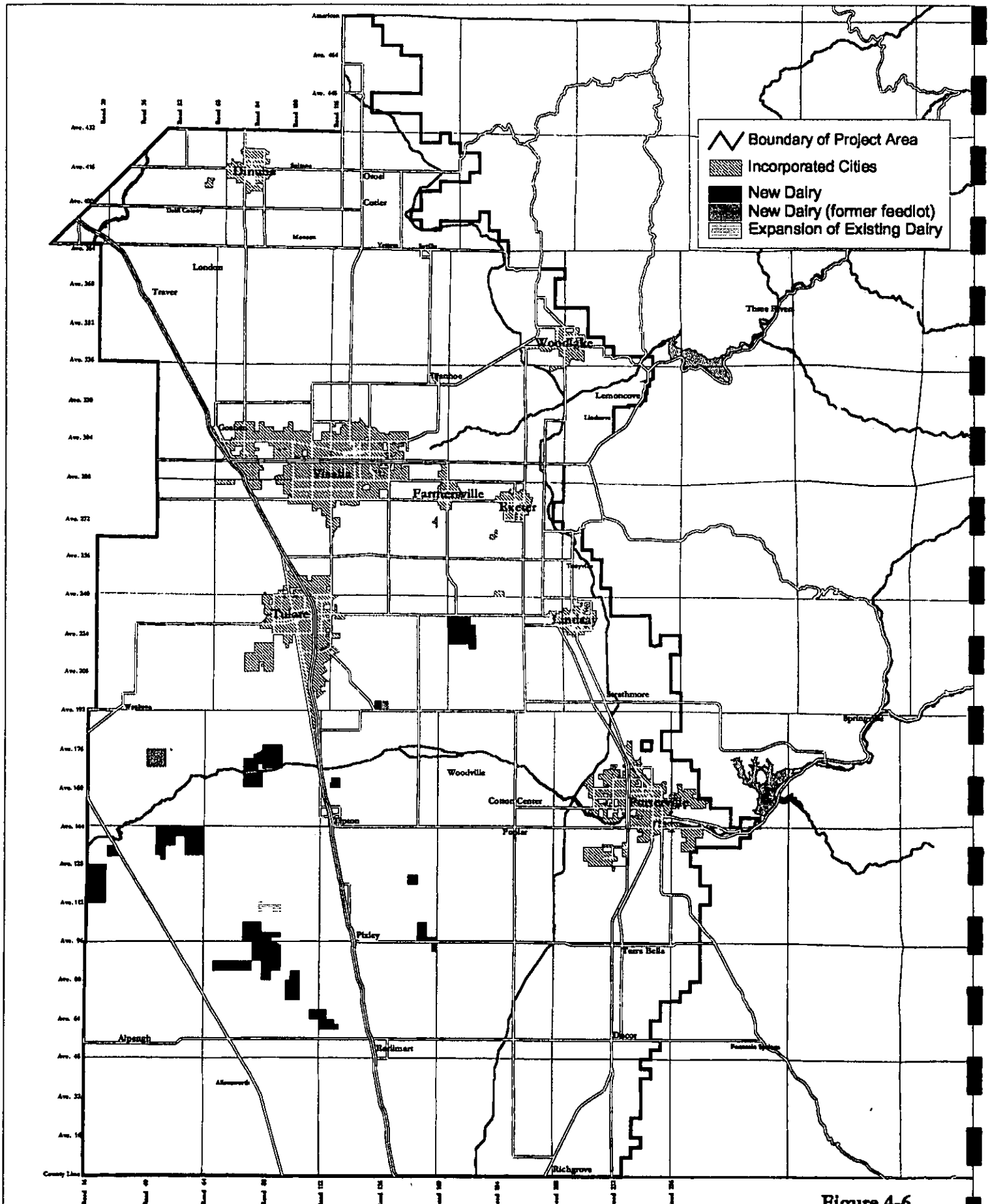


Figure 4-6

Dairy Sites Approved but Not Operating

Under Construction - or - Not Yet Built

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Tulare County Resource Management Agency

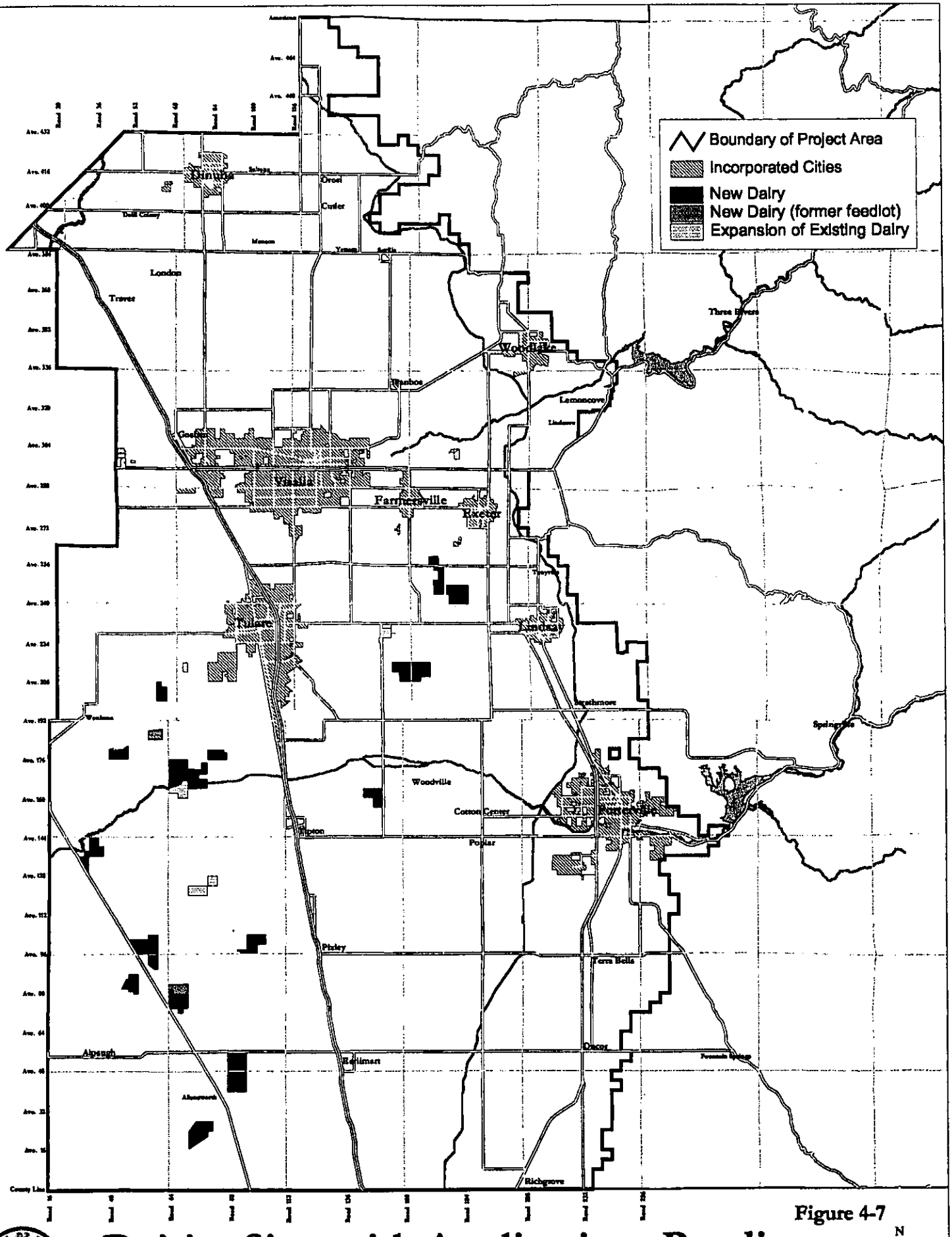

Figure 4-7

Dairies Sites with Applications Pending

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Tulare County Resource Management Agency

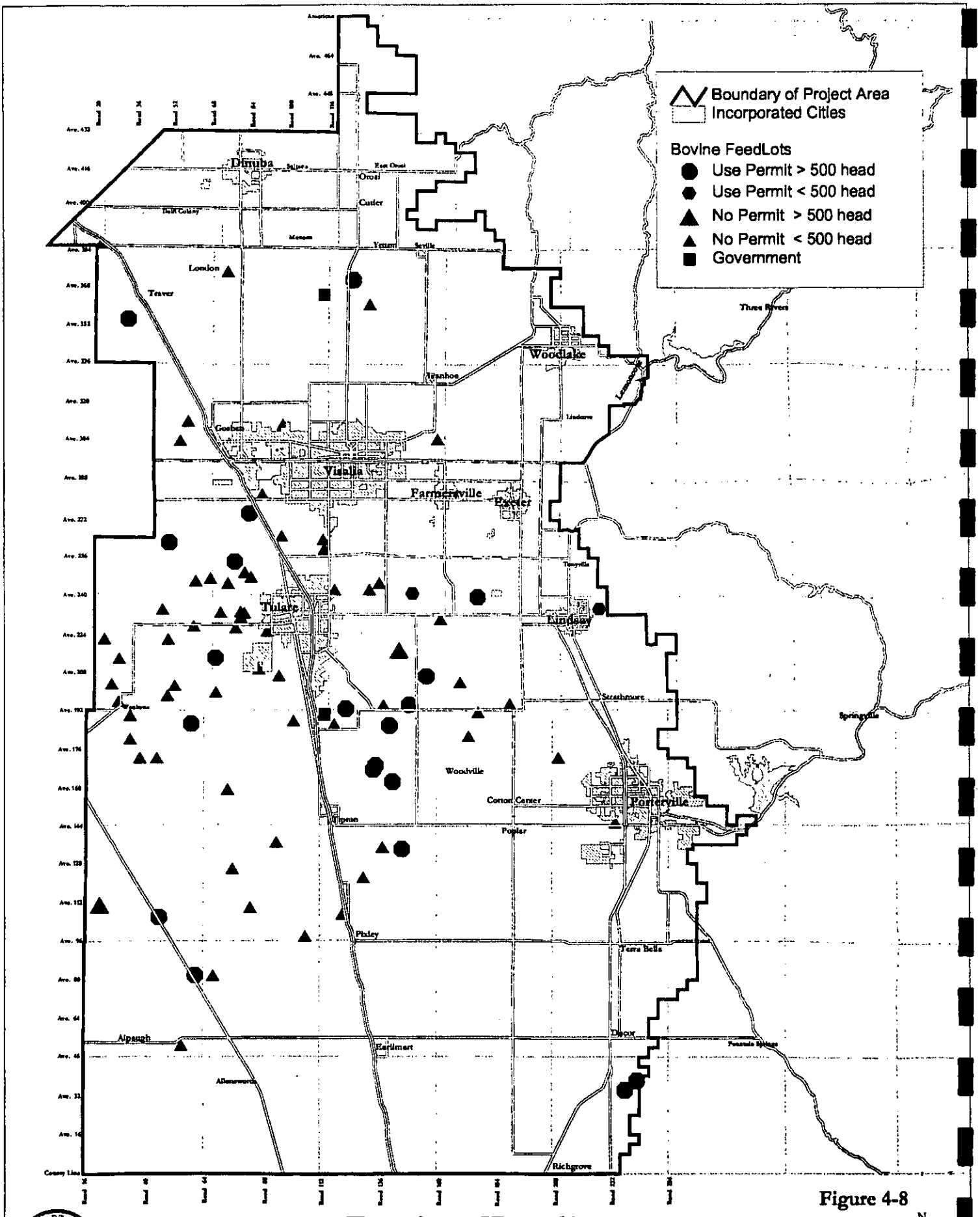

Figure 4-8

Bovine Feedlots

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Tulare County Resource Management Agency

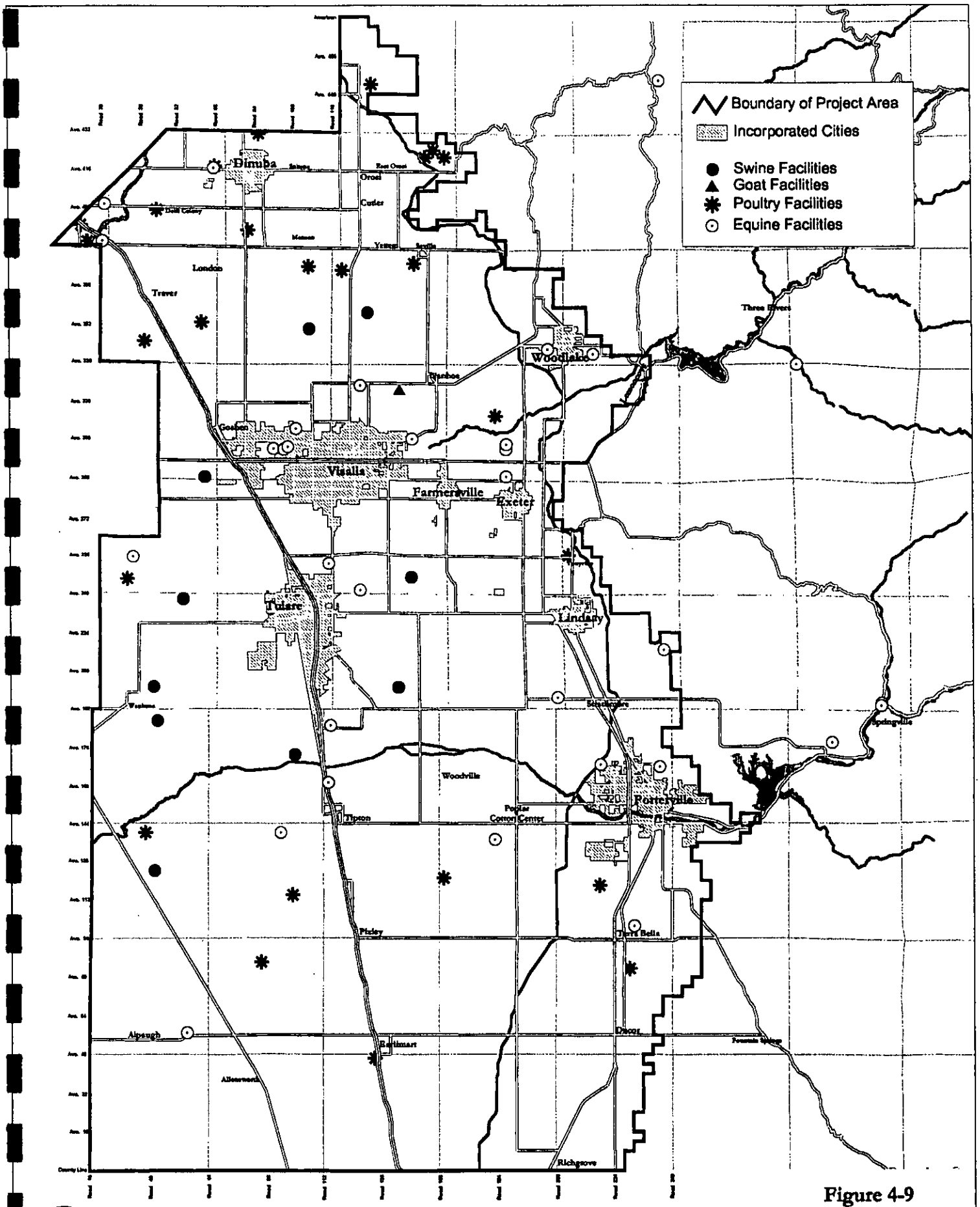

Figure 4-9

Equine, Goat, Poultry & Swine Facilities

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

season. Some native vegetation remains on alluvial fans and terraces and in small, unreclaimed areas of saline-sodic soils.

The soils in the western part of the county were formed primarily from the deposition of alluvial material along the rivers that drain the Sierra Nevadas. These soils can be divided into three basic geomorphic units: the more recent alluvial fans and floodplains associated with major drainages; the older fan terraces and stream terraces that occur between the major drainages; and the basin rims and floodplains along the eastern edge of Tulare Lake. (Reference Figure 1-2)

The alluvial fans and floodplains of the Kings River, Kaweah River, Tule River, White River, Cross Creek and Deer Creek formed in the dominantly granitic alluvial material deposited as a result of runoff from the Sierra Nevadas. Soils associated with these landforms account for more than half the acreage in the county, and most of these soils are prime farmland. The older fan terraces and stream terraces occur in areas where more recent alluvial deposition has not occurred. These areas occur far from rivers and streams, either in between them and out of the path of recent deposition, or adjacent to the basin rim and beyond the area of recent deposition.

Two major waterways drain the Sierra Nevadas into the Valley floor in Tulare County: the Kaweah and Tule rivers. The Kaweah River enters the valley through a canyon in the mountains east of Woodlake and the Tule River enters through a canyon in the mountains east of Porterville. The water of these rivers are impounded at the mouth of the canyons by Terminus Dam at Lake Kaweah and Success Dam at Lake Success. Most of the surface waters of these two rivers are diverted and used for irrigation. A large quantity of water does, however, sink into the sand of the delta to replenish the underground reservoir, is pumped to surface later, and then used for irrigation. Both the Kaweah and Tule rivers divide into a number of stream channels that also provide groundwater recharge areas. Although all these streams extend into the valley floor, surface water flows gradually seep into the sandy creek beds.

Agriculture uses more than 90 percent of the water supply in Tulare County. (UCCE, 1991) Water used by crops in Tulare County comes from four sources: rainfall, local streams, groundwater and imported water (Friant-Kern Canal). Approximately one-third of the applied irrigation water in Tulare County comes from local streams, one-third from local groundwater sources, and one-third is imported through the Friant-Kern Canal. The actual amount applied annually from any one of these sources may vary considerably depending on rainfall and storm runoff.

Except in wet years, the amount of rainfall in the county that is available for crop use amounts to only ten percent of crop requirements. The Valley floor is essentially a desert because the annual rainfall is less than ten inches, the majority of which falls in winter. Because most crops grown in the county require more than ten inches of water annually, cropland is largely limited to land that can be irrigated.

Most of the water applied to cropland that is not used by plants or lost through evapotranspiration percolates to groundwater. On the eastern side of the valley there are only a few restrictive clay layers which means that in most areas there is a continuity between surface and groundwater. However, on the western side of the valley, numerous clay layers restrict the movement of surface water to the deep aquifer preventing effective recharge. Excess water accumulates above the restrictive clay layer and ends up as salty agricultural drainage. (UCCE 1991)

The clay soils located on the western side of the county are found in several layers. Of particular concern is the "E-Clay", also known as Corcoran Clay. This clay layer is a well-recognized extensive impervious barrier to groundwater movement. (Alpaugh Irrigation District, April 1977) The water above the Corcoran Clay is of poorer quality than that below the E-layer. Recharge to the aquifers below the Corcoran Clay occurs beyond its easterly edge. The easterly edge of this clay layer lies just east of Highway 99 and extends from a depth of approximately 100' just west of the Highway to a depth of approximately 600' near the western boundary of the county. A map showing the location of the Corcoran Clay layer is included in Appendix G of this Report.

The quality of the soil that enables water or air to move downward through the strata is referred to as permeability. The rate at which a saturated soil transmits water is accepted as a measure of water movement through the strata. Terms describing permeability are measured in inches per hour. U. S. Department of Agriculture (USDA) and Natural Resources Conservation Service (NRCS) utilize the following terms in describing permeability:

Extremely Slow	0.00 to 0.01 inch
Very Slow	0.01 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately Slow	0.2 to 0.6 inch
Moderate	0.6 to 2.0 inches
Moderately Rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very Rapid	more than 20 inches

Figure 4-12 reflects the generalized permeability rating for soils in the project area.

USDA/NRCS has also developed ratings for evaluating and determining the potential of soils to transmit pesticides through the strata to the groundwater. Defined as the potential for pesticides to be transported by percolating water below the plant root zone, "pesticide loss potential – leaching" can result in contamination of shallow and deep aquifers, springs and local water tables. Pesticides that have leached from the soil surface can be transported vertically or horizontally through the soil by percolating water. The soil properties that establish the leaching rating for pesticide is similar to the leaching potential for nutrients, salts and other minerals. (Dan Martynn, NRCS, Visalia). Figure 4-13 shows the generalized leaching potential rating for soils in the project area.

There are three major concerns in liquid or solid waste management relating directly to the soil conditions on a dairy or animal confinement facility: (1) the design and construction of the dairy facilities, particularly the waste storage, transfer and treatment facilities; (2) the utilization of waste on cropland; and (3) the management and design of the irrigation system used to irrigate fields that receive waste. In constructing waste storage lagoons, specific consideration must be given to soil permeability conditions and the depth of the water table.

The depth to groundwater for the project area is reflected in Figures 4-14 (most recent information – Spring of 1998) and 4-15 (highest recorded level – Spring of 1984). In designing lagoon facilities, the highest recorded water table for the past 25 years should be taken into consideration.

The California Reclamation Board (CRB) is responsible for designating floodways and regulating land development and structural activities to prevent an adverse reduction of flood carrying capacity of the floodways. "Primary Floodways" are generally described as the channel area lying between the banks of these major waterways. At the federal level, the responsibility of defining floodprone areas lies with the Federal Emergency Management Agency (FEMA). FEMA has mapped "Special Flood Hazard Areas" for Tulare County. Figure 4-16 reflects the generalized location of areas designated as Zone A (areas of 100-year flood hazard) and Zone B (areas between the 100-year and 500-year flood hazard) as defined by FEMA.

In Tulare County, CRB and FEMA regulations are implemented by the County's Resoure Management Agency. Tulare County's authority to implement these regulations was established by agreement between the County and CRB dated November 28, 1989, and Tulare County Flood Damage Prevention Ordinance, Section 2-27-100 et seq.

Refer to Sections 1.3.1 and 1.3.2 of this Report for a description of applicable federal and State regulations regarding water quality.

ACFP Policies and Standards: ACFP Policies that specifically address issues related to soils, geology, hydrology and water quality are Locational and Animal Density Policies Nos. 2, 3 and 4. (Please refer to Chapter 3 of this Report for a complete recitation of these policies.

Policy No. 2 establishes a range of maximum allowable animal units per crop acre based on variables such as animal housing type, cropping patterns, and the method of manure disposal. This range of maximum allowable animal units is based on soil loading capacities, the methodology for which is set forth in Chapter 2 of this Report. The intent of this policy is to avoid the excessive application of nitrates, salts and other minerals.

Policy No. 3 establishes minimum separation requirements between dairy and other animal confinement facilities. These separations are required to avoid, among other things, soil and groundwater contamination by preventing over saturation or over concentration of animal confinement facilities within any geographic area.

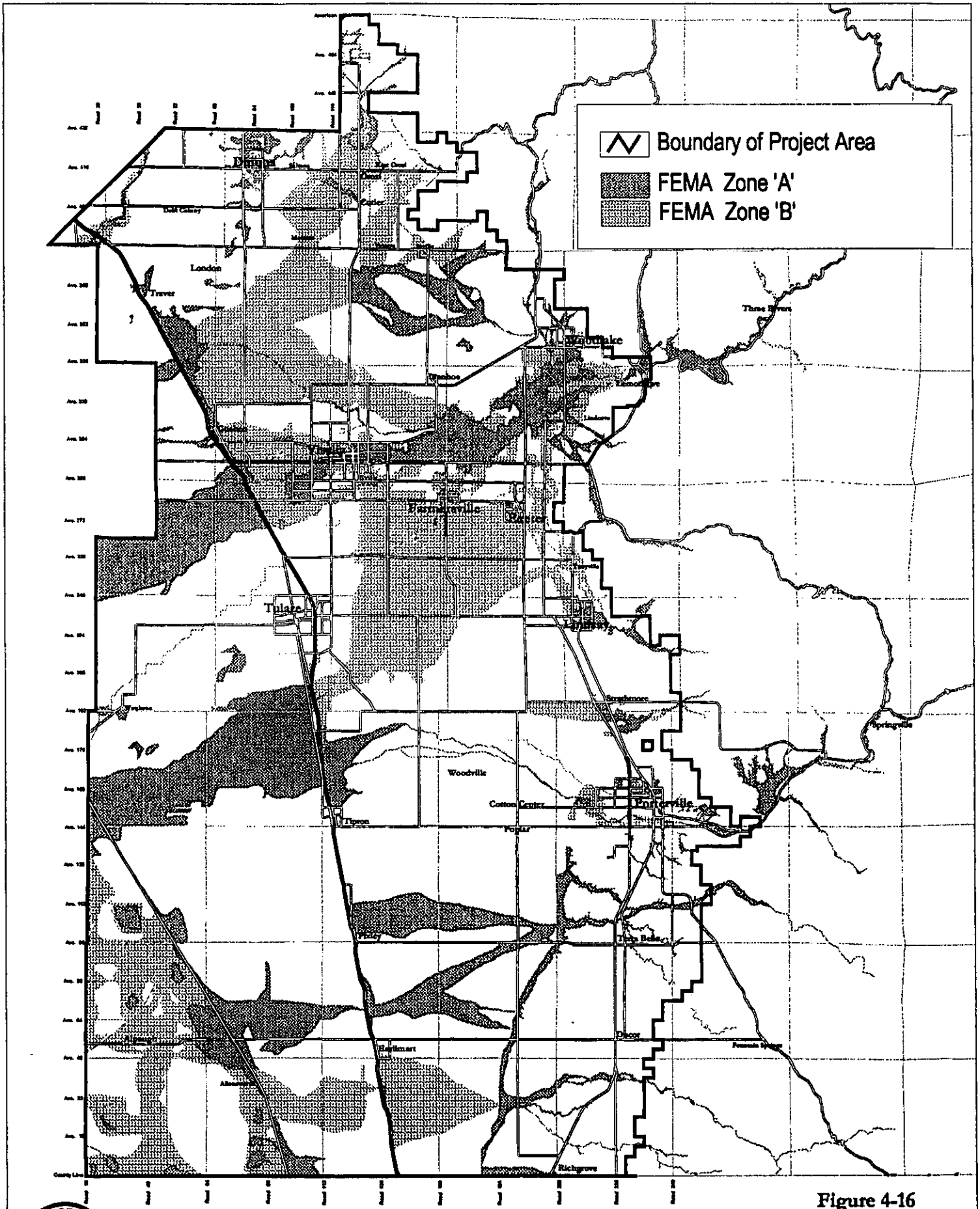

Figure 4-16

FEMA Special Flood Hazard Areas

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Policy No. 4 prohibits the establishment of dairies or other animal confinement facilities within primary floodplains and in sink holes or areas draining into sink holes.

Standard Conditions of Approval (COA), also listed in their entirety in Chapter 3 of this Report, that specifically address related issues and implement the above referenced policies include COA Nos. 1, 2, 6, 10 11, 12, 13, 14, 16, 17, 18 and 19. Once conditions of approval are adopted by resolution for a specific dairy or other animal confinement facility, the applicant is required by County Ordinance to record the Planing Commission or Board of Supervisors resolution along with an "Acceptance Form" signed by the applicant agreeing to the conditions of approval. Noncompliance with any condition is grounds for enforcement activities which could lead revocation of the Special Use Permit.

Impact Evaluation Criteria: The recently revised State CEQA Guidelines indicate that a project may have a significant effect on the environment if it would:

- Cause substantial flooding or erosion;
- Adversely affect any significant water body;
- Violate any water quality standards or waste discharge standards or otherwise substantially degrade water quality;
- Substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- Substantially alter drainage patterns, currents, or the course or direction of water movements in a manner that would result in substantial erosion or siltation on- or off-site, or substantially increase the rate or amount of surface water runoff in a manner that would result in flooding on- or off-site;
- Create or substantially contribute to runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- Place housing or other improvements susceptible to flooding within a 100-year flood hazard zone as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard map;
- Expose people or property to water related hazards, such as flooding or inundation by seiche, tsunami, or mudflows.

Impacts:

Impact # 4.3.1-1: *Soil contamination and degradation of groundwater quality.*

Discussion/Conclusion: Excessive application of dry or liquified animal wastes on fields may result in high concentrations of nitrogen, salts and other minerals in the soil. When the soil is saturated, the nitrates, salts and other minerals in the soil can leach into the groundwater. Nutrients from manure stockpiled for future application can also leach through the soil and contaminate the groundwater. Additional sources of potential

groundwater contamination include inadequately or poorly designed/constructed corrals and wastewater holding ponds. This impact is considered **"Less than Significant with Mitigation".**

Impact # 4.3.1-2: *Degradation of surface water quality.*

Discussion/Conclusion: Wastewater from dairies are high in nitrogen, ammonia, salts and organic matter (mature and other solids). These oxygen demanding substances can reduce or remove the dissolved oxygen in the waterways, resulting in fishkills. Increased ammonium concentrations are also toxic to fish. Surface water contamination from the discharge of wastewater can result if wastewater storage facilities are not designed to meet minimum guidelines as established by federal and State guidelines. Refer to Chapter 2 of this Report for a discussion of federal (NPDES) and State (Title 27) requirements. This impact is considered **"Less than Significant"** because the application and enforcement of mandatory federal, state and locally adopted standards will reduce the impact to a level less than significant.

Impact #4.3.1-3: *Exposure of people or property to water related hazards such as flooding or inundation.*

Discussion/Conclusion: Construction of dairy improvement would introduce impervious surfaces changing natural drainage patterns. Additionally, dairies and other animal confinement facilities established in floodprone areas can lead to exposure of improvements to potential flood hazards and could cause pollution to off-site sources if accidental discharge to surface waters would occur and/or affect downstream flows. (Also reference discussion on Impact #4.3.1-2 on surface water quality and Impact #4.3.4-2 on degradation of wetlands.) Compliance with the Tulare County Flood Damage Prevention Ordinance would reduce the potential of exposing people and people to flooding to "less than significant". Implementation of a site specific drainage plan approved prior to construction would reduce impacts associated with additional impervious surfaces to "less than significant". The potential to pollute off-site sources, however, is considered **"less than significant with mitigation"**.

Impact #4.3.1-4: *Depletion of water resources.*

An impact to the water supply would occur if a considerable increase in the amount of water used would result relative to the existing water usage. In Tulare County, the average water usage for irrigated cropland (applied, not actual crop use) is 3.48 acre feet/acre/year. (UCCE, Tulare County, 1991) Water usage on dairy sites averages 100 gallons per cow per day. (Tom Shultz, U. C. Cooperative Extension 1999) The average annual water use per cow would be approximately 0.1 acre feet/year. It should be noted that large portion of this amount would, however, become runoff which is collected in the storage ponds and reused either as wash water or irrigation water.

If the land proposed for dairy improvement is already in irrigated cropland or pasture then it is not likely that conversion to a dairy facility would result in a net increase in

water usage. However, actual water usage for a new dairy would vary depending on herd size, amount of land being converted, existing cropping patterns, and existing sources of irrigation water. Without a site specific development proposal to provide those variables for evaluation, it would be speculative to make a conclusion on the level of significance of this impact. At such time as an application is submitted to Tulare County RMA, this issue will be evaluated on a case-by-case basis as noted in the Supplemental Environmental Questionnaire contained in Appendix Q.

Mitigation Measures:

Mitigation Measure #4.3.1-1: Application of dry or liquid nutrient matter to agricultural fields at an acceptable agronomic rate based on soil type and cropping pattern. Applies to Impacts #4.3.1-1 and #4.3.1-3.

> **Effectiveness of Measure:** In the absence of excessive soil moisture, most contaminants are not able to migrate downward to groundwater. Application of dry or liquid nutrient matter at agronomic rates as noted above will ensure that oversaturation does not occur.
>
> **Implementation/Monitoring**: This measure will be implemented through compliance with ACFP Locational and Animal Density Policy No. 2, Compliance and Monitoring Policies Nos. 1, 2 and 3, and COA Nos. 1 and 2. Monitoring will be by Tulare County RMA in coordination with the Central Valley RWQCB.

Mitigation Measure #4.3.1-2: Design and construction of wastewater holding ponds shall be accordance with Title 27 of the California Code of Regulations including, but not limited to, the requirement for the pond to be lined with, or underlain by, soils which contain at least 10 percent clay and not more than 10 percent gravel, or be lined with artificial materials of equivalent impermeability. Applies to Impact #4.3.1-1.

> **Effectiveness of Measure:** Design and construction of wastewater holding ponds as noted above will ensure that the pond walls and floors are sealed to avoid seepage.
>
> **Implementation/Monitoring:** This measure will be implemented through conditions of approval for individual Special Use Permits. Monitoring will be by the Central Valley RWQCB.

Mitigation Measure #4.3.1-3: Design and construct the waste storage ponds to adequate size to hold a minimum of 120 days accumulation of waste and wash water plus the surface runoff from one 25-year, 24-hour storm while maintaining a minimum of two foot freeboard. Applies to Impact #4.3.1-2 and #4.3.1-3.

> **Effectiveness of Measure:** Adequate sizing of the storage ponds will ensure that discharges to surface water occur only during storm events greater than 25-year,

24-hour storms. The 120 day standard means that the storage ponds will have sufficient capacity for the wetter months of the year when little, if any, irrigation discharges will be possible.

Implementation/Monitoring: This measure will be implemented by requiring through conditions of approval for individual Special Use Permits the design and construction of the storage ponds by appropriately accredited professionals and the appropriate maintenance of such ponds. Monitoring will be by the Central Valley RWQCB.

Mitigation Measure #4.3.1-4: Application and issuance of a NPDES Permit. Applies to Impact #4.3.1-2.

Effectiveness of Measure: Possession of a NPDES permit will ensure compliance with federal and State standards for discharge of wastewater.

Implementation/Monitoring: The Central Valley RWQCB implements the NPDES permit program for the Tulare County area. Monitoring will be by the Central Valley RWQCB.

Mitigation Measure #4.3.1-5: Preparation and submittal of a Comprehensive Nutrient Management Plan (CNMP) for all existing and proposed animal confinement facilities. (See Appendix H for a description of a CNMP.) Applies to Impacts #4.3.1-1 and #4.3.1-2.

Effectiveness of Measure: A CNMP will provide a basis for evaluating the number of animals sustainable on-site, taking into consideration feed management, manure handling and storage, land application of solid/liquid manure, cropping patterns, soil types, and other related factors.

Implementation/Monitoring: The requirement for all facilities to prepare and submit a CNMP will be required by Ordinance adopted by the Tulare County Board of Supervisors. Submittal of a CNMP for new facilities proposed will occur with submittal of an application for a Special Use Permit. Existing facilities will be given notice of this requirement and given a timeframe (specified by ordinance) for submittal. Monitoring will be by Tulare County RMA.

Mitigation Measure #4.3.1-6: Submittal of an Annual Compliance Report for all animal confinement facilities in the county and compliance inspections for each facility at least once every five years. Applies to Impacts #4.3.1-1 and #4.3.1-2.

Effectiveness of Measure: Annual Compliance Reports and site compliance inspections are needed in order to ensure that ACFP policies and standards, and conditions of approval for individual operations are complied with.

Implementation/Monitoring: The requirement for Annual Compliance Reports and on-site compliance inspections will be required by Ordinance adopted by the Tulare County Board of Supervisors. Monitoring will be by Tulare County RMA.

Mitigation Measure #4.3.1-7: At the time of application submittal for new dairies and other animal confinement facilities, a geo/hydro report prepared by an appropriately accredited/licensed professional shall be submitted which documents the existing soil and groundwater conditions for a project site. Applies to Impact #4.3.1-1. The report should, at a minimum, contain the following information:

a. A description of the groundwater conditions beneath the site including perched zones, uppermost aquifer, confined aquifer(s), current depth to groundwater (perched zones and aquifers), and the highest anticipated level of groundwater beneath the site.
b. A description (and groundwater contour map) of the groundwater gradients in the uppermost aquifer beneath the site.
c. Water quality data obtained from analyses of samples taken from the uppermost aquifer beneath the site. At a minimum the analytical data should include nitrates, nitrite, total Kjeldahl nitrogen, total dissolved solids, and pH.

Effectiveness of Measure: This information will provide baseline criteria to determine whether the groundwater in the area is already impaired and whether there is capacity in the groundwater to accommodate the added load from a new or additional facility. Once this information is established, a determination of the maximum allowable animal units for the site can be made in concert with the CNMP.

Implementation/Monitoring: Monitoring will be by Tulare County RMA, Tulare County Environmental Health Division, and Central Valley RWQCB.

Mitigation Measure #4.3.1-8: Based on the information contained in a site-specific geological/hydrological report, wells to monitor nitrate and salt levels may be required. If monitoring wells are determined to be necessary, a groundwater monitoring plan, prepared by an appropriately licensed/accredited professional shall be developed and submitted for approval. Applies to Impact #4.3.1-1.

Effectiveness of Measure: Testing of the groundwater will provide baseline information to ensure compliance with ACFP policies and standards.

Implementation/Monitoring: Monitoring wells will be installed in accordance with State and County Well Ordinances. A groundwater monitoring plan will be submitted for review by Tulare County RMA, Tulare County Environmental Health Division, and Central Valley RWQCB.

4.3.2 TRAFFIC/CIRCULATION

Setting: Tulare County's transportation system is composed of several State highways, including three freeways, as well as numerous county and city routes. It is also composed of a public transit system, two common carriers (Greyhound Orange Belt Stages), other local agency transit and paratransit services, general aviation, limited passenger air service and freight rail service. Travel within the county is a function of the size and spatial distribution of population and economic activity, and the relationship to other major activity centers within the Valley (such as Fresno, Bakersfield and Hanford) and more distant urban centers such as Los Angeles and the Bay Area. In addition, there is considerable travel movement between the northwest portion of the county and southern Fresno County (cities of Reedley and Kingsburg). Due to the interrelationship of urban and rural activities (employment, housing and services) and the low average density of land uses, the private automobile is the dominate mode of travel for residents in Tulare County.

The agricultural economy of the county depends on safe and efficient goods movement. The County is responsible for maintaining an extensive network of low volume farm-to-market roads in sparsely settled areas to service the agricultural industry. Large trucks are the primary means of transporting such goods. (Draft Tulare County Circulation Element Revision, 1997)

The Draft Circulation Element Revision includes a "Functional Classification System" which groups streets and highways into classes or systems according to the type of service they are intended to provide. For the rural areas of the county, the following definitions are provided:

> *Freeways*. A freeway is a divided, limited access highway (access is provided at grade separated interchanges and vehicular crossing of these facilities is provided at grand separations). Freeways are designed to carry large volumes of traffic traveling long distances, although localized use of freeways in urban areas is considerable.
>
> The California Department of Transportation (Caltrans) designs and constructs all freeways to federal (if federal monies are being used to fund or partially fund the facility) and State design standards. Alignments and key design details such as interchange locations are determined in consultation with local and federal authorities when involved. Nothing actually precludes local jurisdictions from building their own freeways. However, Caltrans' State Highway System contains virtually all candidate routes for freeways. The high cost of freeways has historically made it impractical for any agency other than Caltrans to construct new freeways.
>
> *Major Rural Arterials*. These are highways routes outside of UABs or UDBs intended to link urban areas with one another as well as serving through traffic movements across the county. The right-of-way standards

for major rural arterials is 110 feet. Additional right-of-way may be required at some intersections.

Other Rural Arterials. These are highways outside UABs or UDBs that complement the Major Rural system. They normally link smaller communities and may be continuous over shorter distances than major rural arterials. Right-of-way for these facilities is 84 feet, and additional right-of-way at intersections may be required.

Rural Collectors. These highways are located outside UABs or UDBs and provide access to adjacent property. These facilities also provide for traffic movement to and from the arterial system. Rural collectors generally serve less than 10,000 ADT. The right-of-way standards for rural collectors is 60 feet.

Rural Local Roads. These roads provide access to property and activity nodes in sparsely settled areas of the county. The right-of-way standard for these facilities is 60 feet, although in some instances a 56 foot right-of-way may apply. All county roads not shown on the Circulation Element Map are considered standard local roads.

The Draft Circulation Element, in addressing roadway and other circulation needs of the County, includes the following goals, objectives and policies which are relevant to rural transportation needs:

Policy C-1.1c: Transportation system improvements shall be sized and designed to safely and efficiently accommodate existing and projected traffic, with respect to both the volume and type of traffic.

Policy C-1.1e: When a land use development project is proposed, the Tulare County RMA will determine if the project meets local criteria or thresholds, and decide if a traffic impact study is required. If the project warrants a traffic impact study, the developer is responsible for objectively assessing the impacts of the development on the roadway network. The analysis will follow standard guidelines for site impact analysis; including generation, distribution, and assignment of trips, to the background roadway network and the analysis of level of service on critical roadway segments and intersections. Traffic impact studies evaluating state highway facilities, shall be referred to Caltrans, and utilize traffic study preparation guidelines and level of service standards as recommended by Caltrans.

Goal C-3: The County's transportation system shall be maintained, designed, constructed, operated, and implemented in a manner which provides a roadway network which supports the economy and maintain personal mobility, and promotes safety, convenience, and efficiency.

Policy C-3.1a: Priority shall be given to:

- Maintaining the existing farm-to-market rural road system which supports transportation of goods and people in the county

Policy C-4.1c: All significant trip generators shall be served by roads of adequate capacity and design standards to provide reasonable and safe access by appropriate transportation modes with minimum delay.

Objective C-4.3: The County's roadway network shall be consistent and uniform throughout the county, and the extent practicable, enhance mobility and improve roadway operations and safety.

Objective C.4-4: Roadway improvement funds should be allocated to enhance mobility and promote convenient, safe and efficient transport of people, goods and materials.

Policy C-4.4a: The County shall make every effort to obtain adequate funding to provide roadway infrastructure which accommodates new development ,and maintains existing levels of personal mobility and the current farm-to-market roadway system.

Objective C-4.5: The burden of roadway improvement costs should be equitably distributed among property owners benefiting from new development, highway users, and taxpayers generally.

Policy C-4.5a: The County shall seek roadway improvement funding from a variety of sources to ensure that no person(s) or agency in inequitably burdened and pays an inordinate share of the cost of such improvements. Funding sources shall be distributed equitably, to the extent practicable, between those benefiting from the expenditure of such funds.

Policy C-4.6i: Prior to approval of conditional use permits and/or site plan reviews for new agricultural processing and industrial facilities with similar truck traffic generating characteristics, the County shall require the applicant to demonstrate an adequate on-site truck parking/staging/maneuvering facility plan to preclude the need for truck queuing and parking on adjacent roadways. Furthermore, the facilities shall be conditioned such that, in the event the Public Works Director determines that off-site truck parking and queuing is occurring due to inadequate on-site truck facilities or inefficient use of them, provision of additional on-site truck facilities may be required.

Policy C-4.6j: Development proposals requiring developer mitigation for future year circulation improvements shall agree to participate in a mitigation banking program implemented by a development agreement with the County.

The 1998 Regional Transportation Plan (RTP) was developed by the Tulare County Association of Governments (TCAG) as a 20-year planning document to qualify projects for the State Transportation Improvement Program (STIP). The STIP is a document that programs State and federal gas tax funding for highway and commuter rail projects. The Regional Transportation Improvement Program (RTIP) is a short-range (5-year) programmatic document that programs the expenditure of all federal and state transportation funds in the county for the next 5 years. Prepared to meet federal and state requirements, it details sources of funds, including local participation, and programs these funds to an explicit priority list of projects to be implemented each year. Basically, the RTIP is a short-range implementation program for projects in the Circulation Element to be implemented with state or federal funds.

The RTP states the following:

Recognizing that agriculture is the region's economic base, Tulare County strives to maintain and improve the transportation infrastructure that is essential to this industry. For years it has become increasingly difficult to keep pace with necessary maintenance on existing facilities due to financial constraints. In some cases deferred maintenance has become evident. The diffuse movement of farm to market and other truck dependent industries result in high maintenance costs that restrict funds that otherwise would be used for much needed network expansion.

The County Road System includes those public roads that have been dedicated to and accepted for maintenance by the County pursuant to the California Road System Mapping for Tulare County as certified by the Board of Supervisors. The roads within this system are categorized as follows:

Select System Roads: This category includes the following:

a. Arterial Roads: Roads that carry heavy traffic volumes which interconnect principal traffic flows from cities and rural areas.

b. Collectors: Roads that serve to collect traffic from minor roads and carry it to arterial roads.

Minor Roads: This category includes the following:

a. Minor Collectors: Through roads with relatively low traffic volumes providing access and connection to a Select System Road.

b. Local and/or Land Use Roads: Roads whose primary function is to provide access to adjacent land and which carry traffic to other minor roads and in some instances select system roads. These roads generally are less than two miles in length and "T" into through roads.

Local rural roads, for the most part, have not been constructed to an engineered standard and, therefore, are structurally inadequate to support truck traffic associated with dairy and other animal confinement operations. These roads are relatively narrow in width, have no base material beneath the pavement, and no provisions for adequate drainage of the roadway have been made. Due to the inadequate funding for maintenance of the County Road System, minor roads are not being maintained on a routine basis.

Due to a sustained time period of funding shortages for maintaining the County's Road System, a growing number of roads have not received needed maintenance resulting in a large volume of deferred road repairs. Maintenance of the County Road System is tracked by a Pavement Management System (PMS). The PMS determines which roads should receive the highest priority when working with constrained budgets that cannot provide all the needed maintenance work for every mile of road. Road maintenance is therefore based on allocating maintenance funds giving priority to roads with higher traffic volumes and pavement surfaces that have not failed.

The PMS has made the obvious finding that present funding is inadequate to allow pavement repairs to keep up with the rate of deterioration and for many roads, surface deterioration has advanced to the point of needing costly reconstruction. Present funding levels provide for about 1,500 miles of roads, or one-half the County Road System, to be maintained. These roads are shown and designated as priority 1 through 8 on Figure 4-17. The PMS further predicts that 500 miles of paved roads will revert to gravel during the next 10 years if the current funding levels are continued. The majority of the roads with inadequate funding for needed maintenance and those roads that are projected to revert to gravel are local rural roads as defined above.

ACFP Policies and Standards: There are no ACFP policies that are directly related to traffic and circulation issues. Standard Conditions of Approval, listed in their entirety in Chapter 3 of this Report, that specifically address traffic related issues include COA Nos. 3, 4 and 5.

Impact Evaluation Criteria: The recently revised State CEQA Guidelines indicate that a project may have a significant effect on the environment if it would:

- Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system;
- Exceed either individually or cumulatively, a level of service standard established by the County for designated roads or highways;
- Result in a change in air, rail or water-borne traffic patterns, including either an increase traffic levels or a change in location that results in substantial safety risks;

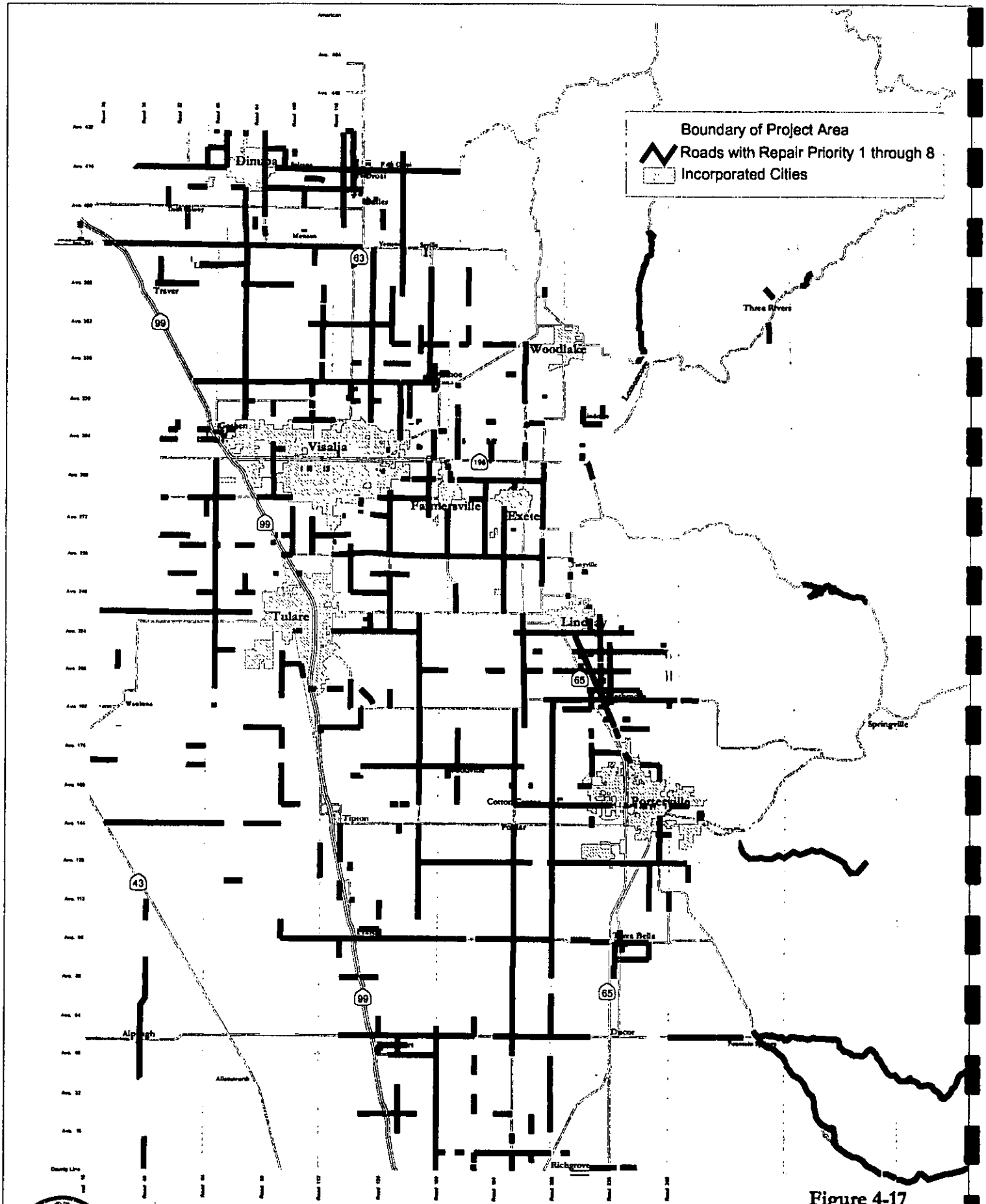

Figure 4-17

Road Repair Priorities

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- Substantially increase hazards due to a design feature or incompatible uses, hazard or barriers for vehicles, pedestrians, or bicycles;
- Result in inadequate emergency access;
- Result in inadequate parking capacity;
- Conflict with adopted policies, plans or programs supporting alternative transportation;
- Substantially accelerate physical deterioration of public and/or private roads.

Impacts:

Impact #4.3.2-1: *Increased traffic generation.*

Discussion/Conclusion: Based on information received on individual special use permit applications on file with the Tulare County RMA, milk tankers will typically pick up milk three times in a two day period. The hauling of feed to a dairy does not regularly happen on a daily basis, however, averaging deliveries over a longer period, it is estimated that feed deliveries account for four truck trips in three days. It is estimated that dairies generally generate an average of 2.83 truck trips per day. Generating an average of less than three truck trips per day would not constitute an increase in traffic that is substantial in relation to the existing traffic load and capacity of the most developed roads. However, because dairies are typically located in more remote areas served only by farm-to-market roads that are not constructed to engineering standards, this impact is considered **"potentially significant"**.

Impact #4.3.2-2: *Accelerated physical deterioration of public and/or private roads.*

Discussion/Conclusion: Minor roads evolved over time and were considered adequate for the minimal traffic and agricultural equipment associated with seasonal planting and harvesting activities. However, truck traffic associated with current dairy and other animal confinement operations carry heavier loads (maximum gross vehicle weight of 80,000 lbs.), are daily in nature, and thus are much more destructive to these minor roads. Given the structural inadequacies of minor roads coupled with the lack of maintenance, dairy and other animal confinement operations utilizing these roads are expected to degrade and ultimately destroy the roadway at an accelerated rate compared to historic traffic conditions. This impact is considered **"potentially significant"**.

Mitigation Measures:

Mitigation Measure #4.3.2-1: Developers of new dairy and other animal confinement operations shall be responsible for constructing all impacted public local rural roads to an engineered standard established by the Tulare County RMA from the development access point(s) to a Select System road. The specific mitigation will be site and project specific – individual projects will only be responsible for impacts attributed to and reasonably related to the project. It is recognized that this measure may prove to be infeasible at the individual project level, if the proponent can demonstrate that the actual costs of road construction make the mitigation measure infeasible. An additional option would be the

abandonment of public road(s) if the applicant agrees to maintain the roads to a standard that minimizes mud and dust. Applies to Impacts #4.3.2-1 and #4.3.2-2.

Effectiveness of Measure: Construction of impacted public local rural roads to an engineered standard would extend the life of the road improvements and reduce the costs of associated maintenance. However, this mitigation would not resolve the impact to local rural roads caused by existing animal confinement operations and other agricultural operations (such as packing houses, food processing plants and other similar uses allowed in agricultural zones). If public roads are abandoned, the County would no longer be responsible for maintenance.

Implementation/Monitoring: This requirement would be incorporated into the conditions of approval for individual dairy and other animal confinement operations. Establishing design standards and monitoring would be the responsibility of the Tulare County RMA.

Mitigation Measure #4.3.2-2: The County should study the possibility of establishing a traffic impact fee program to provide funding for construction and maintenance of impacted minor roads. Applies to Impact #4.3.2-2.

Effectiveness of Measure: Traffic impact fee programs have been utilized in many jurisdictions to compensate for budget deficiencies for road improvements and maintenance. However, unless and until an appropriate study and evaluation has been completed and a program adopted by the County, it would be speculative to determine that this mitigation measure would reduce the impact to less than significant.

Implementation/Monitoring: Preparation of a traffic impact fee study, if directed by the Board of Supervisors, would be the responsibility of the Tulare County RMA. Adoption of the actual fee program would be the responsibility of the Tulare County Board of Supervisors.

Mitigation Measure #4.3.2-3: Prohibit new dairies and other animal confinement facilities in areas where the existing roads cannot handle any more traffic. Applies to Impact #4.3.2-2.

Effectiveness of Measure: Prohibiting the establishment of new facilities in areas where the existing road conditions will not handle additional traffic would reduce the impacts from new facilities but would not, as discussed under Mitigation Measure #4.3.2-1 above, resolve the impact to local rural roads caused by existing operations. It should be noted, however, that because of the existing animal operations already established in the county, preferred locations for new facilities are most likely to be remote in order to meet ACFP policies and standards. Although this mitigation measure may reduce noted impacts, it is likely to contradict the purposes of established policies and, therefore, may not be a feasible mitigation measure.

Mitigation Measure #4.3.2-4: The County should seek funding from other sources for construction and maintenance of farm-to-market roads.

Effectiveness of Measure: Obtaining other funding sources for construction and maintenance of farm-to-market roads would help to compensate for budget deficiencies for road improvements and maintenance. However, unless and until such funding is obtained by the County, it would be speculative to determine that this mitigation measure would reduce the impact to less than significant.

Implementation/Monitoring: Reviewing and obtaining funding sources for farm-to-market roads would be the responsibility of the Tulare County RMA.

4.3.3 AIR QUALITY

Setting: Tulare County is located in the San Joaquin Valley Air Basin (SJVAB) which is defined by the Sierra Nevada mountains in the east, the Coast Ranges in the west, and the Tehachapi mountains in the south (reference Figure 4-18). These topographic features restrict air movement within and out of the basin. The SJVAB is, therefore, highly susceptible to pollutant accumulation over time. Factors such as wind speed and direction, temperature, inversion layers, precipitation and fog affect the local air quality. (SJVUAPCD, 1998)

Wind speed and direction play an important role in dispersion and transport of air pollutants. During the summer, wind speed and direction data indicate that summer wind usually originates at the north end of the SJV and flows in a south-southeasterly direction through the SJV, through the Tehachapi pass, into the Southeast Desert Air Basin. During the winter, data indicates that the wind occasionally originates from the south end of the SJV and flows in a north-northwesterly direction. (SJVUAPCD, 1998)

The SJVAB has an "inland Mediterranean" climate averaging over 260 sunny days per year. Summer high temperatures often exceed 100°F, averaging in the high 90s. Average high temperatures in the winter are in the 50s, however, highs in the 30s and 40s can occur on days with persistent fog and low cloudiness. (SJVUAPCD, 1998)

Precipitation on the SJV floor decreases from north to south; Stockton receives approximately 20 inches/year, Fresno approximately 10 inches/year, and Bakersfield less than 6 inches/year. Precipitation occurs primarily during the winter months with some occurring in late summer and fall. Between winter storms, high pressure and light winds allow cold moist air to pool on the Valley floor, resulting in "Tule fog". (SJVUAPCD, 1998)

The vertical dispersion of air pollutants in the SJV is limited by the presence of persistent temperature inversions. Because of expansional cooling of the atmosphere, air temperature usually decreases with altitude. A reversal of this atmospheric state, where the air temperature increases with height, is termed an inversion. Inversions can exist at

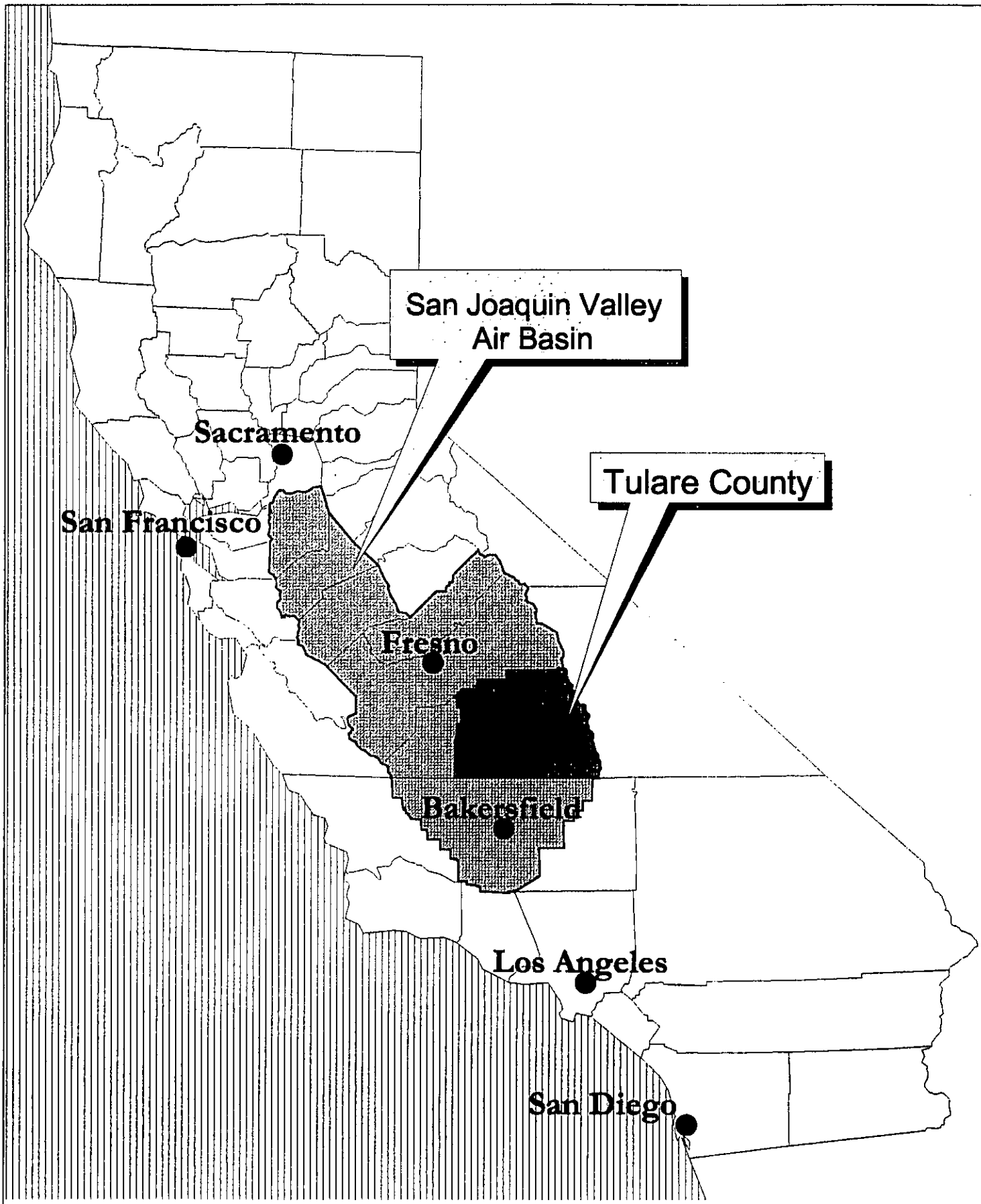

Figure 4-18

San Joaquin Valley Air Basin

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

25 0 25 50 75 100 Miles

N W E S

the surface, or at any height above the ground. Air above and below the inversion base does not mix because of differences in air density, therefore, the inversion base represents an abrupt density change where little exchange of air occurs. (SJVUAPCD, 1998)

Inversion layers are significant in determining ozone formation and carbon monoxide (CO) and respirable particulate matter (PM-10) concentrations. Ozone is classified as a "regional" pollutant in part because of the time required for ozone formation. Ozone precursors can be transported well away from the source area before ozone concentrations peak. PM-10 is also considered a regional pollutant in part because of its tendency to remain suspended in the air over long periods of time. Some other primary pollutants, such as CO, are classified as "localized" pollutants in part because they tend to dissipate easily and therefore may form high concentrations when wind speed is low. Conditions favorable to fog formation are also conditions favorable to high concentrations of CO and PM-10. Ozone levels are low during these periods because of the lack of sunlight to drive the photochemical reaction. Fog can also help in the formation of secondary pollutants/particulates such as ammonium sulfate. These secondary particulates are believed to be a significant contributor of winter season violations of the PM-10 and PM-2.5 standards. (SJVUAPCD, 1998)

The Environmental Protection Agency (EPA) is responsible for implementing federal standards for ambient air quality, mandated under the Federal Clean Air Act (FCAA) signed into law in 1970 and amended in 1977 and 1990. Pursuant to the FCAA, National Ambient Air Quality Standards (NAAQS) were established for the following pollutants: carbon monoxide (CO); ozone; PM-10; PM-2.5; nitrogen dioxide (NO_2); sulfur dioxide (SO_2); and lead. The primary NAAQS standards are intended to protect, with an adequate margin of safety, those persons most susceptible to respiratory distress such as people suffering from asthma or other illness, the elderly, very young children, or other engaged in strenuous work or exercise. Table 4.3.3-1 reflects the NAAQS as well as State standards.

The California Ambient Air Quality Standards (CAAQS) were established pursuant to the California Clean Air Act (CCAA), adopted in 1988 {California Health and Safety Code (CH & SC) §39606(b) and its predecessor statutes}. The California Air Resources Board (ARB) is responsible for coordination and oversight of State and local air pollution control programs.

The CH & SC [§ 39608] requires the ARB to "identify" and "classify" each air basin in the state on a pollutant-by-pollutant basis. Subsequently, the ARB designated areas in California as nonattainment based on Violations of the CAAQSs. Areas in the state were also classified based on severity of air pollution problems. For each nonattainment class, the CCAA specifies air quality management strategies that must be adopted. For all nonattainment categories, attainment plans are required to demonstrate a five-percent-per-year reduction in nonattainment air pollutants or their precursors. Additionally, air districts in violation of CAAQS are required to prepare an Air Quality Attainment Plan (AQAP) that lays out a program to attain and maintain the CCAA mandates.

Table 4.3.3-1
National and California Ambient Air Quality Standards

Air Pollutant	Averaging Time	Units	CAAQS[a,b] Standards	NAAQS[a,c] Primary Standards	NAAQS[a,c] Secondary Standards
Ozone	8 hour[c]	Ppm	--	0.08	(i)
	1 hour[d]	Ppm	.09	0.12	(i)
Carbon Monoxide	8 hour	Ppm	9.0	9	(i)
	1 hour	ppm	20	35	(i)
Nitrogen Dioxide	Annual	Ppm	--	0.053	(i)
	1 hour	Ppm	0.25	--	--
Sulfur Dioxide	Annual	Ppm	--	0.03	--
	24 hours	Ppm	0.04	0.14	--
	1hour	Ppm	0.25	--	--
PM-2.5	Annual[e]	$\mu g/m^3$	--	15	(i)
	24 hours[f]	$\mu g/m^3$	--	65	(i)
PM-10	Annual[g]	$\mu g/m^3$	30	50	(i)
	24 hours[h]	$\mu g/m^3$	50	150	(i)
Lead	30 day	$\mu g/m^3$	105	--	--
	Calendar ¼	$\mu g/m^3$	--	105	(i)
Sulfate	24 hour	$\mu g/m^3$	25	--	--
Visibility Reducing Particulates	8 hour	--	(i)	--	--
Vinyl Chloride (chloroethane)	24 hour	Ppm	0.010	--	--
Hydrogen Sulfide (H_2S)	1 hour	Ppm	0.03	--	--

Sources: California Air Resources Board, Facts About Air Quality and 62 FR 38421 (Presidential Executive Order, dated July 16, 1997)

[a] Concentration expressed in the following units: ppm refers to parts per million by volume, and $\mu g/m^3$ is micrograms per cubic meter.

[b] California standards for ozone, CO, CO_2 (1-hour averaging period) NO_2 and PM-10 are not to be exceeded.

[c] The standard is evaluated on the 4th highest (dairy maximum) 8-hour average per year, averaged over 3 years.

[d] The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is equal to less than 1. Once attained this standard will no longer be in effect.

[e] The annual standard will be met when the 3-year average of the annual arithmetic mean PM-2.5 concentration is less than or equip to 15 $\mu g/m^3$.

[f] The 24-hour standard will be met when the 3-year average of the 98th percentile of 24-hour PM-2.5 concentration is less than or equal to 65 $\mu g/m^3$.

[g] The PM-10 annual standard is attained when the expected annual arithmetic mean concentration is less than or equal to 50 $\mu g/m^3$.

[h] The 24-hour PM-10 standard is based on the 99th percentile concentration averaged over 3 years.

[i] In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

[j] Same as primary standard.

Air districts have the primary responsibility for control of air pollution from all sources other than emissions directly from motor vehicles, which are the responsibility of the ARB and the EPA. The San Joaquin Valley Air Pollution Control District (SJVAPCD) has jurisdiction over air quality matters in the SJVAB. The SJVAPCD has adopted several attainment plans in an attempt to achieve State and federal air quality standards. The current applicable plans and their purposes are shown on Table 4.3.3-2.

Table 4.3.3-2
SJVUAPCD Air Quality Plans

SJVUAPCD Plan	Plan Purpose
1991 Air Quality Attainment Plan for the San Joaquin Valley	Establishes the regulatory groundwork in order to bring the SJVAB into compliance with the CAAQS for ozone and CO.
1992 Federal Attainment Plan for Carbon Monoxide	Establishes the regulatory groundwork in order to bring the SJVAB into compliance with the NAAQS for CO.
The Ozone Attainment Demonstration Plan	Establishes the regulatory groundwork in order to bring the SJVAB into compliance with the NAAQS for ozone. This plan also satisfies the required triennial review for the CAAQS.
PM-10 Attainment Demonstration Plan	Establishes the regulatory groundwork in order to bring the SJVAB into compliance with the NAAQS for PM-10.

As outlined above, both the ARB and EPA have established air pollution standards in an effort to protect human health and welfare. Geographic areas are designated "attainment" if these standards are met and "nonattainment" if they are not met. In addition, each agency may have several levels of classifications based on the severity of the problem. Current State and federal designations in the SJVAB for each criteria air pollutant are shown on Table 4.3.3-3.

A summary of air pollutant properties, effects and sources of greatest importance in the San Joaquin Valley is provided in Appendix J of this Report.

Table 4.3.3-3
SJVUAPCD Designations and Classifications

Criteria Pollutant	DESIGNATION/CLASSIFICATION	
	Federal	State
Ozone (O_3)	Nonattainment/Serious	Nonattainment/Serious
Carbon Monoxide (CO)		
-Fresno Urbanized Area	Attainment	Nonattainment/Moderate
-other urbanized areas[a]	Attainment	Attainment
-non-urbanized areas	Unclassified	Unclassified
Particulate Matter (PM-10)	Nonattainment/Serious	Nonattainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)		
-Kern County	Attainment	Attainment
-all other counties	Unclassified	Unclassified
Sulfates (SO_4)	>>No federal standard<<	Unclassified
Lead – Particulate	>>No designation<<	Attainment
Hydrogen Sulfide (H_2S)	>>No federal standard<<	Unclassified
Visibility Reducing Particles	>>No federal standard<<	Unclassified

Sources: Maps & Tables of the Air Designations for the State and National Ambient Air Quality Standards and Expected Peak Day Concentrations and Designation Values, Air Resources Board, January 1998; Classification letter, ARB Staff, March 16, 1993; ARB Action, November 9, 1994; ARB Action, November 21, 1996.
CO: [a] 40 CFR Parts 52 and 81 – Bakersfield Metropolitan Area, Stockton Urbanized Area and Modesto Urbanized Area redesignated attainment on march 31, 1998, effective June 1, 1998.

Dairy animal wastes can impact air quality through the generation of various gases (carbon dioxide, ammonia and methane), related odors, and visible and invisible dust particles. Manure decomposition and animal respiration result in the release of carbon dioxide. This gas is odorless and is not considered of concern unless the concentration rises about 5,000 ppm in poorly ventilated buildings. Dairy waste lagoon gas contains from 25 to 30 percent carbon dioxide. (U.C. Cooperative Extension, DMMS-4, 1993)

Ammonia:

Ammonia (NH_3) is a strong alkali that is a severe eye, ear and throat irritant. Ammonia reacts with nitrates and sulfates in the air to form ammonium nitrate that is a particulate less than or equal to 2.5 microns. Although there are currently no federal or State emission standards established for ammonia, it is a precursor of PM-2.5.

Ammonia emissions are important in atmospheric models because NH_3 is the most important alkaline constituent in the atmospheric boundary layer. NH_3 released from the ground into the atmosphere can have a significant effect on oxidation rates, particularly in clouds, and hence on deposition rates of acidic species. Ammonia

emissions from animal husbandry account for a significant portion of total NH_3 emissions in recent inventories. (EPA, 1994)

The Final Report of the *Development and Selection of Ammonia Emission Factors* prepared for EPA in August 1994, estimates of NH_3 emissions in the U.S. for animal husbandry, constituting approximately 90 percent of the total NH_3 emissions, can be attributed to the following sources:

Cattle and calves	43.4 %
Hogs and Pigs	10.1 %
Poultry	26.7 %
Sheep and lambs	0.7 %
Fertilizer Application	9.5 %
Total	90.4 %

This Report indicates that there are several factors that been shown to influence NH_3 emissions from livestock including:

- Nitrogen content of the feed and its relative share of different amino acids.
- Conversion factor between N in animal food and N in the meat and in the milk (which determines the amount of N waste available).
- Kind of animal and age/weight.
- Housing system.
- The manner in which the manure is stored (pile, open/closed tanks).

The Report further indicates that there are additional NH_3 emissions after the spreading of manure. Factors influencing these emissions include:

- Meteorological/climatological conditions: temperature, turbulence, air humidity and precipitation. Emissions generally increase with temperature and turbulence, but decrease with air humidity (which slows down the evaporation of water from manure, and leads to a lower concentration of NH_3 in the air, if the components are dissolved in manure) and during and after precipitation periods.
- Irrigation. If a field is irrigated, the manure is diluted and enters the soil at a larger rate, both of which lead to a lower emission.
- Properties of the soil (pH, calcium content, water content, buffer capacity and porosity, etc.). The emissions generally increase with increasing pH, calcium content, and porosity, but decrease with increasing buffer capacity and water content.
- Properties of the manure (pH, viscosity, content of dry matter). The emissions generally increase with increasing pH, viscosity and content of dry matter. A high viscosity prevents the manure or fertilizer from entering the soil.
- Amount applied per hectare. The fraction of N in manure which evaporates increases with the amount applied.

- The way of applying the manure or fertilizer, if the manure is injected, a much lower emission results.
- Time between spreading and plowing (for arable land). The emission is generally largest during the first hours after spreading. Ploughing shortly after spreading can reduce the emissions considerably.

The conclusions of the Report reflects a composite emission factor for cattle and calves as 22.9 kg NH_3 per animal per year. This converts to 50.49 pounds per animal per year. As noted above, there are many variables that can affect NH_3 emissions that are area specific. For example, the South Coast Air Quality management District conducted field measurements for ammonia emissions at five dairies within the South Coast Air Basin in 1995. The results of this study revealed that the average ammonia emissions was 20 pounds per year per cow for the late summer/early fall season and 11 pounds per cow per year for winter months. However, a recent update to this study currently under review by SCAQMD, revises the emission factor for dairy cattle to 50 pounds per head per year, consistent with the conclusions in the EPA report referenced above.

The studies described above relate to emission factors only. As stated earlier, currently there are no specific standards or thresholds established for ammonia. As a precursor to PM-10, ammonia is considered a secondary pollutant in that it is not directly emitted into the air but rather is created chemically in the air. Primary pollutants, those that are directly emitted into the air, are more localized. Secondary pollutants can result from imported pollutants that activate the chemical reactions. Calculating secondary impacts can, therefore, be very difficult and established standards for primary pollutants will not necessarily apply.

SJVAPCD is currently participating with CARB and other interest groups in a valley-wide PM study. The purpose of this study is to identify components and sources of various particulate which will lead to more efficient and scientific regulations. (O'Bannon, October 1999)

Methane:

Regulatory requirements for the reduction of methane emissions have not been established on the federal, State or local levels. Methane gas is, however, considered to be the second most significant greenhouse gas that contributes to global warming. Recognized as a worldwide problem, international efforts are being made to reduce the emission of greenhouse gases. Because global warming is not a regional issue, the responsibility for establishing standards and/or control measures would not be the responsibility of local air districts or state air resources boards.

On a global scale, human activities which contribute to atmospheric methane concentrations are rice agriculture (27 percent), Ruminant animals (20 percent), biomass burning (14 percent) coal mining (12 percent), oil and natural gas (11 percent), landfills (9 percent), and animal wastes, including ruminants and nonruminants (7 percent). Estimated contribution of U.S. animal waste to global methane emissions is 14.8 percent

of the global livestock waste emissions, translating to less than one percent of the methane emissions from human activities. It is estimated that U.S. dairy cattle wastes are responsible for 30 percent of U.S. emissions or less than 0.3 percent of global methane emissions. (U.C. Cooperative Extension, DMMS-4, 1993)

Ruminant animals produce methane emissions as part of their special digestive process. A portion of the feed material is converted into energy needed to support the maintenance and production (e.g., body tissue growth, milk, reproduction) of the animal. Feed that is not transformed into maintenance and production energy is converted into methane as a by-product. Methane is released through the animal's mouth and nostrils. Both increased feed intake and improved dietary composition can reduce methane emissions from ruminants.

Cattle that are efficiently productive generate less methane. The EPA has developed a voluntary Ruminant Livestock Efficiency Program that suggests management practices to improve livestock operations. These practices apply to both dairy and beef cattle. Techniques recommended under the program include improved grazing management, genetic improvements in breeding, strategic supplementation of diet, use of production-enhancing agents, and better disease control and herd health. Management practices addressing each of these areas are summarized below:

- A controlled grazing system can result in greater production of higher quality forage than with traditional grazing practices Controlled grazing requires a pasture to be subdivided into individual grazing units or paddocks that are alternately grazed and rested throughout the grazing season. The paddocks are grazed to keep plants in a "vegetative" stage (the stage just before seed production). This approach is easier to maintain an effective balance between forage demand and supply, resulting in improved harvest efficiencies.

- Controlling disease and improving herd health results in animals that are more efficient. Producers can control diseases and maintain herd health by the appropriate use of antibiotics, vaccines (given at appropriate times as a disease prevention measure) and other health maintenance products (e.g., dewormers). Health problems should be recognized quickly and sick animals should be isolated and treated to prevent the problem from spreading throughout the herd.

- Better nutrition through strategic supplementation of diets reduces methane emissions by enhancing weight gain, milk production and reproductive performance. Mineral and protein supplements should be used to correct deficiencies in the diet of both fed and grazing animals to make improvements in animal performance. When animals receive low-protein diets or graze on poor-quality pastures, supplements should be used. Examples of supplements include industry by-products such as molasses, sugar beet pulp, grape pomace, brewery waste, and distillers grains.

- Certain chemical agents can act directly to improve productivity in livestock and, as a result, reduce methane emissions. A number of pharmaceutical products have been developed to enhance beef and/or milk production (e.g., artificially-produced hormone bST to increase milk production in dairy cows, and anabolic steroids to improve productivity in beef cattle).

- Improved genetics can increase livestock productivity by enhancing desirable characteristics in herds. Genetic traits can be bred into animals that allow them to convert grains and roughage into meat, milk and other products more efficiently. Improved genetics combined with good management can increase reproductive efficiency of brood cows, resulting in higher birth rates and calf weaning weights and shorter intervals between calvings.

Methane is also generated from anaerobic decomposition of livestock manure. Animal wastes management practices involving anaerobic digester systems offer opportunities to recover methane for commercial energy production. Gases from organic wastes in dairy lagoons contain 65 to 70 percent methane and are estimated to produce from 6.7 to 40 standard cubic feet (SCF) of methane per pound of volative organic solids. Observations of Tulare County dairy lagoons showed a range of 10 to 20 SCF per cow daily from drylot flush systems and 43 SCF from freestall flush systems. Values depended on inflow and outflow of solids, quantity of added fresh water in the ponds and seasonal temperatures. (U.C. Cooperative Extension, DMMS-4, 1993)

Fugitive Dust:

Fugitive dust, both visible and invisible (because of its size PM-10 is sometimes referred to as "invisible" dust), can be associated with corrals as well as with general agricultural activities. Land preparation from both planting and post-harvest activities (e.g., disking, tilling, leveling, chiseling, plowing and other mechanical disturbances) release PM-10 emissions into the atmosphere. Wind blown dust across agricultural fields also releases PM-10 emissions.

Odors:

Odors associated with dairies principally come from manure and silage. The more detectable odors include ammonia, hydrogen sulfide and other sulfurous compounds, amines, organic acids, and heterocyclic nitrogenous compounds. Fresh and dried manures have distinct odors. Nuisance odors result from anaerobic bacterial activity that occurs during the fermentation of damp manure. A direct relationship exists between odor offensiveness and moisture conditions; nuisance complaints increase as manure moisture exceeds 35 percent. (U.C. Cooperative Extension, DMMS-4, 1993)

Milking parlor wastewater and solids separated mechanically from liquid manure have little odor. The surface (aerobic) layer of feedlot manure physically covers the odor-causing layer. The odors caused by fermentation of the underlying (anaerobic) layer are quite noticeable. Increasing the aeration by frequently scraping speeds drying

and eventually reduces odors. In addition, the surface lay of dairy waste ponds and lagoons generally traps odors from the lower anaerobic layer. Surface floatage, such as weeds growing on undigested manure solids, may increase the escape of odors. (U.C. Cooperative Extension, DMMS-4, 1993)

No federal standards or laws exist for specific odor control. This may be due, in part, to the inability to consistently quantify odor annoyance by concentration measurements alone. Nuisance from odor can be subjective and perception becomes critical. The environment to which a person becomes accustomed can influence one's perception to odor.

On a local level, dairy facilities are exempt from the SJVUAPCD Rules and Regulations (Rules 4101 §4.5 and 4102 §3.1) and California Health & Safety Codes §41704(g) and §41705. Because of this exemption status, new dairies would not be required to obtain a permit to construct or permit to operate from the SJVUAPCD regardless of project emissions.

ACFP Policies and Standards: ACFP Policies that specifically address air quality related issues are Locational and Animal Density Policies Nos. 4 and 5. Please refer to Chapter 3 of this Report for a complete recitation of these policies.

Policy No. 4 prohibits the establishment of new dairy or other animal confinement facilities within established Windshed Areas for residential and other urban uses. (Refer to Figure 4-21 for location of established Windshed Areas.)

Policy No. 5 prohibits new facilities within Micro-Windsheds of off-site residences and certain agricultural uses (established citrus grove, vineyard, deciduous fruit/nut orchard, or vegetable agricultural enterprise).

Standard Conditions of Approval (COA), also listed in their entirety in Chapter 3 of this Report, that specifically address related issues and implement the above referenced policies include COA Nos. 3, 5, 15, 24, 25, 28 and 29. Once conditions of approval are adopted by resolution for a specific dairy or other animal confinement facility, the applicant is required by County Ordinance to record the Planing Commission or Board of Supervisors resolution along with an "Acceptance Form" signed by the applicant agreeing to the conditions of approval. Noncompliance with any condition is grounds for enforcement activities which could lead revocation of the Special Use Permit.

Impact Evaluation Criteria: The recently revised State CEQA Guidelines indicate that a project may have a significant effect on the environment if it would:

- Conflict with or obstruct implementation of applicable air quality plans;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard;
- Substantially alter air movement, moisture, or temperature, or cause any substantial change in climate;
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people.

Additionally, SJVUAPCD's Guide for Assessing and Mitigating Air Quality Impacts (Guide) indicates that an impact resulting from construction activities would also be considered significant if feasible construction control mitigation measures, as identified in the Guidelines, were not implemented. The Guidelines further indicate that a project could have a significant air quality impact if project operations have the potential to frequently expose members of the public to objectionable odors and that dairies located within one mile from a sensitive receptor could generate odors that may be significant. A "sensitive receptor" is defined by the SJVUAPCD as a location where human populations, especially children, seniors, and sick persons are present, and where there is a reasonable expectation of continuous human exposure to pollutants, according to the averaging period for the ambient air quality standards, such as 24-hour, 8-hour, or 1-hour. Examples of sensitive receptors include residences, hospitals, and schools.

SJVUAPCD has established thresholds for certain criteria pollutants for determining whether a project's operation would have a significant air quality impact. These thresholds are reflected in Table 4.3.3-4. As noted earlier, dairies are exempt from SJVUAPCD rules and regulations and are not required to obtain a permit to construct or permit to operate. Therefore, the exceedance of an established significant threshold would not result in enforcement actions by SJVUAPCD. These thresholds may be used, however, for subsequent air quality analysis to determine significant impacts associated with individual animal operations.

Table 4.3.3-4
SJVUAPCD Significance Thresholds for Projects

Pollutant	Threshold of Significance
Reactive organic gas (ROG)	10 tons/year
Oxides of nitrogen (NO_X)	10 tons/year
Carbon Monoxide (CO)	9 parts per million (ppm) (8-hour average); 20 ppm (1-hour average)
Potential Odor Sources: Feed Lot/Dairy	1 mile from sensitive receptors

Because the entire SJVAB often violates state and federal ozone ambient air quality standards, any emissions related to an individual project, if substantial, will contribute to the existing violations of the ozone standards. "Substantial contribution" is defined by SJVUAPCD in terms of CCAA requirements as reflected in SJVUAPCD's Rule 2201. Rule 2201 sets emissions thresholds above which stationary pollution sources must offset

all emissions down to the thresholds. The offset thresholds vary depending on the severity of the pollution problem in each air basin and the type of pollutant.

As with ozone, the entire SJVAB is a serious nonattainment area for PM-10 and any addition to the current PM-10 problem could be considered significant. However, the SJVUAPCD has established regulations governing various activities that contribute to the overall PM-10 problem. Collectively called Regulation VIII, several components specifically address fugitive dust generated by construction related activities. SJVUAPCD has determined that any determination of significance with respect to construction emissions should be based on a consideration of the control measures to be implemented. From the perspective of the SJVUAPCD, compliance with Regulation VIII and implementation of other control measures for construction activities indicated in Appendix K will constitute sufficient mitigation to reduce PM-10 impacts to a level considered less-than significant.

Impacts:

It should be noted that dairies and other animal confinement operations are permitted in agricultural areas where land is usually already in production. It is known that agricultural planting and harvesting activities are a major contributor to the ambient air quality. However, when a special use permit is issued, the permit covers the animal operation only, not the associated agricultural operations. The analysis of pollutant emissions associated with agricultural practices is not, therefore, within the scope of this evaluation.

Impact #4.3.3-1: *Generation of emissions from construction activities.*

Discussion/Conclusion: Construction activities (grading associated with construction of corrals, sumps, buildings, etc., as well as emissions from construction equipment) will result in short-term emissions of ROG and NO_x, both precursors to ozone, and PM-10. Tulare County is designated as "Nonattainment" for ozone and PM-10 so that any increase in emissions would be considered to be significant; however, SJVUAPCD has established control measures for construction-related activities that are considered to be feasible mitigation for potential air quality associated impacts. Implementation of these control measures would reduce construction-related activities to **"less than significant with mitigation measures".**

Impact #4.3.3-2: *Increase in exhaust emissions (ROG, NO_x, CO) from operational equipment.*

Discussion/Conclusion: Use of equipment, e.g., tractors, feed trucks, pumps, typically associated with dairy or other animal confinement operations will result in an increase in exhaust emissions (ROG, NO_x, CO). Because most of the equipment used is diesel-fueled, control measures applicable to the reduction of construction activities can be utilized to reduce impacts associated with ROG and NO_x emissions. The main source of CO emissions would be from on-road motor vehicles. High levels of CO are more likely

to occur in urban areas as a result of heavy traffic volumes and congestion. Because the amount of increased traffic associated with animal operations in rural areas is minimal, the increase in CO emissions would, in turn, be minimal. The increase in exhaust emissions from operational equipment is considered to be "**less than significant with mitigation measures**".

Impact #4.3.3-3: *Increase in secondary pollutants (ROG, hydrogen sulfide, ammonia, etc.).*

Discussion/Conclusion: Because secondary pollutants result from chemical reactions in the area rather than being directly emitted, quantifying these pollutants can be difficult. This is especially true because some of the components attributing to the chemical reaction may actually be imported into the area rather than generated locally. Additionally, not all secondary pollutants have established thresholds for determining significance. However, these secondary pollutants are considered precursors to ozone and PM-10 emissions. Because Tulare County is classified as "nonattainment" for these pollutants, any increase in emissions would be considered a "**significant unavoidable impact**".

Impact #4.3.3-4: *Increase in methane emissions .*

Discussion/Conclusion: Methane generated during the cattle's digestive process is released through the animal's mouth and nostrils. However, the amount of methane generated is dependent on the type and quality of feed, feeding level and schedule, and overall animal health. Both increased feed intake and improved dietary composition can reduce methane emissions. Methane is also generated from decomposition of manure. It is feasible to recover methane from dairy lagoons for energy production with the use of anaerobic digester systems. There are, therefore, different measures that can be taken to reduce but not eliminate potential methane emissions. The introduction of additional animals will result in a correspondent increase in methane emissions which would be considered a "**significant cumulative impact**".

Impact #4.3.3-5: *Increase in fugitive dust emissions from dairy operations.*

Discussion/Conclusion: Dairies and other animal confinement operations have the potential, by their operational nature, to result in an increase in fugitive dust (PM-10) emissions. Typically sources include the movement of cattle in unpaved corrals. The use of free-stall type facilities where animals are kept on partially paved areas would reduce the amount of dust generated. For open corral operations, measures such as watering and/or utilizing a chemical stabilizer/suppressant can also reduce dust emissions. It should be noted, however, that watering open corrals, while possibly reducing dust emissions, can lead to increased fly and mastitis problems. There are, therefore, methods that can be incorporated into dairy operations that reduce dust emissions. However, because Tulare County is designated as "nonattainment" for PM-10 emissions, any increase in emissions would be considered a "**significant unavoidable impact**" based on the Impact Evaluation Criteria noted above.

Impact #4.3.3-6: *Exposure of sensitive receptors to substantial pollutant concentrations.*

Discussion/Conclusion: As previously noted, a sensitive receptor as defined by the SJVUAPCD, includes residences, hospitals, schools, etc. New dairy or other animal confinement facilities are permitted in remote agricultural areas away from urban uses. Additionally, ACFP policies Nos. 4 and 5 prohibit the establishment of new facilities within established windsheds of urban areas, a concentration of residences, public parks and schools. Exposure of sensitive receptors to substantial pollutant concentrations is, therefore, considered to be "**less than significant**".

Impact #4.3.3-7: *Creation of objectionable odors affecting a substantial number of people.*

Discussion/Conclusion: As with Impact #4.3.3-6 discussed above, dairies and other animal confinement facilities, by their nature, have the potential to create odors. Windshed areas applicable under ACFP policies Nos. 4 and 5, as well as standard conditions of approval applicable to individual special use permits, reduce the potential for odors associated with animal operations to affect a substantial number of people. This impact is considered to be "**less than significant**".

Mitigation Measures:

Mitigation Measure #4.3.3-1: Implementation of dust control measures as outlined in SJVUAPCD Regulation VIII and Enhanced and Additional Control Measures (reference Appendix J). Applies to Impacts #4.3.3-1, #4.3.3-2 , #4.3.3-3 and #4.3.3-5.

> **Effectiveness of Measure:** Because these specific control measures have been adopted by SJVUAPCD for dust control and construction activities, implementation of these measures is considered to be adequate mitigation.
>
> **Implementation/Monitoring:** This measure will be implemented through conditions of approval for individual special use permits. Enforcement of conditions of approval is the responsibility of Tulare County RMA.

4.3.3 BIOLOGY

Setting: From an historical perspective, natural vegetation for the portion of Tulare County located within the San Joaquin Valley can be classified as: California Prairie, Valley Oak Savanna, Riparian Forest, San Joaquin Saltbrush, Tule Marsh, and Blue-Oak-Gray Pine Forest. (U.S. Fish and Wildlife, 1998 Recovery Plan for Upland Species)

In 1996 a Preliminary Draft Habitat Conservation Plan (HCP) was prepared for western Tulare County encompassing the Valley floor as well as approximately 10,000 acres of the foothill area and about 250 acres of the foothill development corridors. The

purpose of the proposed HCP is to facilitate current and planned activities and provide for compliance with the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA). Data compiled for the HCP has been utilized to provide the biological setting for this EIR. The HCP, along with supporting surveys and documentation, is on file with the Tulare County Resource Management Agency.

The soils of western Tulare County are mostly deep alluvial soils, some with well-developed impervious layers or pans. Some are highly alkaline because the evaporation of water over thousands of years has resulted in the accumulation of dissolved solids. In general, the soils are excellent for agriculture and most of the study area has been farmed with little natural vegetation remaining. There are, however, some remnants that indicate the variety and richness of the plant communities in the county. Generalized descriptions of the presumed plant communities follow.

- Freshwater Marshes. Historic Tulare Lake extended into western Tulare County. A vast shallow lake, Tulare Lake's water's edge must have risen and fallen considerably from the spring runoff to the end of summer drought. It is speculated that permanent open water existed in Tulare County west of Highway 43, and that freshwater marsh with emergent vegetation was found west of Highway 43 from Allensworth northward to Highway 190. There are essentially no natural freshwater marshes remaining in Tulare County, although the marshes at Creighton Ranch, created by water impoundments related to agricultural water management, provide a hint of the appearance and structure of the historic marshes. The vegetation associated with freshwater marshes seems generally to be more dependent upon the water regime than the soil type on which is occurs. Variations in vegetation do occur under different conditions of alkalinity and salinity.

- Alkaline Grasslands and Shrublands. Iodine bush shrubland, consisting of a mix of iodine bush (*Allenrolfea occidentalis*), seepweed (*Suaeda* spp.), allscale (*Atriplex polycarpa*) and saltgrass (*Distichlis spicata*) ran in a broad band around the perimeter of Tulare Lake. These areas were subject to occasional flooding and frequent saturation. Dissolved solids have accumulated through evaporation to make the soils rather alkaline. Some iodine bush shrubland and associated plant communities remain in the Pixley-Allensworth area, with smaller areas in the vicinity of the Creighton Ranch.

  Sandy loam grassland, Haplopappus shrubland, and Atriplex polycarpa shrubland are plant communities typical of the sandy, rather neutral soils found east of the iodine bush communities in the southern part of the county. Dominant shrub species consisted of an open canopy including goldenbush (*Haplopappus* now *ISO coma acradenia*) and allscale (*Atriplex polycarpa*). Very little of these sandy loam-associated communities remain because of their suitability for agriculture. Because it supports scattered goldenbush, the Nature Conservancy's 40-acre Pixley Vernal Pools Preserve contains some elements of this type, but it is more representative of alkaline grasslands with vernal pools.

- Grasslands with Vernal Pools. Alkaline grasslands with vernal pools are found on alluvial fan floodplain soils, generally in association with existing streams such as Cottonwood Creek, Lewis Creek and Elk Slough. There is an impervious or slowly permeable subsoil "pan" that slows percolation of water; in low-relief areas, vernal pools form on these soils. As with grasslands elsewhere in the Central Valley, the native species have been largely replaced by non-native grasses in the genera *Bromus, Avena, Vulpia,* and *Hordeum*. Many native species, both grass and forb, annual and perennial, persist as subdominants, and a rich variety of native species dominate the vernal pools. Good examples of this plant community may be found in the Cottonwood Creek area.

  Terrace grasslands with vernal pools are found on older terrace soils located between the major drainageways in the central- and south-eastern part of the county. The subsoil "pan" in this plant community is often iron-silica rather than silica alone. Soils tend to be neutral to acidic. Native upland species have been largely replaced by non-native grasses in the genera *Bromus, Avena, Vulpia,* and *Hordeum*, but many native species persist as subdominants with a rich variety of native species dominating the vernal pools. Few examples of this plant community persist on the Valley floor.

- Valley Oak-dominated Forests and Woodlands. These plant communities consist of an open woodland to closed-canopy forest dominated by valley oak (*Quercus lobata*). They are found on deep, neutral soils prized for agriculture and were among the first soils to be farmed during the settlement period. The remnant examples of these soil types on the Valley floor are in areas somewhat prone to flooding. The extent of valley oak woodland is associated with soils following a broad band along the Kaweah River and its distributaries, as well as the Tule River and its alluvial fan. The primary example of valley oak-dominated forest and woodland lies east of Visalia and west of Kaweah Lake. Several hundred acres remain in a more or less natural state, some protected by conservation organizations such as The Nature Conservancy's Kaweah Oaks Preserve, and some which are owned by water districts.

- Great Valley Riparian Forest and Scrub. Several types of riparian forest occur or have occurred on the permanent rivers and streams of the Valley floor. The largest streams with permanent water support forests dominated by cottonwood (*Populas fremontii*), while smaller or intermittent streams support forests or thickets dominated by various species of willow (*Salix* spp.). A third type, sycamore woodland, tends to occur in gravely or sandy soils where water flow may alternate with dry periods but groundwater is available. Well-developed, though somewhat narrowed, stands of riparian forest and scrub may be found on all of the permanent waterways on the Valley floor: the Kings, Kaweah, Tule, St. Johns and White rivers, and Cottonwood, Deer, Mill, Packwood, Cameron, Deep, and Outside creeks.

- Annual Grasslands. Annual grasslands are found on the east side of the Project Area and extend into the foothills. They tend to occur on somewhat rolling topography.

Five areas were identified in the Draft HCP as having the highest conservation value based on the existing natural vegetation, presence of target species, biodiversity, relationship to protected areas, and potential for management and/or restoration. These five areas are described as follows:

AREA I: ALKALINE GRASSLANDS AND SHRUBLANDS. These lands are in the southwestern part of the county (generally from the Creighton Ranch southward, west of Highway 99 and mostly east of the Atchison Topeka and Santa Fe rail line). This area of high conservation value is further defined as all lands within one mile (as measured by section lines) of parcels identified as remnant natural habitat in the HCP data base. Within this area, three ranks of land have been identified, the first having the highest conservation value and the third having the lowest:

1. All remnant natural land, or any parcel of sufficient size and contiguity to connect two disjunct parcels of natural land.
2. Any parcel adjacent to natural land; any parcel within the area which has been restored or idled, and which has acquired natural land attriburtes or occupancy by species covered in the Section 10a permit.
3. Other Area I lands. These are, for the most part, currently in agriculture.

AREA II: VERNAL POOL GRASSLANDS. Most Area II lands are in the northwestern portion of the county, and fall within Township 17S and Ranges 23, 24 and 25E. Natural lands within Area II generally contain vernal pools. Much of this area follows Cottonwood Creek, although the conservation values protected here are associated with the vernal pools rather than the creek itself. Area II includes parcels surrounding these natural lands for a distance of 0.5 mile, extending out to the nearest quarter section. In decreasing order to conservation value, lands within Area II meet one of these criteria:

1. All remnant natural land, where the natural land parcel contains known populations of listed species or species restricted to vernal pools.
2. Remnant natural land and land in any use containing a known population of vernal pool species.
3. Other Area II lands.

AREA III: RIPARIAN HABITATS ALONG PERMANENT WATERWAYS. Area III lands are generally in the delta of the Kaweah and St. John rivers, from the eastern Urban Area Boundary of the City of Visalia to the eastern boundary of the HCP. This area contains the entirety of valley oak-dominated vegetation within the study area and some cottonwood, willow and sycamore-dominated types. Within this area, the three categories of conservation value are, in decreasing order:

1. All remnant natural land; and any parcel where Valley elderberry longhorn beetles are known to occur.
2. Any parcel along either river in any condition that includes the riverbank below Ordinary High Water (OHW).
3. Any other Area III lands.

AREA IV: RIPARIAN HABITATS ALONG INTERMITTENT WATERWAYS. Other riparian habitats within the county are, in decreasing rank of conservation value:

1. Other riparian parcels throughout the county, with existing riparian habitat, extending out to the OHW along perennial streams.
2. Riparian zones within existing Urban Area Boundaries.
3. Areas containing intermittent stream courses, as shown on U.S. Geologic Survey topographic quadrangles.

AREA V: ISOLATED SMALL PARCELS. Isolated parcels is the "catchall" term for areas where HCP-targeted species occur but which are not covered by any of the preceding designated areas. The following criteria do not rank conservation value, but identify areas that may satisfy compensation requirements for a particular habitat.

1. Any parcel with the only known population of species in the county.
2. Freshwater marshes.
3. Natural upland habitats with high levels of biological diversity.

Fifty-two species were covered by the Draft HCP, identifying species occurrences, habitat affinities, and the status of each species. This information was provided in Table 2-1 on page 2-6 of the HCP. This list was developed for the purpose of obtaining a Section 10a (FESA) and Section 2081 (CESA) permit for incidental taking. Appendix G to the HCP contains a description of the physical and ecological characteristics, habitat, geographic range, and occurrence within the HCP area for each species. As indicated above, the Draft HCP and supporting documentation are on file with the Tulare County Resource Management Agency.

Species and vegetation communities of concern located below the 600' elevation, based on the California Department of Fish and Game, Natural Diversity Data Base (CDFG, NDDB) are shown on Table 4.3.4-1. Descriptions of these biological resources of concern are included in Appendix L of this document.

Table 4.3.4-1
Plant and Wildlife Species of Concern
That May Occur on the Valley Floor
Tulare County, California

Scientific Name	Common Name	Status			
		Federal	State	CNPS	
Plants				CNPS List	CNPS R-E-D Code
Atriplex Cordulata	Heartscale	FSC	--	1B	2-2-3
Atriplex Minuscula	Lesser Saltscale	--	--	1B	3-3-3
Atriplex Persistens	Persistent-Fruited Saltscale	--	--	--	--
Brodiaea Insignis	Kaweah Brodiaea	FSC	SE	1B	2-2-3
Caulanthus Californicus	California Jewelflower	FE	SE	1B	--
Chamaesyce Hooveri	Hoover's Spurge	FT	None	1B	3-2-3
Delphinium Recurvatum	Recurved Larkspur	FSC	None	1B	1-2-3
Eryngium Spinosepalum	Spiny-Sepaled Button-Celery	FSC	None	1B	3-2-3
Mimulus Pictus	Calico Monkeyflower	None	None	1B	2-2-3
Orcuttia Inaequalis	San Joaquin Valley Orcutt Grass	FT	SE	1B	2-3-3
Pseudobahia Peirsonii	San Joaquin Adobe Sunburst	FT	SE	1B	2-3-3
Tuctoria Greenei	Greene's Tuctoria	FE	SR	1B	2-3-3

Status Codes:
FE = Federal Endangered
FT = Federal Threatened
FSC = Federal Species of Concern
SE = State Endangered
ST = State Threatened
SR = State Rare
CNPS = California Native Plant Society
1B = CNPS List 1B – Plants rare, threatened, or endangered in California and elsewhere
R-E-D Code = Rarity, Endangerment, Distribution Code (Skinner, N.W., and B. N. Pavlik (eds.). 1994. Inventory of rare and endangered vascular plants of California. Special Publication No. 1 (fifth edition). California Native Plant Society, Sacremento, CA.

Table 4.3.4-1 Con't.

Scientific Name	Common Name	Status		
Wildlife		Federal	State	CDFG Status
Accipiter Cooperii	Cooper's Hawk	None	None	SC
Ambystoma Californiense	California Tiger Salamander	FC	None	SC
Ardea Herodias	Great Blue Herron	None	None	--
Athene Cunicularia	Burrowing Owl	FSC	None	SC
Branchinecta Lynchi	Vernal Pool Fairy Shrimp	FT	None	--
Buteo Swainsoni	Swainson's Hawk	None	ST	--
Charadrius Alexandrinus Nivosus	Western Snowy Plover	FT	None	SC
Clemmys Marmorata	Western Pond Turtle	FSC	None	SC
Cypseloides Niger	Black Swift	None	None	SC
Desmocerus Californicus Dimorphus	Valley Elderbeery Longhorn Beetle	FT	None	--
Dipodomys Nitratoides Nitratoides	Tipton Kangaroo Rat	FE	SE	--
Gambelia Sila	Blunt-Nosed Leopard Lizard	FE	SE	--
Lepidurus Packardi	Vernal Pool Tadpole Shrimp	FE	None	--
Lytta Hoppingi	Hopping's Blister Beetle	FSC	None	--
Lytta Moesta	Moestan Blister Beetle	FSC	None	--
Lytta Molesta	Molestand Blister Beetle	FSC	None	--
Masticophis Flagellum Ruddocki	San Joaquin Whipsnake	FSC	None	SC
Perognathus Inornatus Inornatus	San Joaquin Pocket Mouse	FSC	None	--
Rana Boylii	Foothill Yellow-Legged Frog	FSC	None	SC
Scaphiopus Hammondii	Western Spadefoot	FSC	None	SC
Vulpes Macrotis Mutica	San Joaquin Kit Fox	FE	ST	--

Status Codes:

FE = Federal Endangered
FT = Federal Threatened
FSC = Federal Species of Concern
SE = State Endangered
ST = State Threatened
SR = State Rare
CDFG = California Department of Fish and Game
SC = Species of Concern

As part of the HCP process, focused biological surveys were conducted for eight target species in Tulare County in 1992. Because of the timing of the surveys, subsequent surveys for vernal pool fairy shrimp were conducted in 1993. The complete surveys are on file with the Tulare County Resource Management Agency. A summary of the survey results is provided in Table 4.3.4-2.

Table 4.3.4-2
Summary of Focused Biological Surveys
Tulare County, California

Scientific Name	Common Name	Historical Records	# of Field Surveys Conducted	# of Extant Populations
Caulanthus californicus	California Jewelflower	5	0	0
Tuctoria greenei	Greene's Tuctoria	1	0	0
Pseudobahia peirsonii	Tulare Pseudobahia (Adobe Sunburst)	18	7	14
Orcuttia inaequalis	San Joaquin V. Orcutt Grass	1	0	0
Lemertia congdonii	San Joaquin Woollythreads	1	0	0
Chamaesyce hooveri	Hoover's Spurge	3	2	4
Ambystoma tigrinum californiense	California Tiger Salamander	3 -	1 (1992) 1 (1993)	4 1
Branchinecta lynchi	Vernal Pool Fairy Shrimp	1 -	3 (1992) 11 (1993)	4 11
Branchinecta lindahl	Lindahl's Fairy Shrimp	-	3 (1993)	3
Branchinecta mackini	Mackin's Fairy Shrimp	-	2 (1993)	2

As reflected in Table 4.3.4-2, four of the targeted species are considered extirpated. For the species with an extant status, the occurrence reports were reviewed to determine if the sites were: located within the project area boundary; public or privately owned; located within a windshed area; and to ascertain land use. The results of this review are summarized in table 4.3.4-3.

During the 1992 surveys, several other special status species were observed. These species included: Keck's Checker Bloom (*Sidalcea Keckii*), presumed to be extinct; Recurved Larkspur (*Delphinium Recurvatum*), a Category 2 candidate for Federal Listing as Threatened or Endangered; Black Swift (*Cyseloides Niger*), CDFG species of special concern; Burrowing Owl (*Athene Curricularia*), CDFG species of special concern; and Western Spadefoot Toad (*Scaphiopus Hammondis*), no special status species.

Table 4.3.4-3
Extant Population Communities Within the Project Area

Common Name	Within Project Area	Public	Private	Within Windshed Or UAB	Land Use of Private Areas
Adobe Sunburst	4		4	4	Grazing
Hoover's Spurge	4	1	3	1	Grazing
California Tiger Salamander	5	1	4	1	Grazing
Vernal Pool Fairy Shrimp	12	4	8	3	Grazing
Lindahl's fairy shrimp	3	1	2	0	Grazing
Mackin's fairy shrimp	3	0	3	0	Grazing

There is approximately 70,535 acres of native land in Tulare County, of which 56,000 acres are under private ownership. (Refer to Figure 4-19) The following conservation areas are located within the Project Area:

- Pixley National Wildlife Reserve is managed to provide habitat for three endangered species: San Joaquin kit fox, Tipton kangaroo rat, and the blunt-noised leopard lizard. The blunt-nosed leopard lizard and Tipton kangaroo rat live in the well-drained upland areas of short grasses and low bushes interspersed with bare ground. Cattle grazing is used to maintain the sparsely vegetated grasslands preferred by these species. For protection of the species, no public access is allowed. The western part of the refuge supports marshes and attracts wintering water fowl and shorebirds. There are some remnants of vernal pools but these are not a primary focus of management. (Tulare County DHCP)

- Located in the southwestern part of the county, the Allensworth Management Area includes the Allensworth Ecological Reserve, owned and managed by CDFG, and nearby land identified as having high conservation value but which is not in protected status. Consisting of alkaline grasslands and scrublands, the Reserve is managed primarily for the benefit of listed species and their habitats, but is also used for nature study. Limited grazing by sheep is the main means of vegetation control with burning usually used only in preparation for re-establishing microtopography in areas that have been leveled for irrigated farming. (Tulare County DHCP)

- The Stone Corral Ecological Reserve, owned and managed by CDFG, is located in the northern portion of the project area, east and slightly north of Cottonwood Creek. Consisting of grassland/vernal pool complexes, the reserve is managed primarily for the benefit of listed species and their habitats, but is also used for nature study. Burning is the preferred method of vegetation control with cattle and sheep grazing secondary. (Tulare County DHCP)

- The Kaweah Oaks Preserve, located near the Kaweah River east of Visalia, contains 324 acres owned by the Nature Conservancy. Managed by the Four Creeks Land Trust, activities include limited grazing in the meadow areas for vegetation control and removal of exotic plant species. The Preserve is utilized for nature study and casual hiking. (Tulare County DHCP)

- Creighton Ranch Preserve is located on the north side of Avenue 144, east of Highway 43. This area was previously leased to The Nature Conservance but has now reverted back to private ownership (the Boswell Company).

The Central Valley Project Improvement Act (CVPIA), enacted by Congress on October 30, 1992, authorized the Department of Interior's Land Retirement Program. Under the land retirement program, lands are permanently taken out of irrigated agricultural production in an effort to reduce irrigation drainage problems. By eliminating the application of irrigation water, the amount of subsurface drainage water produced is reduced. The amount of salts and other solids passing into the drainage water would also be reduced because less water moving through the soil profile so less leaching would occur. Reductions in the amount of agricultural drainage, and resultant improvements to subsurface water quality will benefit anadromous fish , non-anadromous fish, wildlife and associated habitat in the San Joaquin Valley and Sacramento-San Francisco Bay delta. Additionally, retired agricultural lands, once rehabilitated, may provide native upland habitat for declining wildlife populations and may contribute to recovery of sensitive, threatened or endangered species. (Draft Environmental Assessment, USDI, CVPIA, Land Retirement Program, 1999)

Under the Land Retirement Program, approximately 8,000 acres are proposed for acquisition in the Tulare Lake Basin, in eastern Kings and western Tulare counties in the Atwell Island and Alpaugh Water Districts. The Program is voluntary and no condemnation is authorized under the program. To be eligible, the land must receive Central Valley Project (CVP) water and owners must be willing to sell land, water or other property interests.

The Federal Endangered Species Act (FESA) protects federally-listed threatened and endangered species. Section 9 of FESA prohibits acts that may result in a "take" of threatened or endangered species. "Take" is defined as killing, harming or various forms of harassment, or trying to harass, listed species. "Harm" has further been defined to include killing or injuring due to significant obstruction of essential behavioral patterns, such as breeding, feedings, or sheltering, or through significant habitat modification or degradation. Penalties may be assessed for violation of this section of FESA.

Two sections of FESA allow for "take" that is incidental of otherwise lawful activities. Under Section 7 of FESA, a federal agency that proposes to conduct, fund, or approve an action that may result in "take" of listed species is required to consult with the U.S. Fish and Wildlife Service (USFWS). This consultation results in a paper called a Biological Opinion that includes either a "jeopardy" or "non-jeopardy" decision issued to

the consulting federal agency. If it is a non-jeopardy decision, then typically, authorization is issued for "incidental take" of the species. Section 10(a) of FESA provides for a process to permit a State or private action that may result in "take". Under Section 10(a), a project proponent must draft a Habitat Conservation Plan for the affected species, and publish notification of the application for a permit in the Federal Register. This is typically done when the notice for public comment is published for the National Environmental Policy Act documentation for the issuance of the permit.

The California Endangered Species Act (CESA) requires permit(s) if impacts are expected to California-listed rare, threatened, or endangered species and their habitat. Any person or persons potentially causing impacts to listed species must enter into a management agreement with the California Department of Fish and Game (CDFG). The management agreement would specifically define the permitted activities and what the applicant must do to avoid, minimize, enhance, and restore habitat for the affected species.

ACFP Policies and Standards: There are no ACFP policies or standard conditions of approval that directly relate to biological resources issues.

Impact Evaluation Criteria: The recently revised State CEQA Guidelines indicate that a project may have a significant effect on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by CDFG or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources such as a tree preservation policy or ordinance;
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approval local regional, or state habitat conservation plan.

Impacts:

Impact #4.3.4-1: *Loss and/or degradation of habitat.*

Discussion/Conclusion: Conversion of native or naturalized sites (such as native pasture or rangeland) to dairy facilities and cultivated agriculture for disposal of dairy wastewater could significantly reduce their value for wildlife. As shown in the results of the biological surveys performed for the HCP, the extant populations were found on land classified as grazing. For the land that is not publicly owned and/or located within an established refuge, preserve or reserve, conversion of grazing or rangeland could occur. The amount of land associated with actual improvements (barns, corrals, sumps, etc.) is typically only 15-20 percent of the total site (based on review of existing facilities under use permit). Once land is converted to irrigated agriculture, however, native habitat would be displaced. The loss and/or degradation of habitat would be considered potentially significant on both a project specific and cumulative level, however, measures can be incorporated into individual projects to reduce this impact to **"less than significant with mitigation"**.

Impact #4.3.4-2: *Loss and/or degradation of vernal pools and other wetlands.*

Discussion/Conclusion: As with the discussion of habitat loss/degradation under Impact #4.3.4-1, extant populations of targeted species exist in areas of pasture or rangeland. Conversion of these native or naturalized sites to irrigated agriculture or animal facility improvements would be considered potentially significant on both a project specific and cumulative level, however, measures can be incorporated into individual projects to reduce this impact to **"less than significant with mitigation"**.

Impact #4.3.4-3: *Loss and/or degradation of riparian habitat.*

Discussion/Conclusion: Well-developed stands of riparian forest and scrub may be found on all of the permanent waterways on the Valley floor. Projects that result in the removal of or disturbance to riparian habitat can have substantial impact on wildlife resources. The loss and/or degradation of riparian habitat would be considered potentially significant on both a project specific and cumulative level, however, measures can be incorporated into individual projects to reduce this impact to **"less than significant with mitigation"**.

Impact #4.3.4-4: *Injury or mortality to listed species.*

Discussion/Conclusion: Construction of dairy or animal confinement facilities could result in the entombment or entrapment of burrowing animals. Native plant populations would be lost once lands are developed and/or cultivated. The loss of or injury to listed species would be considered potentially significant on both a project specific and cumulative level, however, measures can be incorporated into individual projects to reduce this impact to **"less than significant with mitigation"**.

Impact #4.3.4-5: *Interference with the activities of night-active wildlife.*

Discussion/Conclusion: Lighting can disrupt the foraging activities of night-active species. Lighted facilities adjacent to wildlife preserve areas, riparian habitat or other native lands would be particularly disruptive to night-active wildlife. This impact is considered "**less than significant with mitigation**".

Mitigation Measures:

Mitigation Measure #4.3.4-1: Prior to approval of a development project, biological surveys, conducted by qualified biological specialists, shall be required for properties that: contain pasture or rangeland; have waterways traversing or adjacent to the property; are located with a one mile radius of an established refuge/preserve/reserve, or native/naturalized areas. The surveys shall be conducted in compliance with U.S. Fish and Wildlife Service and the California Department of Fish and Game Survey Guidelines (Refer to Appendix S of this document for these Guidelines.) Based on the results of the survey, the biologist shall recommend measures to avoid or minimize impacts on identified biological resources. These measures may include, but are not limited to, setting aside habitat on-site or providing protection of habitat in another location; locating project features at least 100 feet away from stream banks, lakes and riparian habitat; providing appropriate buffers to protect any watershed into vernal pools and other wetlands; and designing dairy projects in flood prone areas so that sensitive resources on and off the site will not be inundated with dairy waste or wastewater during flood events. Applies to Impacts #4.3.4-1, #4.3.4-2, #4.3.4-3 and #4.3.4-4.

Effectiveness of Measure: Conducting biological surveys when development is proposed on potentially sensitive lands will ensure that if special habitat or species of concern do occur on proposed development sites, appropriate mitigation measures for species identified will be incorporated into the individual projects.

Implementation/Monitoring: The requirement for biological surveys will be determined at the time of submittal of special use permit applications for specific development proposals. The determination that a survey will be required will be based on location of the specific site in proximity to known sensitive areas and consultation with CDFG and USFWS. Tulare County RMA will have the responsibility for consulting with agencies and for requiring the survey. CDFG and USFWS will be responsible for reviewing the surveys and validating site/species specific mitigation measures.

Mitigation Measure #4.3.4-2: Project-related lighting should be minimized and directed away from sensitive areas.

Effectiveness of Measure: Minimizing and/or directing lighting away from sensitive areas will ensure that disruption of night-active species will not occur.

Implementation/Monitoring: This measure will be implemented through conditions of approval for individual special use permits. Monitoring will be by Tulare County RMA.

4.3.4 AGRICULTURE AND LAND USE

Setting: As reflected on Figure 4.3, land within the Project Area is designated for "Agriculture" by the Rural Valley Lands Plan (RVLP) of the Tulare County General Plan. The RVLP was adopted as part of the Land Use Element of the Tulare County Area General Plan in order to:

- Establish minimum parcel sizes for areas zoned for agricultural activities in order to maintain and protect the agricultural viability of these activities, taking into consideration such things as existing land use and cropping patterns, land capability ratings for agriculture, and the occurrence of agricultural preserves; and

- Determine the suitability for nonagricultural zoning based on unique circumstances.

To evaluate a parcel's suitability for nonagricultural zoning, or to determine whether the minimum parcel size requirement for agricultural zoning classifications should be changed, a point evaluation system is utilized. In addition to determining whether land is "restricted to agriculture" because it is within an Agricultural Preserve and under Williamson Act Contract or has severe limitations for individual waste disposal systems, this evaluation system addresses fifteen (15) factors including:

1. Land capability rating classification
2. Existing parcel size
3. Existing land use/suitability for cultivation
4. Surrounding parcel size
5. Surrounding land use
6. Proximity to inharmonious uses
7. Proximity to land in Agricultural Preserves
8. Level of ground water and soil permeability
9. Proximity to fire protection facilities
10. Access to paved roads
11. Historical sites, archaeological sites, wildlife habitats and/or unique natural features
12. Flood prone areas
13. Availability of community domestic water and/or fire flow requirements
14. Surface irrigation water
15. Groundwater recharge potential

Figure 4-4 reflects the applicable zoning classifications within the Project Area. A comparison of the zoning map (Figure 4-4) with Figure 4-10 (Lands Encumbered by Animal Operations) shows that the majority of dairies and other animal confinement facilities are located in areas zoned AE-40. A comparison of Figure 4-4 (Zoning Map)

and Figure 4-19 (Vegetation of Concern) further reflects the correlation between cropping patterns and zoning designations. Although there will be exceptions, most permanent crops, e.g., orchards, vineyards, are located in areas zoned AE-20 or AE-10; lands devoted to row and field crops are in AE-40 or AE-80 zoned areas. Acreage by agricultural zoning classification for the Project Area is shown on Table 4.3.5-1.

Table 4.3.5-1
Acreage of Agricultural Zoning for the Project Area

Agricultural Zoning Classification	Acres
AE (Exclusive Agricultural, 5 acre minimum)	3,020
AE-10 (Exclusive Agricultural, 10 acre minimum)	24,412
AE-20 (Exclusive Agricultural, 20 acre minimum)	198,998
AE-40 (Exclusive Agricultural, 40 acre minimum)	493,668
AE-80 (Exclusive Agricultural, 80 acre minimum)	39,497
A-1 (Agricultural)	1,705

Dairies and other animal confinement facilities are permitted in the following zoning classifications, subject to the granting of a Special Use Permit:

- AE (Exclusive Agricultural, 5 acre minimum parcel size) {dairies only}
- AE-20 (Exclusive Agricultural, 20 acre minimum parcel size)
- AE-40 (Exclusive Agricultural, 40 acre minimum parcel size)
- AE-80 (Exclusive Agricultural, 80 acre minimum parcel size)
- A-1 (Agricultural, 5 acre minimum parcel size)

Section 16 of the Tulare County Zoning Ordinance, Ordinance No. 352, as amended from time to time, states that:

> A Special Use Permit shall be granted only if it is found that the establishment, maintenance and operation of the use of building or land applied for will not, under the circumstances of the particular case, be detrimental to the health, safety, peace, morals, comfort and general welfare of persons residing or working in the neighborhood or to the general welfare of the County. Special Use Permits may be granted subject to such conditions as well insure compliance with the aforementioned standards.

Pursuant to Section 18 of the Tulare County Zoning Ordinance, all special use permits shall automatically expire and become null and void two (2) years after the date it was granted unless the use authorized by the permit has actually commenced. Time extension(s) may be granted for commencing the use providing the extension requests are made prior to the permit expiration. Additionally, if a use or operation approved under a Special Use Permit is discontinued or abandoned, the Use Permit shall expire and become null and void if the use is not restarted within a two (2) year period. However, an applicant can apply for an extension of the expiration of use in the manner set forth in the Zoning Ordinance.

Section 18 also stipulates that the approval of a Special Use Permit may be revoked or modified upon a finding of one or more of the following:

- That such permit or variance was obtained or extended by fraud.
- That one or more of the conditions upon which such permit was granted has been violated.
- That the use for which the permit was granted is so conducted as to be detrimental to the public health, welfare, or safety, or as to be a nuisance.

The predominant land use within the Project Area is irrigated agriculture. Table 4.3.5-2 reflects an estimate of the acreage devoted to various crop types.

Table 4.3.5-2
Crop Types/Vegetation within the Project Area by Acreage

Crop Types/Vegetation	Acres
Citrus	100,453
Deciduous Nut Trees	49,746
Deciduous Fruit Trees	57,419
Olives	16,078
Vineyards	87,072
Avocados	552
Kiwis	1,520
Row/field crops	218,603
Native or naturalized rangeland	70,535
Lands encumbered by animal facilities (includes crop area used for waste disposal)	126,501

Tulare County participates in the Williamson Act Program enacted by State legislation. Under this voluntary program, counties and cities designate areas for agricultural preserves and offer tax benefits based on a property's agricultural use value, rather than its market value. In return for the preferential tax rate, the landowner is required to sign a contract with the county or city, agreeing to keep the land in agricultural use for a ten-year period. Once a contract is executed, each year it is automatically renewed for an additional year so that the ten-year period is maintained in perpetuity. A contract can be terminated by filing a notice of nonrenewal, in which case the contract is not automatically renewed and expires in nine years, or under special circumstances, the contract can be cancelled if determined by the local jurisdiction to be consistent with the intent of the Williamson Act.

Pursuant to State law, jurisdictions participating in the Williamson Act Program must adopt Uniform Rules identifying agricultural uses and other uses that are compatible with agricultural uses. In the case of Tulare County, adopted Uniform Rules mirror the

uses established under the underlying zoning classification for each contracted parcel. These uses include allowed and permitted uses determined to be compatible when approved through the use permit process. Dairies and other animal confinement facilities are considered "agricultural uses" under Tulare County's Uniform Rules.

Currently there are 1,111,718 acres under Williamson Act contract in the county. Contracted lands are reflected on Figure 4-20.

The Tulare County Board of Supervisors recently adopted ordinances establishing Farmland Security Zones (FSZ) for the county. Referred to as "Super Williamson Act", contracts executed pursuant to the FSZ program are valid for a twenty-year period. In order to be eligible to participate in the FSZ program, property must already be under Williamson Act contract and located within three miles of a Sphere of Influence of an incorporated city. Uniform rules have also been adopted for FSZ lands which includes dairies and other animal confinement facilities.

In 1990 Tulare County adopted a "Right To Farm" Ordinance (Ordinance 2931). The purpose and intent of this Ordinance is to prevent the loss to the County of its agricultural resources by conserving, enhancing and encouraging agricultural operations and to minimize potential conflicts between agricultural and non-agricultural land uses. "Agricultural operations" are defined in the ordinance to "mean and include, but not be limited to, the cultivation and tillage of the soil, dairying, the production, irrigation, frost protection, cultivation, growing, harvesting and processing of any agricultural commodity, including timber, viticulture, apiculture, or horticulture, the raising of livestock, fur bearing animals, fish, or poultry, and any commercial agricultural practices performed as incident to or in conjunction with such agricultural operations, including preparation for market, delivery to storage or to market, or to carriers for transportation to market".

Pursuant to this ordinance, a "Right To Farm Notice" must be: recorded with all deeds or land sale contracts in agricultural areas; issued to all applicants for building permits for new residential construction in agricultural areas; and recorded with all discretionary permits (parcel maps, subdivision maps or use permits) relating to agricultural uses and/or located in agricultural areas. The Right To Farm Notice reads as follows:

> "Tulare County Right To Farm Notice". It is the declared policy of Tulare County to conserve, enhance, and encourage agricultural operations within the county. Residents of property on or near agricultural land should be prepared to accept the inconveniences and discomfort associated with agricultural operations, including, but not necessarily limited to: noise, odors, fumes, dust, smoke, insects, operation of machinery (including aircraft) during any 24 hour period, storage and disposal of manure, and the application by spraying or otherwise of chemical fertilizers, soil amendments, herbicides and pesticides. Consistent with this policy, California Civic Code Section 3482.5 provides that no agricultural

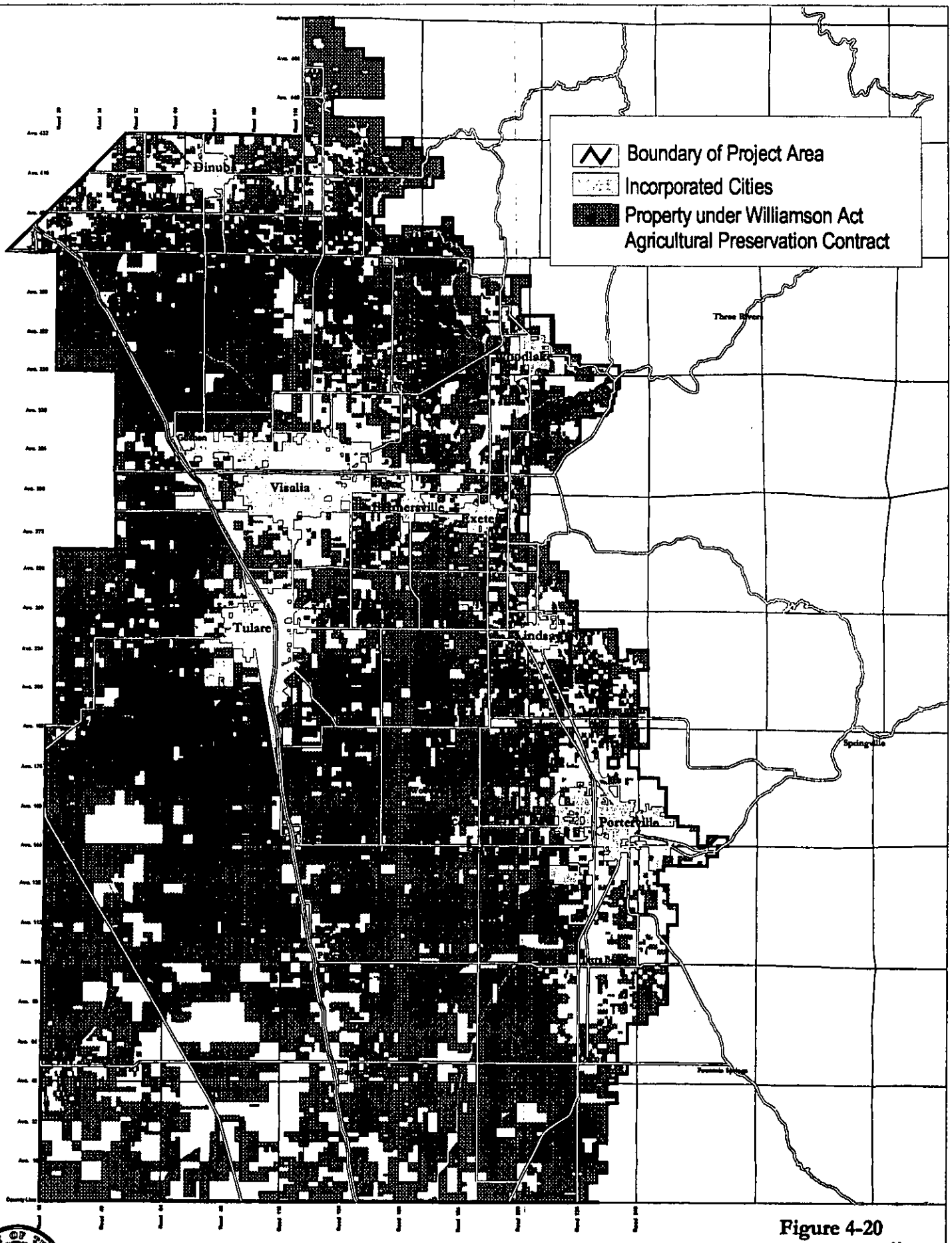

Figure 4-20

Agricultural Preserves

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operation, as defined and limited by that section, conducted and maintained for commercial purposes, and in a manner consistent with proper and accepted customs and standards, as established and followed by similar agricultural operations in the same locality shall be or become a nuisance, private or public, due to any changed condition in or about the locality, after the same has been in operation for more than three years if it was not a nuisance at the time it began.

ACFP Policies and Standards: ACFP Policies that specifically address issues related to agriculture and land use are Locational and Animal Density Policies Nos. 3, 4 and 5. Please refer to Chapter 3 for a complete citation of these policies.

Policy No. 3 establishes minimum separation requirements between dairy and other animal confinement facilities. These separations are intended to avoid potential nuisance problems and disease transmission between herds.

Policy No. 4 prohibits the establishment of new dairies or other animal confinement facilities within established Windshed Areas of incorporated and unincorporated communities or other qualifying residential concentrations.

Policy No. 5 establishes minimum distances (micro-windsheds) for off-site residences and established groves, orchards, vineyards or vegetable agricultural enterprises.

Impact Evaluation Criteria: The recently revised State CEQA Guidelines indicate that a project may have a significant effect on the environment if it would:

- Convert prime farmland to nonagricultural use;
- Conflict with existing zoning for agricultural use or a Williamson Act contract;
- Convert farmland to non-agricultural use or adversely affect agricultural resources or operations;
- Conflict with any applicable land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect;
- Result in land use conflicts.

Impacts:

Impact #4.3.5-1: *Conversion of farmland.*

Discussion/Conclusion: Construction of improvements associated with dairies and other animal confinement facilities will result in the reduction in cropland by removing that area from production. The area required for construction of improvements typically is less than 15 percent of the total site area (based on a comparison of existing permitted operations). Although construction of improvements may remove land from actual production, animal facilities are considered agricultural operations. This impact is considered to be "**less than significant**".

Impact #4.3.5-2: *Conflict with zoning regulations, Williamson Act or land use plans or policies.*

Discussion/Conclusion: As noted earlier, dairies and other animal confinement facilities are permitted in Exclusive Agricultural Zones, upon the granting of a Special Use Permit. The Use Permit provisions of the Zoning Ordinance allows for animal operations to be considered on a case-by-case basis and approved subject to conditions deemed appropriate based on individual circumstances. Additionally, dairies and other animal confinement facilities are considered to be "agricultural uses" under the provisions of the Williamson Act. The Animal Confinement Facilities Plan includes policies that, once adopted, will avoid or eliminate potential environmental concerns associated with these operations. This impact is considered to be "**less than significant**".

Impact #4.3.5-3: *Potential land use conflicts.*

Discussion/Conclusion: Animal operations, if not properly sited, can result in potential land use conflicts, not only between agriculture and non-agricultural (residential) uses but also between agricultural operations. Animal operations, if located too close to other animal operations can lead to the spread of disease. Locating animal operations too close to permanent crops (groves, orchards, vineyards) and certain vegetable crops increases the potential for flies and dust which result in sanitation, cosmetic, and annoyance issues. Also, as noted in Section 4.3.4, Biology, land use conflicts can result if animal operations are located too close to biologically sensitive areas. This impact is considered to be **"less than significant with mitigation".**

Mitigation Measures:

Mitigation Measure #4.3.5-1: Adoption of ACFP policies that require adequate separation between animal operations and prohibit new operations to be established within Windshed Areas as shown on Figure 4-21. Applies to Impact #4.3.5-3.

> **Effectiveness of Measure:** ACFP policies require a minimum of one-half mile separation between new dairies and other animal confinement operations (feedlots, swine, poultry or other animal raising operations). New facilities will be prohibited within established Windshed Areas which: extend one mile from adopted UABs/UDBs/UIAs, and areas zoned for residential use; contain primary floodplains or sink holes; extend 1,000 feet from public parks or school grounds; or extend one-half mile from a concentration of ten (10) or more dwellings. Additionally, new facilities will also be prohibited within the "Micro-Windshed" of off-site residences, citrus groves, deciduous fruit/nut orchards, or vegetable agricultural enterprises.
>
> **Implementation/Monitoring:** Upon adoption of the ACFP, new facilities will be required to comply with policies as noted above. For existing facilities, any expansion will be subject to the new policies and standards. Monitoring of

compliance with the policies and standards falls within the umbrella of the use permit process conducted by Tulare County RMA.

Mitigation Measure # 4.3.5-2: Elimination of dairies and other animal confinement facilities from the list of "Special Uses" for the A-1, AE, AE-20 and AE-80 zones, and adding to the list of "Special Uses" for the AE-20 and AE-80 zones "Lands allocated to nutrient waste disposal for dairies and other animal confinement facilities".

Effectiveness of Measure: As previously discussed, the majority of permanent crops in the county are located in areas zoned AE-20. A significant percentage of the AE-80 zoned portions of the Project Area contain native or naturalized range land. Amending the Zoning Ordinance as proposed would further reduce the possibility of land use conflicts between animal operations and permanent crops and sensitive habitat. This measure would preclude locating the actual animal operations in certain areas but would not restrict the use of agricultural cropland from receiving nutrient waste from these facilities.

Implementation/Monitoring: Amendment to the Zoning Ordinance requires initiation by the Planning Commission or Board of Supervisors. Prior to amendment, a public hearing is required before the Planning Commission can forward a recommendation to the Board of Supervisors. Final adoption of a Zoning Ordinance Amendment is the responsibility of the Tulare County Board of Supervisors

4.3.6 HAZARDS

This section evaluates potential public health and environmental risks associated with aspects of dairy and other confined animal operations that have not been discussed in other sections of this report. Please refer to Section 4.3.1 for a discussion of potential health hazards associated with soil, groundwater and surface water degradation/contamination, and Section 4.3.3 for a discussion of potential hazards associated with air quality. Section 4.5.5 provides a listing of effects found not to be significant and those effects found to be less than significant and require no mitigation.

Pest challenges for dairy operations include controlling flies, mosquitoes and gnats. These pests have the potential to transmit disease to animals and humans. Insect pests proliferate where the combination of moisture, nutrients and warmth exists. (UC Cooperative Extension, Dairy Manure and Pest Management) The housefly and stable fly are the two most common species of flies found on dairies. Both breed readily in decaying organic matter (moist manure or grain found around feed bunks). Besides being a nuisance and spreading disease agents, biting stable flies may cause direct economic loss to the dairy industry relating to depressed feed intake and reduce milk yield and quality.

Gnats are tiny flies that are beyond just being bothersome because of the blood feeding habits of some species. Of particular concern is the transmission of blue tongue

disease in wild and domestic ruminants. Blue tongue disease can cause abortions in cattle and sheep. Gnats lay eggs in the surface mud at the edge of water and hatch in 3 days. The entire life cycle is 18 to 35 days in warm weather and 6 to 8 weeks during cooler temperatures. Steep-sided dairy ponds and lagoons and frequent raising and lowering of the waterline, are effective controls. These circumstances reduce the "beach" area available to the gnats and either flood or dry out their habitat. Observations on cultural management to reduce gnats show that shallow ponds and evaporation beds often have more gnat propagation than deeper, permanent, steep-side wastewater facilities. (UC Cooperative Extension)

One of the most prevalent of all the mosquitoes in California is the *Culex tarsalis* mosquito which by instinct feeds upon wild birds and domestic fowl. In the absence of sufficient avian populations, they will feed on cattle, horses and humans. This species breeds in the wastewater lagoons of animal confinement facilities and is the primary vector transmitting Western Equine and St. Louis viruses, forms of infectious encephalitis (an inflammation of the brain). The Delta Vector Control District has trapped this species in the adult stage at a variety of wastewater lagoons in Tulare County. (Michael Alburn, April 1999) A listing of mosquito trap captures for the District between 1994 through 1998 is provided as an attachment to correspondence dated 4/9/99 from Delta Vector Control District in response to the Notice of Preparation included within Appendix F.

The southern house mosquito, *Culex pipiens quinquefaciatus*, is so named because it enters the house and bites indoors. It thrives in urban areas and is closely associated with human activities and dwellings. The larvae of this species can tolerate extremely foul or polluted waters and flourishes in dairy wastewater lagoons. Adult mosquitoes infected with the encephalitis virus have been found in California. This species is considered a secondary source for the transmission of the St. Louis virus. (Michael Alburn, April 1999)

Improperly managed wastewater lagoons (e.g., floating vegetative masses, improper solid separation, ineffective vegetation management) are not only conductive to vector breeding but also make attractive nesting sites to many bird species. Grain and other feed that is readily available at animal confinement facilities attracts many species of birds, including: house sparrows (*Passer domesticus*), pigeons (*Columba livia*), scrub jays (*Aphelocoma coerulescens*), American goldfinches (*Carduelis tristis*), robins (*Turdus migratorius*), catbirds (*Dumetella carolinensis*), flickers (*Colaptes auratur*), mockingbirds (*Mimus polyglottos*), starlings (*Sturnus vulgaris*), Brewer blackbirds (*Euphagus cyanocephalus*), red wing blackbirds (*Agelaius phoeniceus*), and meadowlarks (*Sturnella neglecta*). Encephalitis virus exists primarily as an infection of birds, transmitted by mosquitoes. All the species listed are potential amplifying hosts. (Michael Alburn, April 1999)

The expansion of mosquito abatement districts has also been instrumental in reducing mosquito-breeding sites. It should be noted, however, that each specific abatement district has authority only within its boundaries. There are four mosquito

abatement district within the county: Delta Vector Control District, Tulare Mosquito Abatement District, Kings Mosquito Abatement District, and Delano Mosquito Abatement District. District boundaries are shown on Figure 4-22. As reflected in Figure 4-22, there is an area in the eastern part of the Project Area, surrounding the City of Lindsay and extending south to Terra Bella, which is not with an abatement district service boundary. A comparison of Figure 4-22 and Figure 4-4 (Zoning Map) reveals that much of this area is either within an urban area, or is zoned AE, AE-10 or AE-20. New dairies are not permitted in urban areas or AE-10 zoned areas. Additionally Mitigation Measure #4.3.5-2 recommends that dairies and other animal confinement facilities not be permitted in the AE and AE-20. The only AE-40 zoned area not within a mosquito abatement district is located west of Lindsay. New dairy development would not, therefore, be permitted in most of the area not serviced by an abatement district.

These districts are established in accordance with the provisions the California Health and Safety Code, Article 4, Section 2270. In addition to its general powers, a mosquito abatement district has the authority, among other powers, to do the following:

(a) Take all necessary or proper steps for the control of mosquitoes, flies, or other vectors, either in the district or in territory not in the district but so situated with respect to the district that mosquitoes, flies, or other vectors may disperse from the territory into the district.
(b) Abate as nuisances all standing water and other breeding places for mosquitoes, flies, or other vectors, either in the district or in territory not in the district but so situated with respect to the district that mosquitoes, flies or other vectors from the territory disperse into the district.

Individual districts have adopted requirements for the construction and management of dairy waste systems. These requirements are included in Appendix M.

ACFP Policies and Standards: ACFP Policies that specifically address related issues are Locational and Animal Density Policies Nos. 2, 3, 4 and 5. Please refer to Chapter 3 of this Report for a complete citation of these policies. Standard Conditions of Approval, also listed in their entirely in Chapter 3 that specifically address related issues and implement related policies include COA Nos. 2, 5, 15, 27, 28 and 29.

Impact Evaluation Criteria: The recently revised State CEQA Guidelines indicate that a project may have a significant effect on the environment if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment or risk explosion.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.
- Result in a safety hazard for people residing or working in the project area when located within two miles of a public airport or public use airport or within the vicinity of a private airstrip.
- Impact implementation or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.
- Expose people to existing or potential hazards and health hazards other than those set forth above.

Impacts:

Impact #4.3.6-1: *Increase health hazard from flies and gnats..*

Discussion/Conclusion: The fly population can increase rapidly when sanitation is poor or decaying organic matter is present. Fly development depends on three integrated factors: nutrients (food), warmth and moisture. Elimination of one of these factors breaks the life cycle of the pest. Management practices to eliminate conditions that favor fly development and reduce fly attractants should include rigorous action in the areas of general sanitation, water management, and manure management. Gnats lay eggs in surface mud at the edge of water. This impact is considered to be "**less than significant with mitigation**".

Impact #4.3.6-2: *Increase hazard from mosquitoes.*

Discussion/Conclusion: Well-managed dairy holding ponds generally offer less mosquito-breeding habitat than irrigated pasture. (UC Cooperative Extension) Mosquito breeding sites are minimized when weeds are controlled around the perimeter of dairy ponds and lagoons and floatage is minimized. Management of irrigation water applications to crop lands is also a necessity. This impact is considered to be "**less than significant with mitigation**".

Mitigation Measures:

Mitigation Measure #4.3.6-1: Implementation of management guidelines for sanitation, water management, solid manure management and wastewater management. Applies to Impact #4.3.6-1. These management guidelines include, but are not limited to, the following:

- Regular removal of accumulated manure from calf pens, loafing barns, and other areas.
- Regular cleanup of waste feeds and areas around feeders.

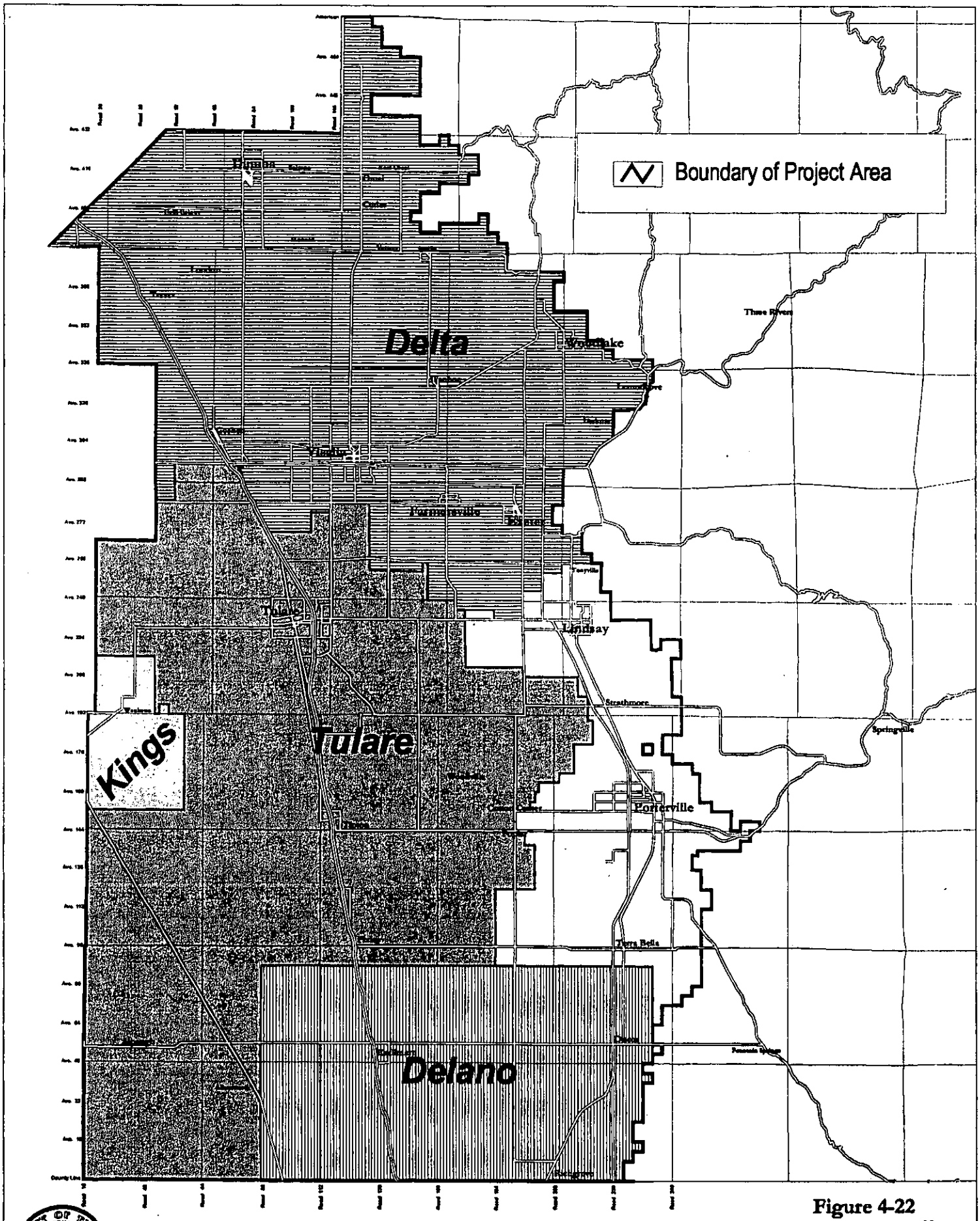

Figure 4-22

Mosquito Abatement Districts

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- Dead animals and afterbirths should be removed.
- Regularly remove weeds from around the milk barn, corrals, water troughs and fence lines.
- Damp or spilled feed should not be allowed to accumulate in or around mangers.
- Thorough cleanup of manure, rotting feeds and similar materials in the fall and early spring to minimize warm weather increases in fly populations.
- Design calf hutches to allow for proper drainage and clearing.
- Frequent bedding replacement to aid in the control of flies and fleas.
- Paved alleys and heavy traffic areas should be designed with sufficient slope for drainage and to facilitate manure collection.
- Land applied waste water should be distributed over a large enough area to minimize ponding.
- Excess manure should be stockpiled outside the corrals on hard-packed soil.
- Fresh manure should be mixed with old material to help the drying process.
- Milking barns and holding pens should be surfaced with concrete and provided with sufficient slope to facility washing and water runoff after every milking.
- Corrals and work alleys should be graded according to a master drainage plan to avoid ponding of rainwater.
- Corrals should have adequate elevation to allow manure scraping to continue without lowering the corral area below the grade of surrounding areas.
- Roof gutters can be used to divert rainwater from cattle traffic areas.
- Water troughs should be located in a convenient location for cattle access away from high traffic areas.
- Water troughs should be constructed to preclude interference with corral cleaning.
- Troughs should be surrounding by an eight-foot-wide, concrete, sloped apron.
- Floats (or other mechanisms for controlling the water level) should be maintained regularly to ensure proper function.
- Frequent raising and lowering of the waterline in ponds and lagoons.

Effectiveness of Measure: Implementation of management guidelines as outlined above will minimize fly populations so that potential impacts will be reduced and/or avoided.

Implementation/Monitoring: This mitigation measure would be incorporated into the conditions of approval for individual dairy and other animal confinement operations. Monitoring of conditions of approval is the responsibility of the Tulare County RMA. Nuisance complaints are handled by the responsible mosquito abatement district.

Mitigation Measure #4.3.6-2: Implementation of management guidelines for wastewater facilities and water use. Applies to Impact #4.3.6-2. These management guidelines include, but are not limited to, the following:

- Wastewater facilities shall be designed so that waste water flow channels the holding from self-cleaning milking parlors to ponds to minimize debris accumulation.

- Use of a solid separator (gravity or mechanical) to reduce floatage on the holding pond. New wastewater lagoons shall be plumbed so that wastewater going into it can be diverted back to the solids separation pits in the event of a mechanical breakdown in the mechanical separator or in the event of a power outage.
- The ponds/lagoons shall be designed with adequate surface width to allow wind action and to prevent floatage and mat formation.
- Banks of the ponds/lagoons shall be sloped to minimize breeding sites for mosquitoes.
- Removal of plant materials from pond/lagoon banks.
- Access roads shall be provided around ponds/lagoons for maintenance and vector control.
- No fencing should be permitted between the ponds/lagoons and access roads.
- All access roads, pond/lagoon walls, floors and surfaces shall be kept weed free.
- During land application of manure waters, pond/lagoon contents should be agitated to mix solids thereby minimizing mat formations during irrigation.
- Wastewater used for irrigation should not be allowed to stagnate for more than four days.

Effectiveness of Measure: Implementation of the measures outlined above would reduce or avoid mosquito-borne health risks and reduce the amount of pesticides required to control mosquitoes and other vectors.

Implementation/Monitoring: This mitigation measure would be incorporated into the conditions of approval for individual dairy and other animal confinement operations. Monitoring of conditions of approval is the responsibility of the Tulare County RMA. Nuisance complaints are handled by the responsible mosquito abatement district.

Mitigation Measure #4.3.6-3: Dairy and other animal confinement facilities which are not located within the service boundary of a mosquito abatement district shall comply with the following requirements for construction and management of wastewater facilities: Applies to Impact #4.3.6-2

1. The owner/operator shall be responsible for mosquito/vector control. If acceptable arrangements can be made, the owner/operator may contract with a nearby mosquito abatement district to satisfy this requirement.

2. The owner shall be responsible for keeping vegetative growth from all areas of the wastewater and solids separation ponds. This includes access lanes, interior pond embankments and any weed growth which might become established on pond surfaces.

3. Dairy wastewater discharge for irrigation purposes shall be managed so that it does not stand for more than dour days. Discharges which do stand for more than four days could cause severe mosquito emergence.

4. Floatage of any solid substance that could provide harborage for immature mosquito stages should be kept out of all wastewater holding ponds. Mechanical agitators may be very helpful in this regard.

5. No drainage lines shall by-pass the separator ponds except those which provide for normal corral run-off. All such drain inlets must be sufficiently grated to prevent solids accumulation in the holding ponds.

6. If new dairy wastewater holding and solids separator ponds are proposed, the following requirements shall also apply:

   A. All ponds shall be surrounding by lanes at least twenty feet in width and shall be kept clear for access.

   B. If fencing around the ponds is proposed, it shall be placed on the outside of the 2-foot lanes and gates provided for each access.

   C. Two or more solids separator ponds are required. These ponds shall not be more than 60 feet wide.

   D. Wastewater holding ponds shall not exceed 100 feet in width.

   E. New wastewater lagoons shall be plumbed so that wastewater going into it can be diverted back to the solids separation pits in the event of a mechanical breakdown in the mechanical separator or in the event of a power outage.

Effectiveness of Measure: Implementation of the measures outlined above would reduce or avoid mosquito-borne health risks and reduce the amount of pesticides required to control mosquitoes and other vectors for facilities that are not located within the service boundary of a mosquito abatement district.

Implementation/Monitoring: This mitigation measure would be incorporated into the conditions of approval for grandfathered dairy and other animal confinement operations and would be established as standards through ordinance. Monitoring of conditions of approval is the responsibility of the Tulare County RMA.

4.3.7 CULTURAL RESOURCES

The San Joaquin Valley has been occupied by Native American groups for thousands of years. However, because the majority of the Project Area is under agricultural production, a significant amount of ground disturbance has occurred.

Section 15064.5(a) of the State CEQA Guidelines states that CEQA applies to effects on historical resources, defined as follows:

(1) An historical resource is a resource listed in, or determined to be eligible for, listing in the California Register of Historical Resources (Title 14 CCR, Section 4800 et seq.).

(2) Historical resources may include, but are not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California

(3) The California Register of Historical Resources is an authoritative guide in California to be used by state and local agencies, private groups and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change.

(4) Criteria for listing on the California Register of Historical Resources (Title 14 CCR, Section 4800.3) should be consulted in determining if an historical resource may be eligible for listing.

(5) The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical resources, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resource Code), or identified in an historical resource survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining whether the resource may be an historical resource as defined in Public resources Code Sections 5020.1(j) and 5024.1.

Section 15064.5(c) of the State CEQA Guidelines states that CEQA applies to effects on archaeological sites if the site is determined to be an historical resource which is defined as any site which:

(A) Is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California; and

(B) Meets any of the following criteria:
  (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
  (2) Is associated with the lives of persons important in our past;
  (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
  (4) Has yielded, or may be likely to yield, information important in prehistory or history.

ACFP Policies and Standards: There are no ACFP policies or standard conditions of approval that directly relate to cultural resources.

Impact Evaluation Criteria: The recently revised State CEQA Guidelines indicate that a project may have a significant effect on biological resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the State Guidelines.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature of paleontological or cultural value.
- Disturb any human remains, including those interred outside of formal cemeteries.
- Disturb unique architectural features or the character of surrounding building.

Impacts:

Impact #4.3.7-1*: Disturbance or destruction of unidentified historical or archaeological resources.*

Discussion/Conclusion: As stated earlier, the majority of the Project Area has experienced major ground disturbance due to agricultural activities. However, if any archaeological resources were encountered during construction of facilities, those resources would need to be evaluated. This potential impact is considered to be "**less than significant with mitigation**".

Mitigation Measures:

Mitigation Measure #4.3.7-1: In the event that grading, excavation, or construction associated dairies or other animal confinement facilities reveals the presence of cultural resources, the RMA shall be notified and work shall cease immediately until a qualified archaeologist can be consulted to evaluate the remains and implement appropriate mitigative treatment in accordance with Section 15064.5 of the State CEQA Guidelines.

> **Effectiveness of Measure:** The above measure will assure that any undiscovered resources are protected and any impacts mitigated in accordance with law.
>
> **Implementation/Monitoring:** Construction personnel shall be given a fact sheet by the Tulare County RMA stating that it is possible that buried cultural resources might lie beneath the ground which may be protected by State and federal law. In the event such resources are encountered, the project applicants or their representatives shall notify the Tulare County RMA and retain a qualified professional archaeologist to evaluate the resources. Subsequent construction shall proceed in accordance with the recommendations of the archaeologist and Tulare County RMA.

4.4 MANDATORY CEQA SECTIONS

4.4.1 CUMULATIVE IMPACTS

Section 15130(a) of the State CEQA Guidelines states that "an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively significant. Where an lead agency is examining a project with an incremental effect that is not 'cumulatively considerable', a lead agency need not consider that effect significant." Section 15130(a)(1) further states "As defined in Section 15355, a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR."

Section 15130(b) further states that:

> The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

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

> (A) A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or
>
> (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact.

"Reasonably anticipated future projects" are limited to those projects requiring an agency approval for an application which has been received at the time the EIR is released for public review and comment, those public agency projects for which money has been budgeted, or projects included in an adopted capital improvements program, general plan, regional transportation plan or other similar plan, and those projects anticipated as later phases of a previously approved project (e.g., a subdivision). {Section 15130[b][1][B][2}

With some projects, the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis. {Section 15130(c)}

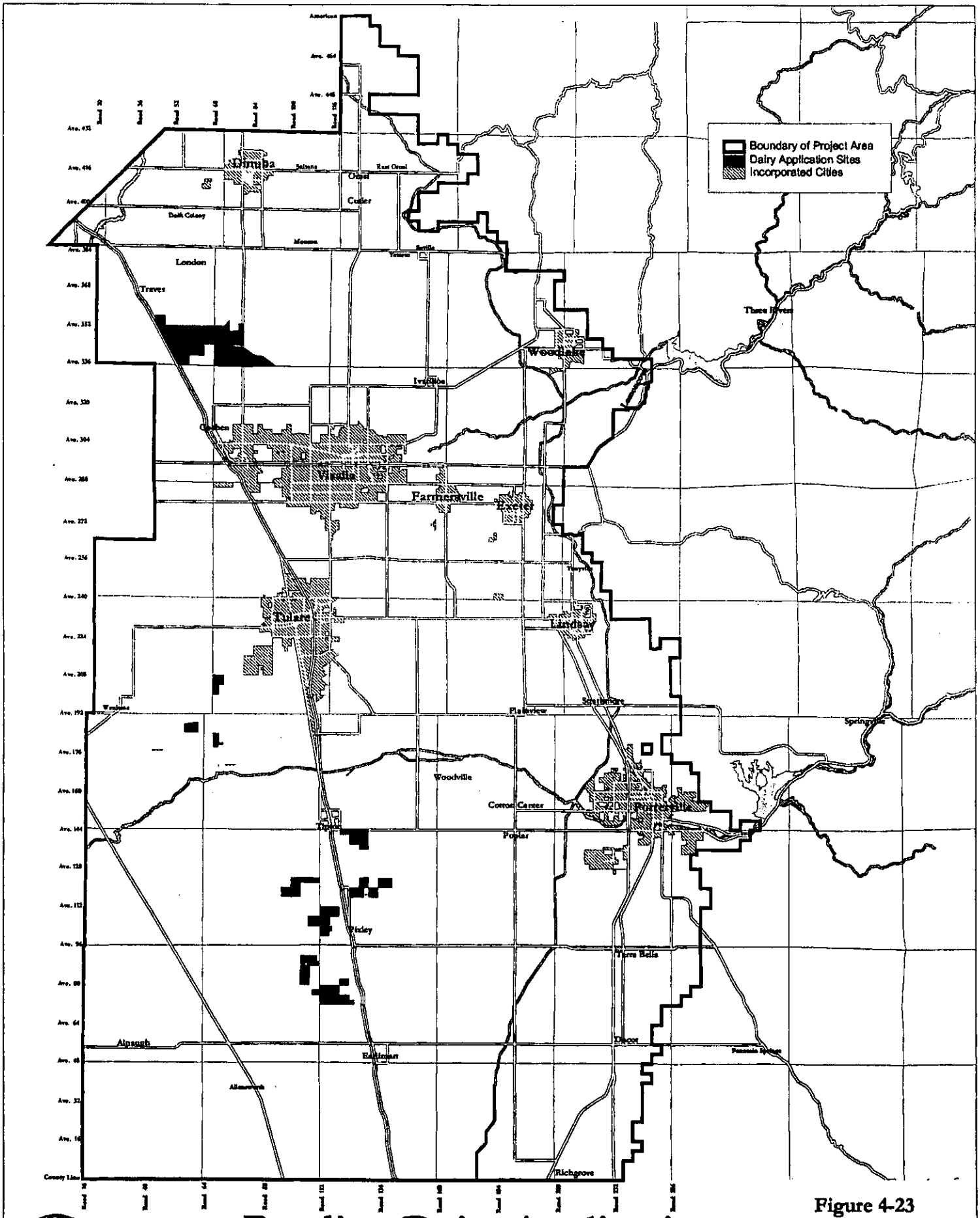
Section 4.3 of this Report identified three significant and unavoidable cumulative impacts, all of which are related to air quality. The analysis of those impacts acknowledges that the three associated air quality effects affect the ambient air quality within the entire San Joaquin Valley Air Basin (SJVAB) and are considered significant because the SJVAB is considered "nonattainment" for criteria air pollutants. The air basin has geographic boundaries that encompass approximately 25,000 square miles, including all or portions of eight counties. All human activities within the basin can, affect the ambient air quality.

Monitoring and evaluation of emissions generated from point sources is conducted regularly by the SJVAPCD, however, the contribution to ambient air quality conditions by nonpoint sources (e.g., dairies, agricultural operations) is not closely monitored. Sufficient information on the location and characteristics of nonpoint sources that generate air emissions has not been developed to allow quantification of these emissions.

Recognizing that development of relevant data on air emissions from all sources within the air basin is not practical, this evaluation of cumulative impacts is focused on past, present and future dairy and other animal confinement projects within Tulare County that could contribute to the cumulative air quality impacts identified in Section 4.3.3 of this Report. The cumulative projects identified in this analysis are under the planning jurisdiction of Tulare County and information on these facilities are available from records maintained at the Tulare County Resources Management Agency.

As of the date the NOP process for this project was completed (April 30, 1999), there were 291 dairies operating in the county with an animal population of 312,340. As shown on Table 4.2.3-2, existing dairies, approved dairies not yet built or in operation, and pending dairy applications account for 650,000+ animal units covering a gross area of approximately 105,000 acres. An additional 15,000 acres are utilized for feedlots, swine and poultry operations (Table 4.2.3-1). The location of pending applications for dairies and feedlot operations that have been submitted since completion of the NOP process (April 30, 1999) is provided on Figure 4-23.

CEQA Guidelines require that cumulative impacts also be identified for "probable future projects". Because the Tulare County Zoning Ordinance allows dairies and other animal confinement facilities in agricultural zones with the issuance of a special use permit, an estimate of undeveloped land that could be potentially developed with animal confinement facilities was made. Utilizing criteria contained in ACFP policies and standards (e.g., prohibiting new facilities within Windsheds) it was determined that approximately 100,000 acres of land would be available for development of animal facilities. Construction of feedlots and other dairy improvements typically covers


Boundary of Project Area
Dairy Application Sites
Incorporated Cities
Dinuba
Cutler
London
Traver
Woodlake
Ivanhoe
Orosi
Visalia
Farmersville
Exeter
Tulare
Lindsay
Strathmore
Woodville
Porterville
Poplar
Tipton
Pixley
Terra Bella
Alpaugh
Earlimart
Richgrove
Figure 4-23
Pending Dairy Applications
Submitted After Circulation of Notice of Preparation
Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR
Tulare County Resource Management Agency
2 0 2 4 6 Miles
N
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S

approximately 15 percent of dairy sites. This would leave 85,000 net acres for waste disposal. Additionally, it is estimated that another 20,000 acres located within designated "buffer areas" could be utilized for waste disposal. Because the maximum allowable animal units permitted is based on cropland acreage, cropping patterns (single or double cropping) and the type of dairy design (free stall or open corral), it can be estimated that, worst case scenario, the maximum cow population could double from the current population, but not in areas approaching saturation.

Each new dairy or other animal confinement facility that is constructed in the county would contribute on an incremental basis to the generation of PM-10, ammonia (a precursor to PM-10), and ROG (a precursor to ozone). Because the San Joaquin Valley is designated as "non-attainment" for both PM-10 and ozone, any increase in emissions would further the non-attainment status.

Major sources that contribute to PM-10 emissions in the air basin, in descending order of contribution, include roadway dust, farming operations, waste burning, and industrial processes. The main sources of ROG emissions are vehicle and other mobile sources, solvent use, farming, petroleum storage and transfer, and waste burning. The SJVAPCD estimates that 450 tons of PM-10 and 490 tons of ROG are produced daily within the air basin. These estimates do not include PM-10 and ROG emissions from dairies and other livestock facilities because an inventory of these emissions has not been compiled by the District. An estimate of the incremental increase in emissions from these sources cannot, therefore, be quantified.

The SJVAPCD is currently developing guidelines for agricultural conservation practices to reduce the emissions from agricultural activities, including livestock management. However, significant emission of PM-10 and ROG from dairies will likely occur even after implementation of these measures.

4.4.2 SIGNIFICANT IRREVERSIBLE IMPACTS

Section 15126.2(c) of the CEQA Guidelines requires that EIRs provide a discussion of "significant irreversible environmental changes which would be caused by the proposed project should it be implemented. This section goes on to provide examples of such irreversible changes including use of nonrenewable resources, land use actions that commit future generations to similar uses, and irreversible damage resulting form environmental accidents.

The construction and operation of new dairies and other animal confinement operations would likely result in or contribute to the following irreversible environmental changes:

- Construction activities would expend non-renewable fossil fuels for machinery operations and use building materials that most likely would not be reused following completion of operations.

- Operation of dairies and other animal confinement facilities would require use of non-renewable energy (e.g., fossil fuel) for the life of operation.

4.4.3 GROWTH-INDUCING IMPACTS

Section 15126.2(d) of the CEQA Guidelines requires that EIRs provide a discussion of the "growth inducing impacts of the proposed project". Growth inducing impacts could be caused by projects that: foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects that would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may further tax existing community service facilities so consideration must be given to this impact. The characteristic of some projects that may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively, should be discussed. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

The adoption of the ACFP would not result in or contribute to development that could not otherwise occur under existing regulations. Rather, adoption of the ACFP would incorporate into the General Plan policies, and standards that would regulate future dairy and other animal confinement facilities development. Additionally, monitoring and enforcement programs will be implemented pursuant to the adoption of the ACFP which will protect the environment and enhance the animal/livestock industry in the county.

4.5 ALTERNATIVES

The California Environmental Quality Act and the implementing CEQA Guidelines require that alternatives to the proposed project be discussed in the EIR. The value of such discussion is to inform the public and decision-makers of the differential environmental impacts that may be associated with each potential alternative. Section 15126.6 of the CEQA Guidelines describes the discussion and evaluation that should be included; subsections relative to adoption of the ACFP are summarized as follows:

> (a) Alternatives to the Proposed Project. An EIR shall describe a range of reasonable alternatives to the project, or in the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives to foster informed decision-making and public participation. An EIR is not required to consider alternatives which are infeasible...

(b) Purpose. Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment, the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

(c) Selection of a range of reasonable alternatives. The range of potential alternatives...shall include those that could feasible accomplish most of the basic purposes of the project and could avoid or substantially lessen one or more of the significant effects....Among the factors that can be used to eliminate alternatives from consideration are: (i) failure to meet project objectives, (ii) infeasibility, (iii) inability to avoid significant environmental impacts or (iv) the creation of new significant environmental impacts.

(d) Evaluation of alternatives. The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis and comparison with the project project...If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

(e)"No project" alternative.

(1) The specific alternative of "no project" shall also be evaluated along with its impact. The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the project project with the impacts of not approved the project project. The no project alternative analysis shall not function as a baseline for determining whether the project project's environmental impacts may be significant; that baseline is established by the environmental setting.

(2) The "no project" analysis shall described the existing conditions...at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans...

Section 15126.6[e][3][A] further states that "when the project is the revision of an existing land use or regulatory plan, policy or ongoing operation, the "no project" alternative will be the continuation of the plan, policy or operation into the future...The projected impacts of the proposed plan or alternative plans would be compared to the impacts that would occur under the existing plan.

4.5.1 NO PROJECT

Under the "No Project" alternative, adoption of the ACFP for incorporation into the Tulare County General Plan would not take place. As a result, the Interim Policies for the establishment of dairies and other animal confinement facilities as adopted by the Board of Supervisors on June 30, 1998 (Resolution No. 98-0582) would remain in effect. Since the Interim Policies are nearly identical to the policies contained in the AFCP, the potential environmental impacts associated with this alternative would remain the same (reference Section 4.3) as those for the proposed project (adoption and implementation of the ACFP). However, because this alternative would not result in adoption and incorporation of the ACFP into the General Plan, the policies would not have the enforcement of General Plan policies and, as such, would not achieve the project objectives.

It should also be pointed out that interim policies apply only to new operations applied for after June 10, 1998. In is intended that the policies established under the ACFP will apply to all dairy and other bovine animal confinement facilities in the county.

4.5.2 ADOPTION OF ACFP WITH ONE-MILE RADIUS RESTRICTION

The Phase 1 of the ACFP as proposed includes policies to regulate the establishment and operation of dairies and other bovine animal confinement facilities. Based on contemporary science, the Agricultural Advisory Committee (AAC) has recommended adoption of the locational policies. The proposed policies are basically the same as those adopted by the Board of Supervisors as Interim Policies discussed above, with one exception. The interim policies included Policy No. 3 that read as follows:

> "3. The addition of a new dairy/concentrated animal-raising operation shall not cause the maximum density of total animals to exceed four animal units per gross acre in an area within a one-mile radius from the perimeter of the proposed new animal facility site and for any existing animal operation within that one-mile area."

This policy was reconsidered by the AAC in April of 1999 and subsequently deleted from the recommended policies. This particular policy was reconsidered for several reasons. First, the policy has the potential to limit the expansion of existing facilities that meet on-site density standards for maximum number of animal units. Secondly, the inability of established operations to expand would be controlled by land use activities on, and property owners of, surrounding properties and not the owner/operator's specific land availability and management/cropping patterns.

The purpose of the policy is to prevent the over concentration of animals within a specific area. However, at the time this guideline was established, on-site density requirements (maximum number of animal units per net acre) were much more relaxed than what is proposed under the ACFP. Policies relating to the maximum number of animal units allowed on-site have been developed based on contemporary science

regarding acceptable nutrient loading capacities. To this end, each individual operation will be "self-contained" in that the number of allowable animal units will be based on existing conditions, cropping patterns, and management practices. The Committee concluded that retention of this policy would place an undue hardship on existing facilities operating in compliance in other policies by restricting future expansion.

Instead of the original version of Policy No. 3 as discussed above, the Committee determined that an increased separation between dairy/animal confinement facilities (from one-quarter mile to one-half mile) would provide equivalent mitigation to avoid overcrowding or over concentration of facilities.

Potential environmental effects associated with this alternative would, again, be the same as the proposed project as discussed in Section 4.3.

4.5.3 ADOPTION OF ACFP WITH A COUNTYWIDE CAP ON THE NUMBER OF ANIMALS

This alternative involves the adoption of the ACFP as proposed with an additional policy limiting the total number of bovine animals allowed within the Project Area. For this discussion, a number of 4 animal units per gross acre will be utilized, a standard which has historically been used in Tulare County as an acceptable average.

As discussed in Section 4.2.3 of this Report, currently the overall average density of cows in milk per net crop acre within the Project Area is 4.58 AU/ac; per gross acre is 3.9. The overall average of total dairy animals per net crop acre within the Project Area is 7.07 AU/ac and 6.05 AU/gross acre. These figures are based on lands currently encumbered by dairies in operation, approved but not yet built or built but not in operation, and pending applications, and number of animal units as approved under a special use permit or grandfathered. It should be noted that these figures include all dairies existing within the Project Area, including those located within windsheds and buffer areas where new facilities would not be permitted under the proposed policies.

Agriculturally zoned land (AE-20, AE-40 and AE-80) located outside of windshed or buffer areas not already utilized by existing dairy or other animal confinement operations, which is not publicly-owned or not classified as "native vegetation" encompasses 145,149 acres. Pursuant to Mitigation Measure #4.3.5-2, it is proposed that dairies and other bovine animal confinement facilities be eliminated from the list of "special uses" for the A-1, AE, AE-20 and AE-80 zones. This would reduce the amount of potentially developable land to 122,937 acres. Adding to this figure would be the number of acres outside windsheds and buffers utilized by existing, approved and pending dairies (81,640 acres) for a total acreage of 204,577 acres.

Using the total acreage of 204,577 gross areas and multiplying that number by 4, a maximum overall density 818,309 animal units would be permitted countywide. As shown on Table 4.2.3-2, existing dairies along with approved and pending dairy

applications account for 628,120 total animal units. Under this alternative, 190,189 additional animal units would be permitted countywide.

Of the 291 dairies currently operating in the county, 172 are located outside windshed or buffer areas with 68 dairies located within urban windsheds, 41 located within buffers of sensitive crops (as defined by ACFP Policy No. 5) and 10 are located in other windsheds/buffers (as defined by ACFP Policies Nos. 4 and 5). These 119 dairies account for 100,739 total animal units existing in the county. The 68 dairies located within urban windsheds account for approximately 50 percent of these animal units (50,505 animal units). Because of the location of these dairies in proximity to urban development and urban growth areas, it is conceivable that over time these operations will either relocate to more remote areas or close operations due to pressures from urban development. Under this alternative, these animals could be "banked" so that as the operations close, additional animals, in conformance with the AFCP, could be allowed. Hence, one of the benefits of this alternative would be to phase out operations that do not conform to the policies contained in the AFCP.

The environmental impacts associated with this alternative would be the same as those for the proposed project as discussed in Section 4.3. However, because the total number of animal units permitted countywide would be limited, the cumulative effects of additional dairy development would be reduced.

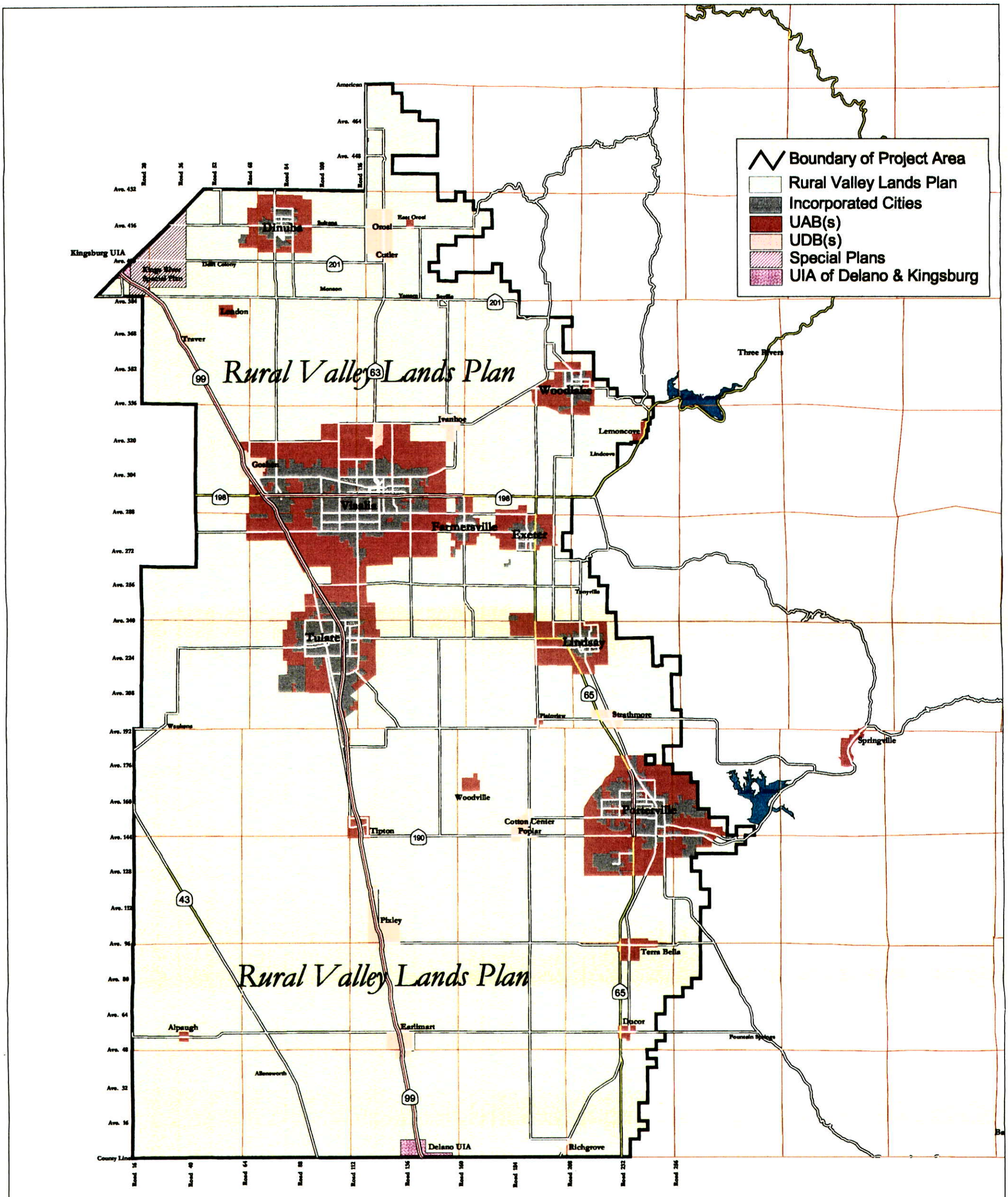

Figure 4-3

General Plan

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

2 0 2 4 6 Miles

N W E S

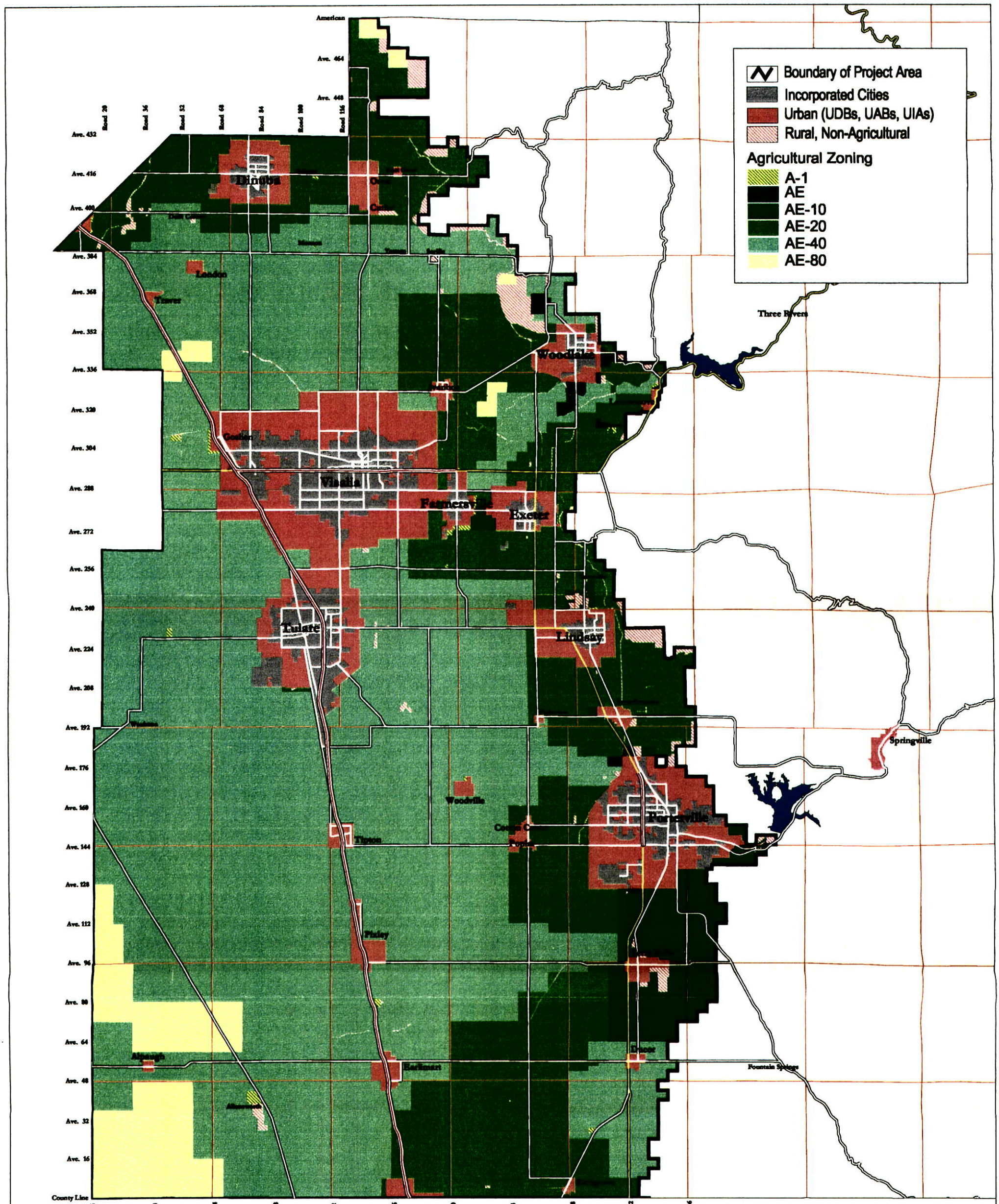

Figure 4-4

Zoning Map

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

2 0 2 4 6 Miles

N W E S

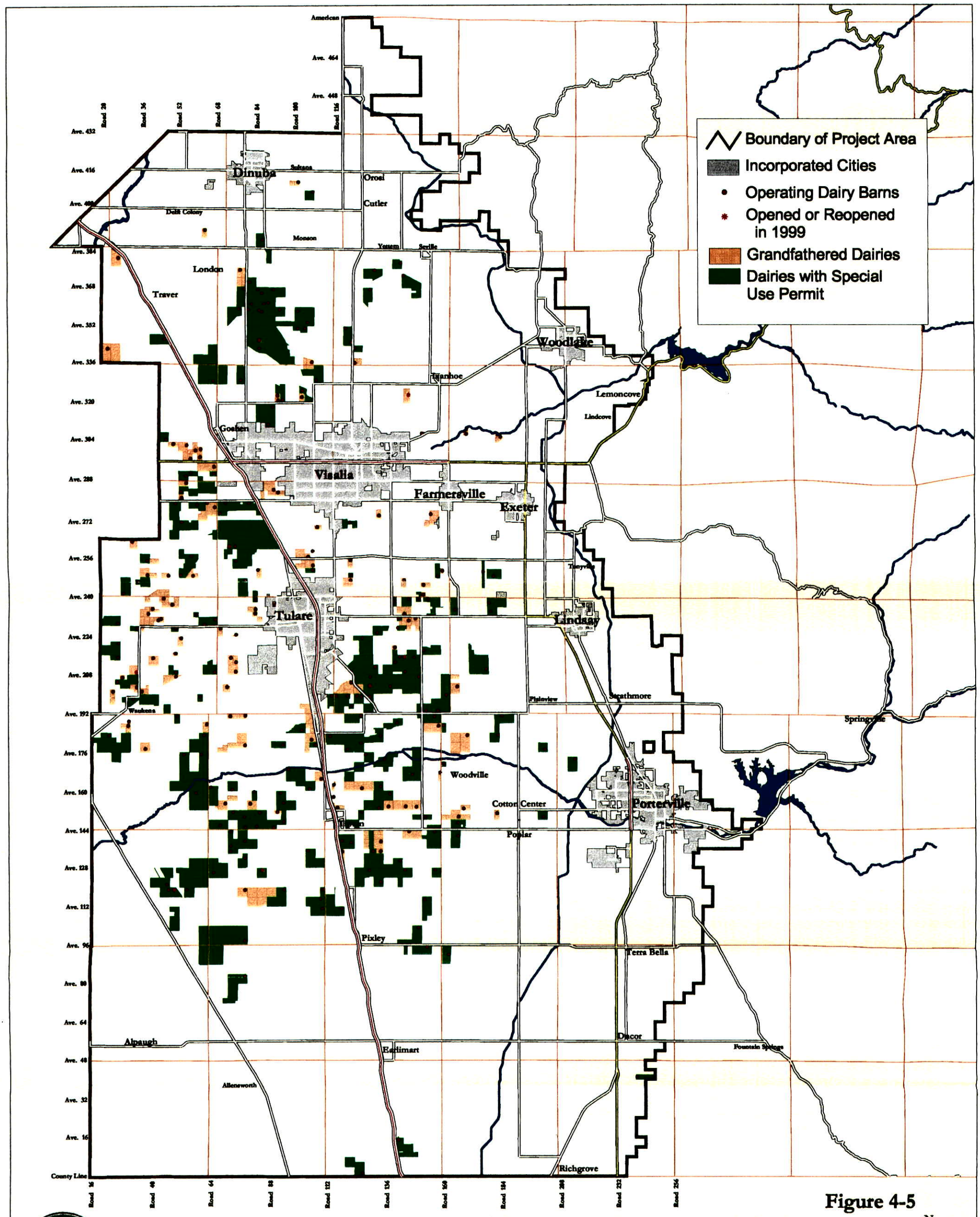

Figure 4-5

Land Encumbered by Dairy Facilities

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

2 0 2 4 6 Miles

N W E S

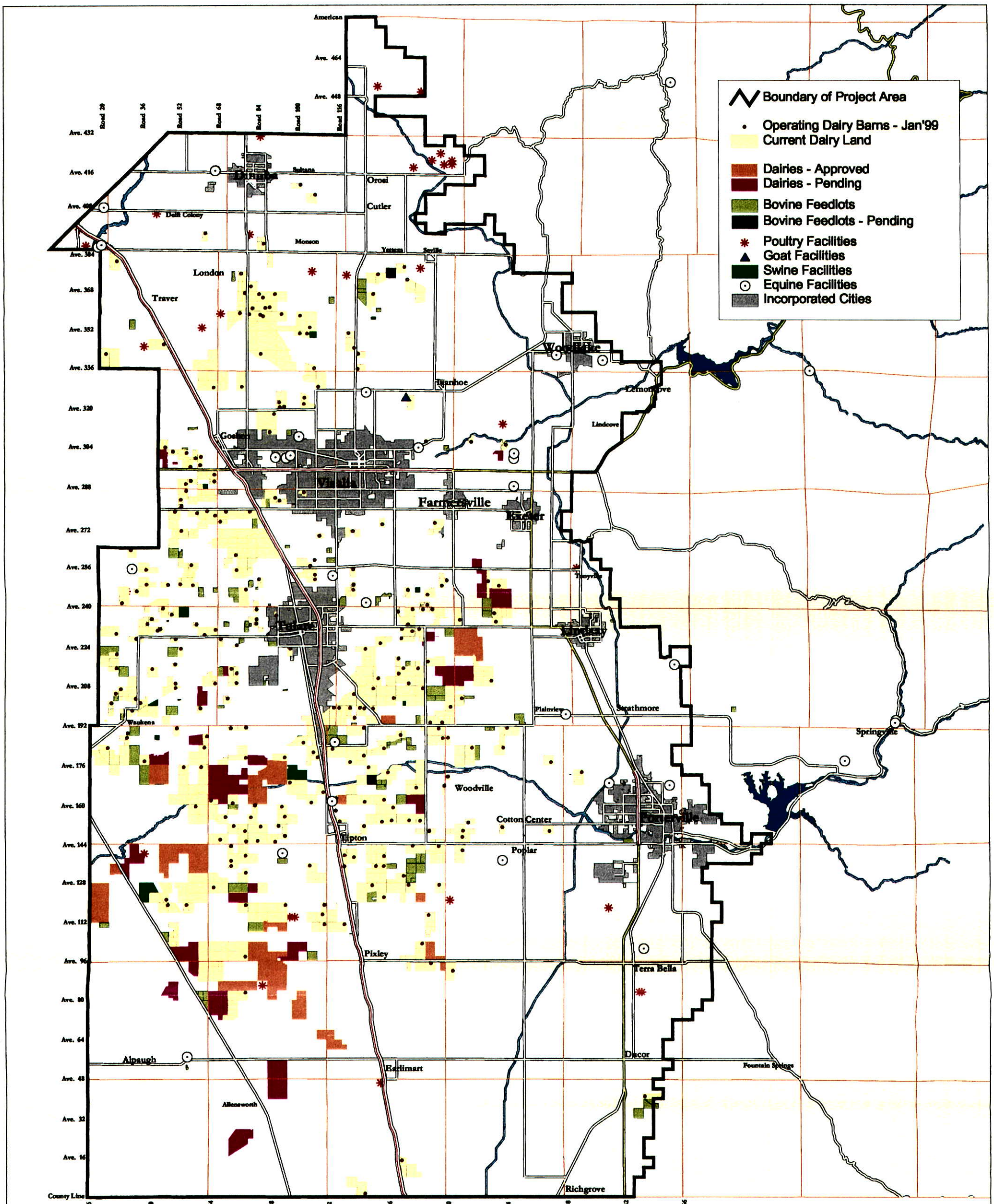

Figure 4-10

Land Encumbered by Animal Operations

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

2 0 2 4 6 Miles

N W E S

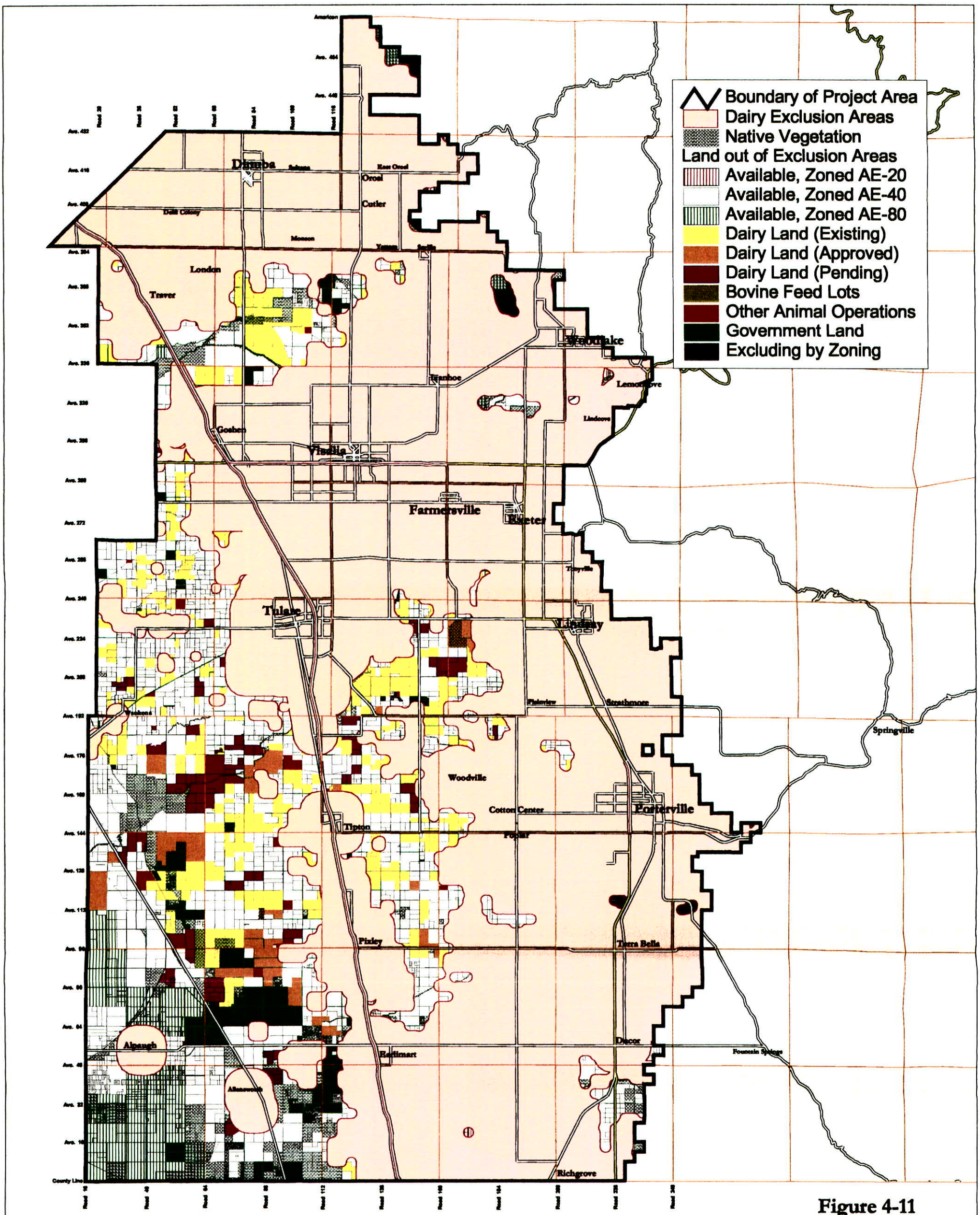

Figure 4-11

Potential Development Area for Dairies

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

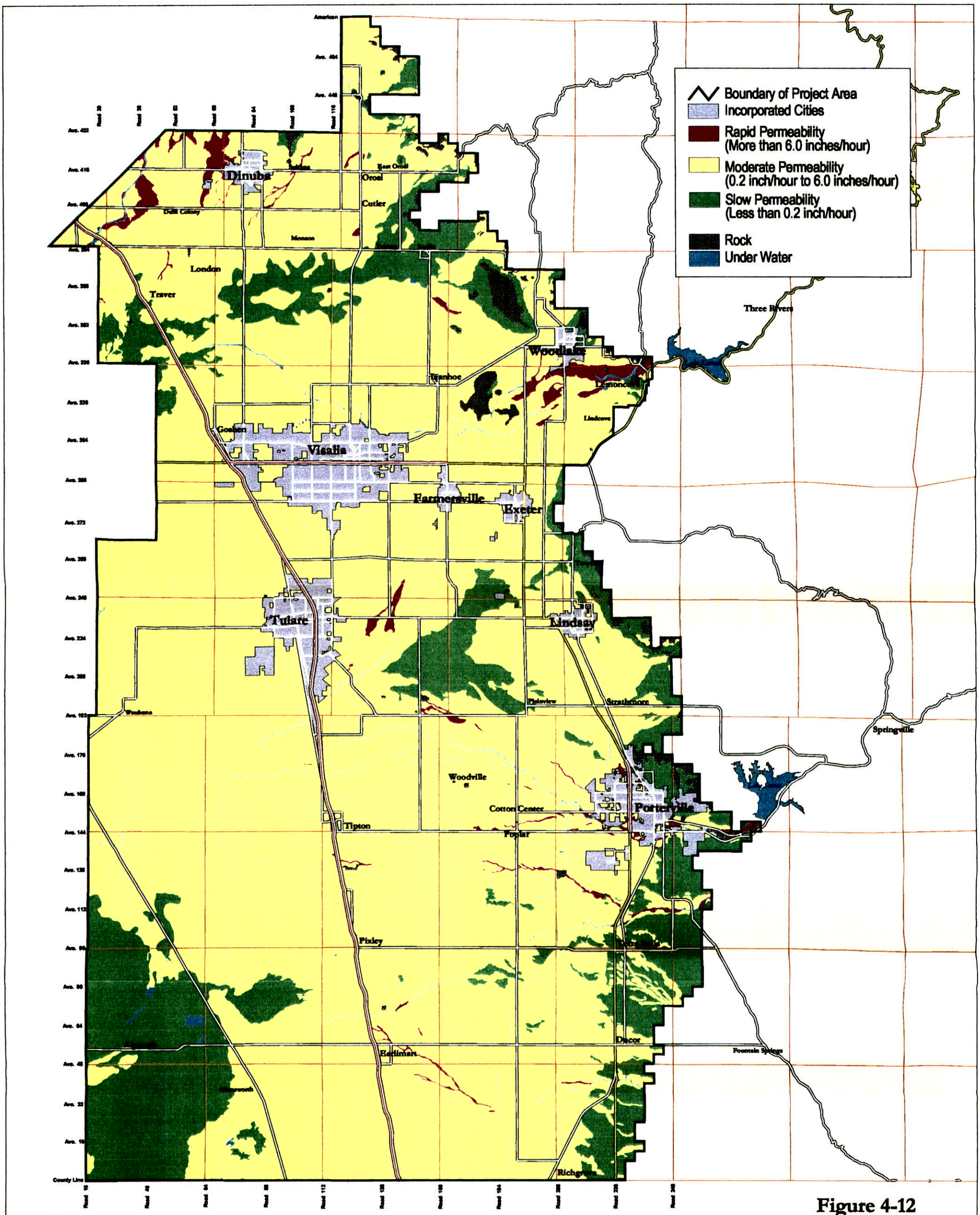

Figure 4-12

Soil Permeability

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

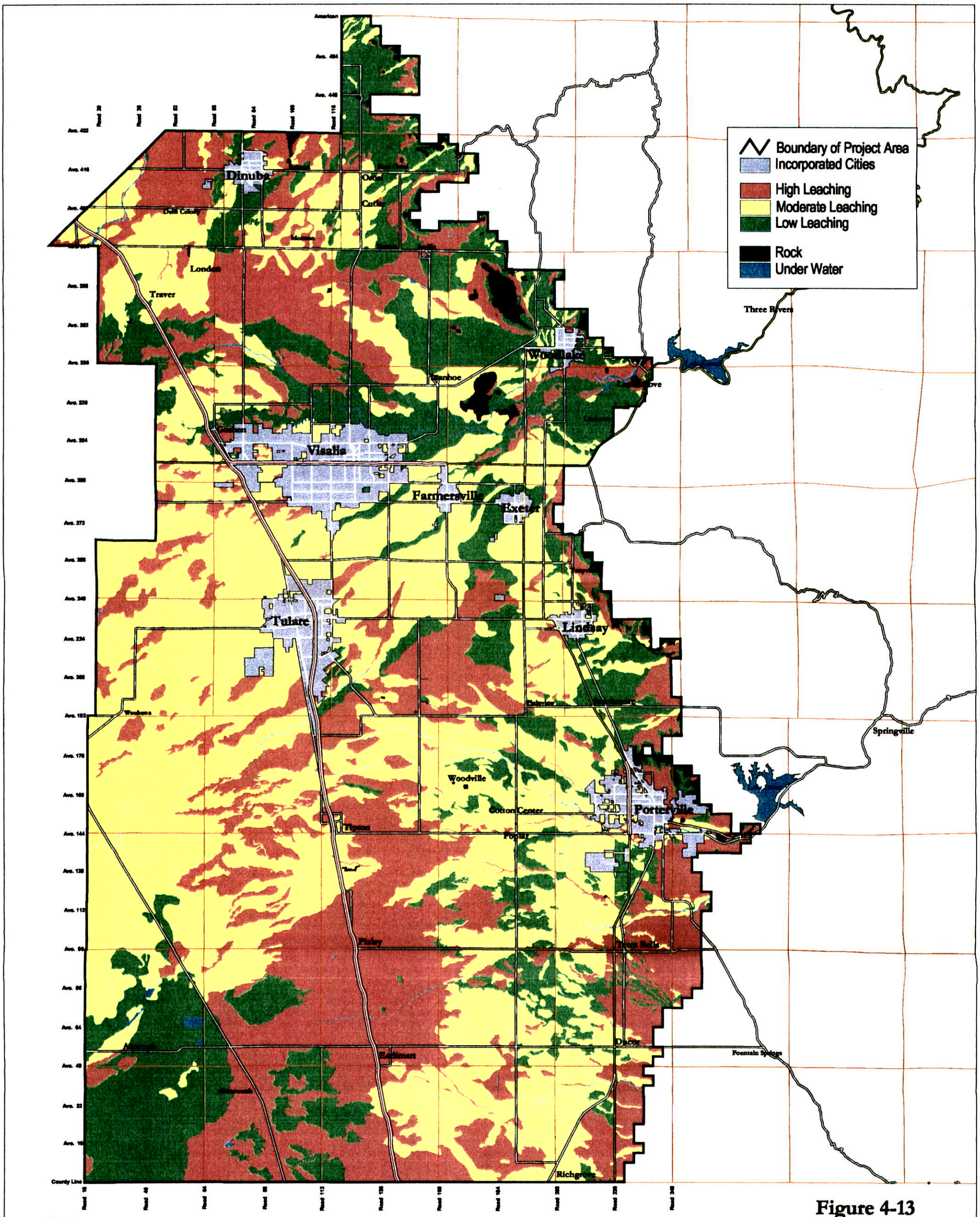

Figure 4-13

Soil Leaching Capability

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

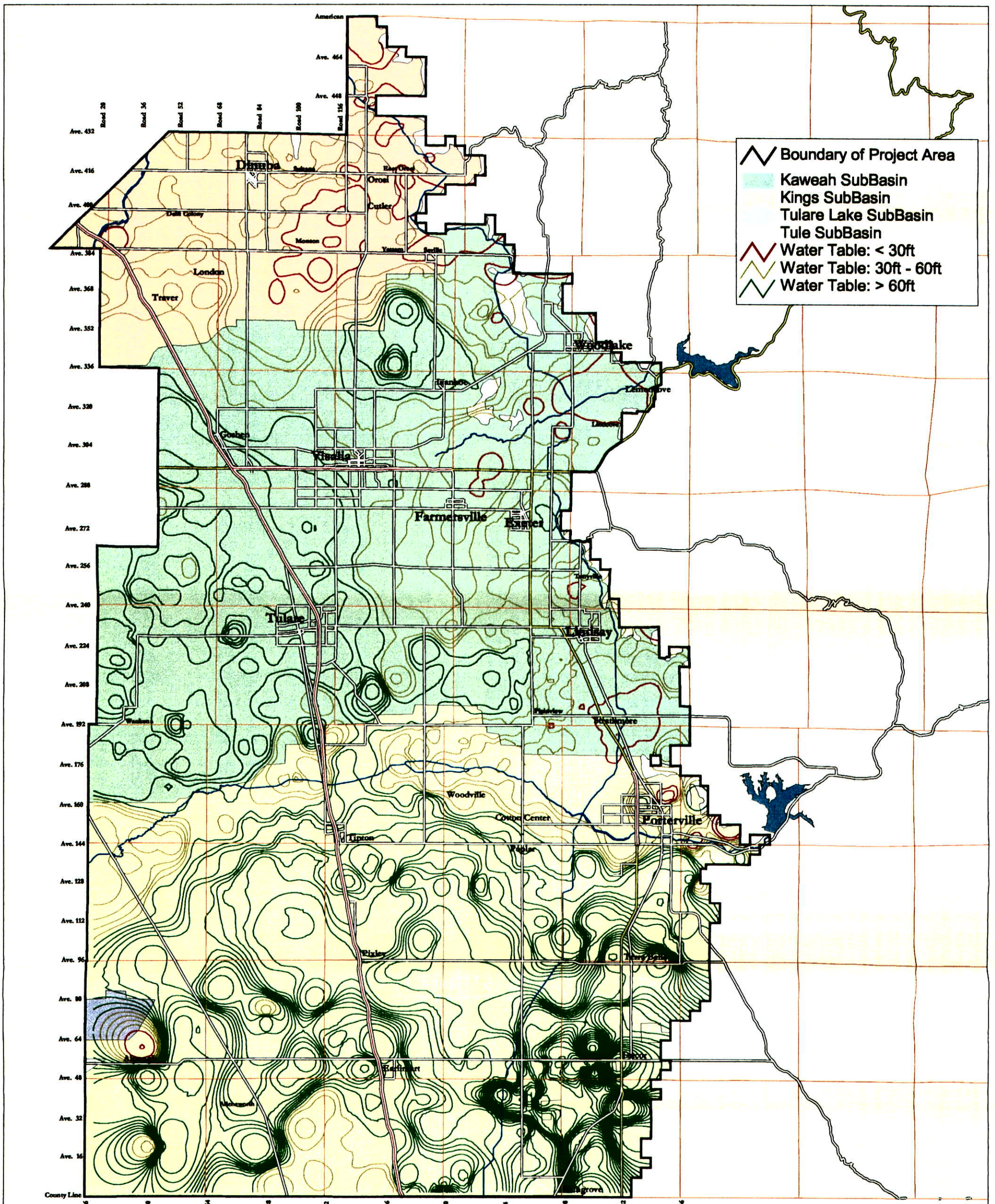

Figure 4-14

Current Water Table

Spring of 1998

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

2 0 2 4 6 Miles

N W E S

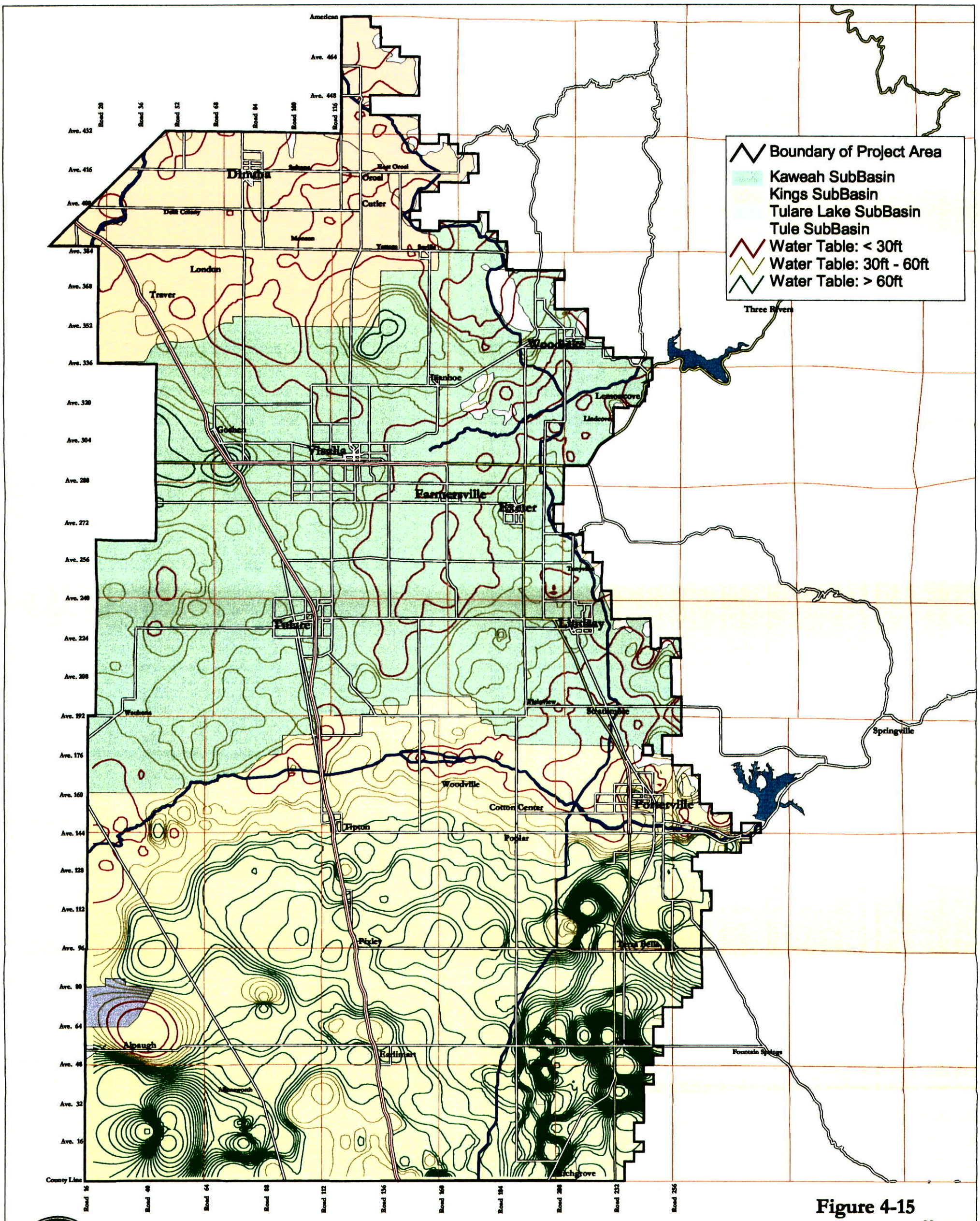

Figure 4-15

Highest Recorded Water Table

Spring of 1984

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

2 0 2 4 6 Miles

N W E S

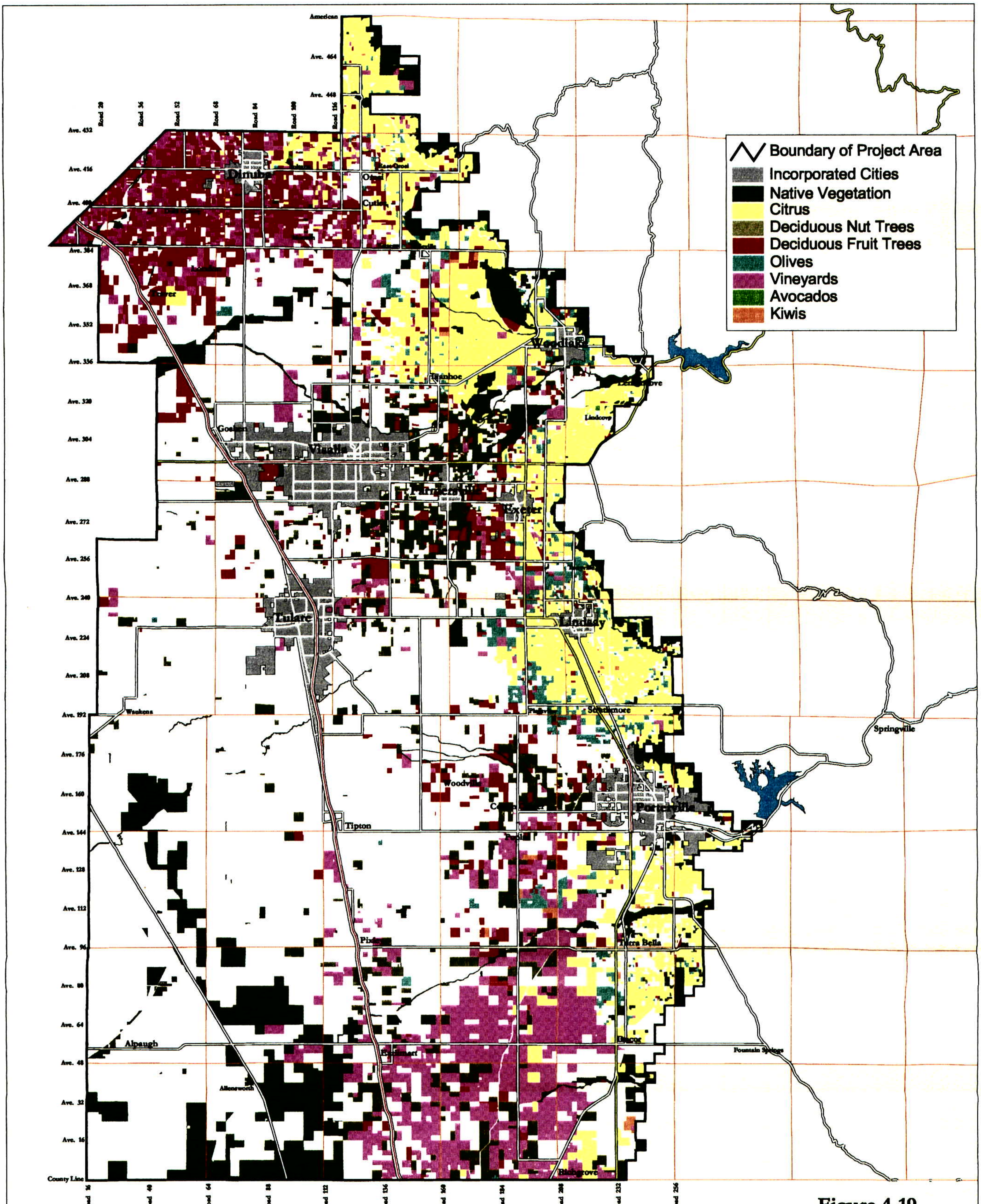

Figure 4-19

Vegetation of Concern

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

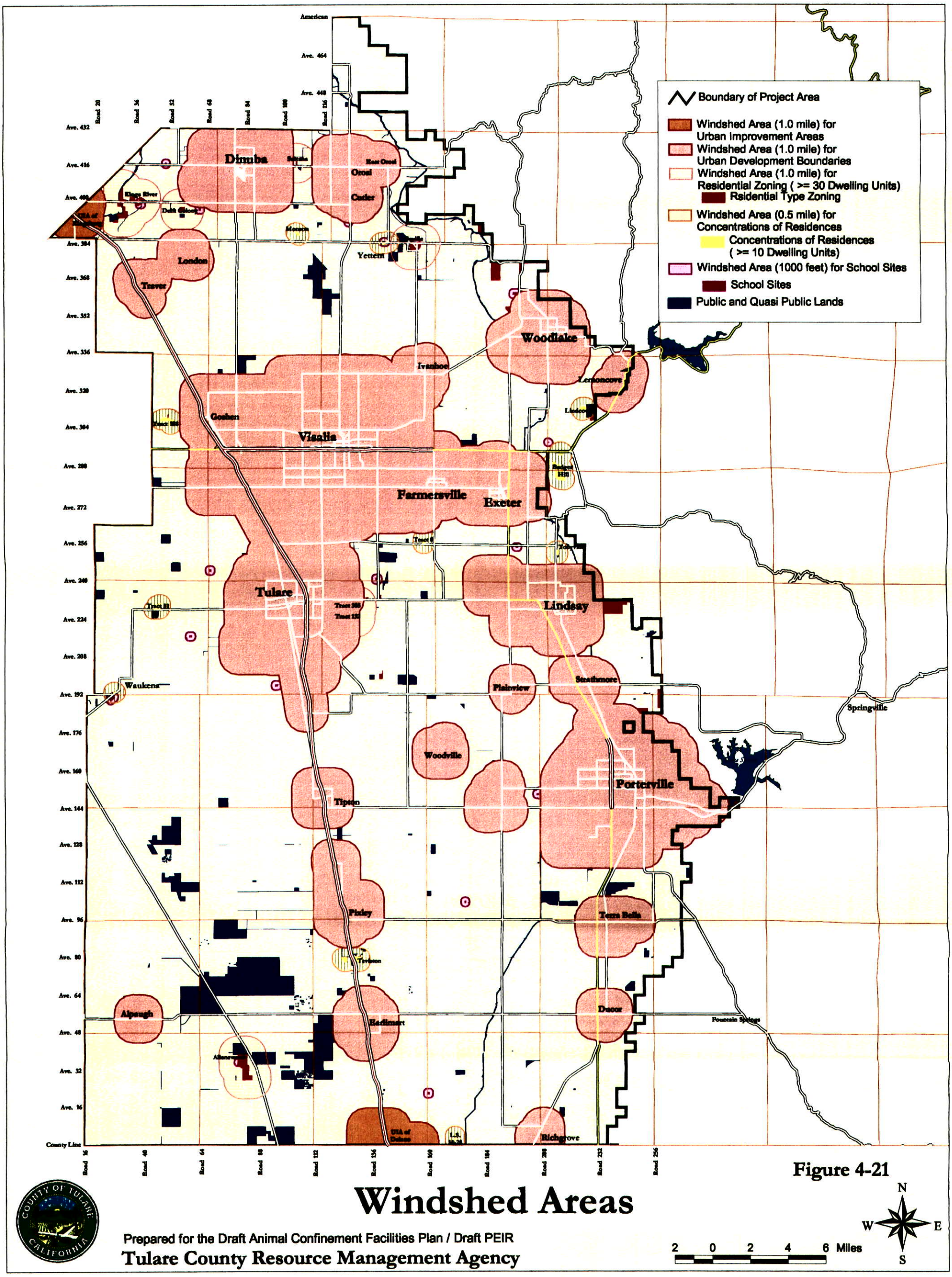

Figure 4-21

Windshed Areas

Prepared for the Draft Animal Confinement Facilities Plan / Draft PEIR

Tulare County Resource Management Agency

RESPONSE TO COMMENTS ON DRAFT PROGRAM EIR (SCH #99031044)

INTRODUCTION

CEQA requires public disclosure in an EIR of all potentially significant project environmental effects and encourages public participation throughout the EIR process. As stated in Section 15200 of the CEQA Guidelines, the purposes of public review of environmental documents are:

(a) Sharing expertise,
(b) Disclosing agency analyses,
(c) Checking for accuracy,
(d) Detecting omissions,
(e) Discovering public concerns, and
(f) Soliciting counter proposals.

Section 15105 states that: "The public review period for a draft EIR shall not be less than 30 days nor should it be longer than 60 days except under unusual circumstances. When a draft EIR is submitted to the State Clearinghouse for review by state agencies, the public review period shall not be less than 45 days, unless a shorter period is approved by the State Clearinghouse (not less than 30 days). If a draft EIR or proposed negative declaration or mitigation negative declaration has been submitted to the State Clearinghouse for review by state agencies, the public review period shall be at least as long as the review period established by the State Clearinghouse."

The review period established by the County RMA for the draft PEIR was 45 days, from December 10, 1999 to January 24, 2000. The review period assigned by the State Clearinghouse was also December 10th to January 24th.

Section 15204 of the CEQA Guidelines addresses the focus of review of environmental documents. Pertinent subsections of Section 15204 are set forth below:

(a) In reviewing draft EIRs, persons and public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate the significant environmental effects. At the same time, commentors should be aware that the adequacy of an EIR is assessed in terms of what is reasonably feasible in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project. CEQA does not require a lead agency to conduct every

test or perform all research, study and experimentation recommended or demanded by commentors.

(c) Reviewers should explain the basis for their comments, and submit data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of their comments. Pursuant to Section 15064, an effect shall not be considered significant in the absence of substantial evidence.

The Lead Agency shall evaluate comments on **environmental issues** received from persons who reviewed the draft EIR and shall prepare a written response. The Lead Agency **shall** respond to comments received during the noticed comment period and any extensions, and **may** respond to late comments. (Reference CEQA Guidelines Section 15088[a]). The County has prepared responses to comments received on environmental issues received during the 45-day review period and subsequent public hearings before the Planning Commission. The California Department of Fish and Game did request and was given a two-week extension for commenting, however, nothing was received during that time.

Comments received on the draft Animal Confinement Facilities Plan (ACFP) and specific policies are noted for the record, however, responses to these comments are provided only when comments are related to environmental issues. When necessary, revisions will be incorporated into the responses. Additions (new wording) will be italicized with deletions shown with strikethrough. Comments of a semantical nature or those referring to typographical or formatting errors that do not change the conclusions on environmental issues are noted for the record and will be incorporated into the final document prior to publication.

AGENCIES AND INDIVIDUALS WHO COMMENTED ON THE DRAFT PEIR

The following agencies and individuals commented either directly to the County of Tulare or to the State Clearinghouse during the 45-day review period.

Letter 1: Lonnie Wass, Central Valley Region, California Regional Water Quality Control Board

Letter 2: Wilma Quan, State of California, Department of Transportation (Caltrans)

Letter 3: Joe O'Bannon, San Joaquin Valley Air Pollution Control District

Letter 4: Tom Shultz, Tulare County Dairy Advisor, Cooperative Extension, University of California

Letter 5: Jan Krancher, Environmental Health Services Division, Tulare County Health & Human Services Agency

Letter 6: Yolanda Lourenco, Delta Vector Control District

Letter 7: Gary Byde, Kings Mosquito Abatement District

Letter 8: Marshall Norgaard, Tulare Mosquito Abatement District

Letter 9: Bruce Livingston, Livingston Dairy Consulting, Inc.

Letter 10: Martin Levine, Valley Management Systems, Inc.

Letter 11: Lori Cardoza, Sousa & Sousa Dairy

Letter 12: Caroline Farrell, Center on Race, Poverty & the Environment, California Rural Legal Assistance Foundation

California Regional Water Quality Control Board
Central Valley Region
Steven T. Butler, Chair

Winston H. Hickox
Secretary for Environmental Protection

Gray Davis
Governor

Fresno Branch Office
Internet Address: http://www.swrcb.ca.gov/~rwqcb5
3614 East Ashlan Avenue, Fresno, California 93726
Phone (559) 445-5116 • FAX (559) 445-5910

Letter 1

11 January 2000

Ms. Jennifer Munn
Tulare County Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277

REVIEW OF DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR), SCH 99031044, ANIMAL CONFINEMENT FACILITIES PLAN: PHASE 1, TULARE COUNTY

Thank you for the opportunity to provide comments on the subject DEIR. We have reviewed the draft Animal Confinement Facilities Plan with reference to our water quality requirements and concerns. Our comments are contained in the enclosed memorandum.

We hope our comments are helpful. If you have any questions regarding this matter, please feel free to give me a call at (559) 445-5455.

LONNIE M. WASS
Senior Engineer
RCE No. 38917

Enclosure

cc: State Clearinghouse, Sacramento

Winston H. Hickox
Secretary for Environmental Protection

California Regional Water Quality Control Board

Central Valley Region

Steven T. Butler, Chair

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Gray I
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TO: Lonnie Wass
Senior Engineer
RCE No. 38917

FROM: Cliff Raley
Associate Engineering Geologist
CEG No. 1992

Matt Scroggins
Water Resource Control Engineer

DATE: 11 January 2000

SIGNATURE: Cliff Raley

SIGNATURE: Matt Scroggins

SUBJECT: TULARE COUNTY DRAFT ANIMAL CONFINEMENT FACILITIES PLAN, DECEMBER 1999

The following comments pertain to the subject document and are arranged by section number in ascending order:

1. SECTION 1.3.2: STATE STANDARDS (PG. 8)

COMMENT:

The second paragraph in the section describes the state regulations, but indicates that the regulations are in Title 23 of the California Code of Regulations (CCR). The regulations were moved to CCR,Title 27 in 1997.

2. SECTION 2.3: "SOIL LOADING CAPACITIES" (PGS. 18-21)

In calculating equivalent herd sizes, Tulare County uses a 1400-pound animal unit (the approximate weight of a mature Holstein milk cow). To calculate nitrate production by the herd, the County uses 0.80 lbs/day, 0.45 lbs/day, and 0.225 lbs/day for milk cows, dry cows, and replacement heifers, respectively. An initial nitrogen loss of 50% is assumed in the calculations, and additional losses are assumed to occur in the lagoon depending on retention time. If retention in the lagoon is <30 days a 30% nitrogen loss is assumed, if retention is between 30 and 60 days a 40% nitrogen loss is assumed, and if the retention time is 60 days or more a 50% nitrogen loss is assumed. Nitrogen assimilation is assumed to occur at a rate of 250 lb/ac/yr in single crop rotation, and at 350 lb/ac/yr in double crop rotation.

The above values are used to calculate maximum animal units (AUs) per acre based on cropping practice and waste disposal practice. For a typical dairy (approximately 1000 AUs) the allowable AUs/ac range from 9.71 for open corral, double cropped, and 100% disposal of

solids off site; to 2.98 for open corral, single cropped, and 100% disposal of solids on site, as shown on Tables 2.3-1 and 2.3-2 of the subject document.

COMMENT:

Tulare County has used, and appears will continue to use, a formula for assessing the reasonableness of a dairy proposal that relates all calculations to a 1400-pound cow. Many counties and consultants are using the formulas in the guidebooks developed by the Natural Resource Conservation Service that relate all calculations to a 1000-pound animal. Our preference is use of the 1000-pound animal unit, but either is useful, and both have their limitations.

The method used by the county yields results that are very similar to results obtained using the current Regional Board method, as described in the Central Valley Region, Fact Sheet No. 4 For Dairies. However, the Fresno Branch Office of the Central Valley Region also considers salt loading in determining the required acreage of cropland. As shown on Attachment A, the County's omission of salt loading considerations can lead to significant discrepancies in the allowable AUs/ac. The problem with deferring salt loading considerations to Regional Board staff is that the dairies are often designed and constructed based on the County-approved method. A change in design could be very expensive by the time these dairy operators learn that there is also a salt loading limitation. Therefore, it is recommended that the County include salt-loading criteria in the subject document. In areas where salt constituents have not impaired groundwater, the salt limitation used by the Regional Board based on historic best management practices is 2000 lb/ac/yr for single cropped rotation, and 3000 lb/ac/yr for double cropped rotation. More stringent criteria are needed in areas where the groundwater has been impacted by salt migration. Salt production calculations are based on 1.8 lb/day per 1400-pound AU. 1

Section 3.1 (p. 23) of the subject document states that the Regional Board shall determine the adequacy of salt loading rate plans, but the salt loading criteria are not provided. Page 23 would be a good location to insert these criteria.

A limitation in the use of either of the formulas is that they normalize all factors, and then incorporate the normalized factors into equations to determine loading rates and sizes. Every dairy operates a little different, every dairymen feeds a little different, each pond performs a little different, land cropping is not all the same, etc. The formulas are useful in sizing a new dairy when no other information is available, but actual performance of an existing dairy should be used to evaluate its expansion plans. Has the dairy already polluted groundwater? What is the past cropping pattern and what is planned as a change? How much solid and liquid manure are currently being produced? How much salt and nitrogen are currently discharged, and how will this change? Where has excess solid waste been used and is there capacity for more? The use of performance data for consideration of a proposed increase is far superior to use of normalized factors for all California dairies, if not all dairies across the nation. The performance data is the information the dairyman must use to know whether he is applying his waste at reasonable rates anyhow, and is not unreasonable to expect with any request for an increase.

The formulas automatically assume that there is capacity at other farms for the solid waste generated at a dairy. See our comments on Section 4.5.3.

In the footnotes of Table 2.3-1, "Affluent" should be "Effluent".

3. SECTION 4.3.1, SETTING (PGS. 47-50)

COMMENT:

The Tulare Lake Basin is essentially a closed basin with very little subsurface outflow. Consequently, salt accumulation in the basin is of concern. The Water Quality Control Plan for the Tulare Lake Basin (Second Edition-1995) states, "the paramount water quality problem in the Basin is the accumulation of salts." 2

The second paragraph on page 50 states that Figure 4-15 is a map of groundwater elevations for the spring of 1986. However, Figure 4-15 indicates the map is from the spring of 1984.

4. SECTION 4.3.1, ACFP POLICIES AND STANDARDS (PG. 50)

Policy No. 2 states, in part, "The intent of this policy is to avoid the excessive application of nitrates, salts, and other minerals."

COMMENT:

No criteria are given to prevent the excessive application of salts.

5. SECTION 4.3.1, IMPACT # 4.3.1-1 (PG. 51)

"Excessive application of dry or liquefied animal wastes on fields may results in high concentrations of nitrogen, salts [emphasis added] and other minerals in the soil. Mitigation Measure #4.3.1-1 states "Application of dry or liquid nutrient matter to agricultural fields at an acceptable agronomic rate based on soil type and cropping pattern." 4

COMMENT:

Salt accumulation in soils is identified as a potential problem. The mitigation measure is the application of wastes at agronomic rates, but no criteria are given.

6. SECTION 4.3.1, IMPACT #4.3.1-2 (PG. 52)

COMMENT:

The discussion/conclusion paragraph references Title 23 as the source of state requirements. The regulations are currently in Title 27 of the California Code of Regulations.

7. SECTION 4.3.1, MITIGATION MEASURE #4.3.1-1 (PG. 53)

This section states that dry and liquid nutrient matter shall be applied at agronomic rates. The "Implementation/Monitoring" of this mitigation measure states: "This measure will be implemented through compliance with ACFP Locational and Animal Density Policy No. 2,

Compliance and Monitoring Policies Nos. 1, 2, and 3, and COA Nos. 1 and 2. Monitoring will be by Tulare County RMA in coordination with the Central Valley RWQCB."

5

COMMENT:

The compliance and monitoring policies are listed in Section 3.2 (pg. 28), and the conditions of approval (COA) are listed in Section 3.3 (pp 29 – 33). These policies do not require any type of water quality monitoring.

8. SECTION 4.3.1, MITIGATION MEASURE #4.3.1-2 (PG. 53)

"Design and construction of wastewater holding ponds shall be [in] accordance with Title 27 of the California Code of Regulations (Water Code) including ..."

COMMENT:

Title 27 of the California Code of Regulations is not the Water Code.

9. SECTION 4.3.1, MITIGATION MEASURE #4.3.1-7 (PG. 55)

This section states: "At the time of application submittal for new dairies and other animal confinement facilities, a geo/hydro report prepared by an appropriately accredited professional shall be submitted which documents the existing soil and groundwater conditions for the project site. Applies to Impact #4.3.1-1."

COMMENT:

The hydrogeologic report should be prepared by an appropriately licensed professional and should, at a minimum, contain the following information:

a. A description of the groundwater conditions beneath the site including perched zones, uppermost aquifer, confined aquifer(s), current depth to groundwater (perched zones and aquifer(s), and the highest anticipated level of groundwater beneath the site.

b. A description (and groundwater contour map) of the groundwater gradients in the uppermost aquifer beneath the site.

c. Water quality data obtained from analyses of samples taken from the uppermost aquifer beneath the site. At a minimum the analytical data should include nitrates, nitrite, total Kjeldahl nitrogen, total dissolved solids, and pH.

6

This section also states: "Monitoring will be by Tulare County RMA, Tulare County Environmental health Department, and Central Valley RWQCB." Monitoring should be conducted by the appropriately licensed professional, retained at the discretion of the dairy operator, and results should be submitted to Tulare County RMA, Tulare County Environmental health Department, and Central Valley RWQCB.

10. SECTION 4.3.1, MITIGATION MEASURE #4.3.1-8 (PG. 55)

"Installation of wells to monitor nitrate and salt levels for all new dairy and other animal confinement facilities. Applies to Impact #4.3.1-1."

COMMENT:

Groundwater monitoring should be required for all new dairies and all dairy expansions of concentrated animal feeding operations (CAFOs). The monitoring system should be designed by an appropriately licensed professional. The monitoring system should be adequate to monitor upgradient and downgradient water quality to determine if water infiltrating from the wastewater pond(s), corrals, and in some cases fields are impacting water quality. Monitoring parameters should include those constituents described in the above Comment 9c. Well design and construction must comply with local and state regulations.

Other questions that remain are: Will this mitigation require a groundwater monitoring plan that is subject to review? If so, who will review the plan? Why isn't groundwater monitoring a condition of approval in Section 3.3 of the draft EIR?

11. SECTION 4.5.3: ADOPTION OF ACFP WITH A COUNTYWIDE CAP ON THE NUMBER OF ANIMALS

The section describes a countywide cap on the total dairy herd size in Tulare County. If we understand the rationale, it narrows the available land where dairies could be developed, reducing the potentially developable land to 122,037 acres. The 122,037 acres are added to the 81,640 acres of existing dairy land. The sum (204,577) is multiplied by four (1400 pound animal units), for resulting maximum total animal units of 818,309.

COMMENT:

The complexity of the actual situation is grossly over simplified. It fails to evaluate all sources of manure and cropping patterns of the land.

For example, few of the dairies in Tulare County have sufficient land for disposal of all of the animal waste they generate. Page 46 of the DEIR says the existing overall average of total animal units per net crop acreage is 7.07 (1400-lb) AU/ac. Assuming the dairy farm land is all double cropped with crops capable of using 4.0 AU/ac (and not all of it is double cropped), at least 3.07 AU/ac must be hauled off of the dairies. The waste has little monetary value as a fertilizer and, because it is so heavy, one cannot expect it will be trucked far. At least 68,000 acres (3.07 AU/ac × 88,783 ac × ¼ ac/AU) of double- cropped land are needed just for the solid waste from existing and currently proposed dairies.

There are also other confined animal facilities that already exist in Tulare County. According to the 1997 USDA Census Report, there was an inventory of 116,390 hogs in Tulare County. Assuming an average weight of 80 pounds (considering most were probably feeders), and one cubic foot per day per 1,000 pounds of live weight, applying ten cubic yards per acre, about 12,000 acres are needed for the hog waste.

Then there are the poultry facilities. The 1997 USDA census report said there were 22,000 layers and pullets 13 weeks and older in Tulare County. The census does not say how many broilers were raised in 1997, though it does say 5,776,222 were sold in 1992. The number of farms raising broilers reduced from 15 to 9, but our guess is that the farms that closed were probably not the big producers. Assuming there are 1,000,000 one-pound birds on average held through the year, a waste production of 0.9 cu. ft. per day per 1,000 pounds, and ten yards per acre of applied manure, means about 1,200 acres are needed for the poultry waste. 8

We have do not have sufficient information on beef cattle in confinement to make any projections.

There are also other sources of manure. Manure is defined in the American Heritage Dictionary as "Animal dung, compost, or other material used to fertilize soil." Green waste is being composted in Tulare County. Industrial commodities waste like whey and wine stillage are used for manure. There are other agricultural byproducts like litter and cull fruit. Tulare County has a population of around 360,000 people and growing, so there is also septage, biosolids from the wastewater treatment plants, municipal wastewater, and industrial wastewater, all which provide nutrients to the farmland.

Finally, not all of the 204,577 acres need the nutrients provided by four AU/ac. Land with a single crop of cotton or grain, fruit or nut trees, and vineyards need less nitrogen than that provided by 4 AU/ac. Many alfalfa growers will not fertilize with manure because of the concern with weed seeds. These numbers represent our general knowledge of the county and should be reviewed and improved, but it's obvious Tulare County cannot support 818,309 total dairy animal units.

12. APPENDIX H

COMMENT:

Appendix H is entitled "Draft Tulare County Comprehensive Nutrient Management Plan". The document includes summary rainfall data for Merced County, which should be replaced with data for Tulare County. But on a more general note, the document falls well short of being a "Comprehensive Nutrient Management Plan". A comprehensive nutrient management plan must provide the dairyman with the tools he needs to apply the waste at reasonable rates considering all factors. The document does not do this, and is simply gross projections of waste generated based on normalized data, plus some basic information about his farm. Draft guidance on developing a comprehensive nutrient management plan is now available from the Natural Resources Conservation Service. The contact person is Obie Ashford, at (301) 504-2197, or by e-mail at obie.ashford@usda.gov. Other technical documents are available from the NRCS at http://www.ncg.nrcs.usda.gov/tech_ref.html. 9

SUMMARY AND CONCLUSIONS

1. The document acknowledges, in numerous locations, the importance of ensuring that soils are not overloaded with salts. However, no salt loading criteria are provided. The nitrogen limitations provided in the document can result in excessive salt loading as shown on

Attachment A. The salt loading criteria used by the Fresno Branch Office are relatively simple and should be included in the subject document.

2. The document states that groundwater quality data is needed prior to the approval of a new dairy operation (Mitigation Measure #4.3.1-7), and that wells will be installed to monitor nitrate and salt migration to groundwater. However, neither the Policies (Section 3.1, and 3.2) or Standard Conditions of Approval (Section 3.3) require the installation of monitoring wells. Groundwater monitoring should be required as described in the above Comments 9 and 10.

3. The DEIR needs to examine in more depth the different manure sources in the county and determine if enough land exists for the disposal of manure.

ATTACHMENT A - Maximum AU/ac for Nitrogen and Salt Loading
Modified To Include Salt Loading, Tulare County Draft EIR, Table 2-3-2
Open Corral (60% of Wastes Collected in Liquid Form)

Example 1, Double Cropped, All Dry Waste Disposed off site, With Nitrogen Retention In Lagoon at 70%, 60%, and 50%.

	Animals	AU Factor	AUs	#N/d	loss	Wet collected	days	#ofN	Wet	% Retention	Req. Ac.	Nitrogen AU/ac	Salt AU/ac
Milk Cows	600	1	600	0.8	0.5	0.6	365	52560	50348	@70%	144	6.93	(7.61)
Dry Cows	102	0.75	76.5	0.45	0.5	0.6	365	5026	43155	@60%	123	(8.08)	
Heifer	582	0.55	320	0.225	0.5	0.6	365	14339	35963	@50%	103	(9.70)	
Note: *Ave of .7 and .4 is 0.55			997					71925					

	Animals	AU Factor	AUs	#N/d	loss	Dry collected	days	#ofN	Solid	% Retention
Milk Cows	600	1	600	0.8	0.5	0.4	365	35040	33565	@70%
Dry Cows	102	0.75	76.5	0.45	0.5	0.4	365	3351	28770	@60%
Heifer	582	0.55	320	0.225	0.5	0.4	365	9559	23975	@50%
Note: *Ave of .7 and .4 is 0.55			997					47950		

Total wet/dry N produced after initial 50% loss= 119875

Salt is limiting factor when 60% and 50% nitrogen retention is assumed in lagoon, in addition to initial 50% N loss.

Example 2, Single Cropped, All Waste Disposed On Site, Nitrogen Retention In Lagoon And Corrals At 70%, 60%, and 50%.

	Animals	AU Factor	AUs	#N/d	loss	Wet & Dry collected	days	#ofN	Total	% Retention	Req. Ac.	Nitrogen AU/ac	Salt AU/ac
Milk Cows	600	1	600	0.8	0.5	1	365	87600	83913	@70%	336	2.97	(3.04)
Dry Cows	102	0.75	76.5	0.45	0.5	1	365	8377	71925	@60%	288	(3.46)	
Heifer	582	0.55	320	0.225	0.5	1	365	23898	59938	@50%	240	(4.16)	
Note: *Ave of .7 and .4 is 0.55			997	Total N after initial 50% loss=				119875					

Salt is limiting factor when 60% and 50% nitrogen retention is assumed in lagoon, in addition to initial 50% N loss.

Letter 1: Lonnie Wass, Central Valley Region, California Regional Water Quality Control Board

Response to Comment 1: As noted in the comment, Tulare County has historically used the 1,400 pound cow (approximate weight of a mature Holstein milk cow) equivalent for calculating animal units. To acknowledge this concern, the Agricultural Advisory Committee (AAC) has recommended that an animal unit conversion table be included in the policy section of the ACFP which reflects both the 1,400 pound and 1,000 pound animal unit equivalent. The AAC also recommended that salt loading criteria be included in Policy No. 2.

The commentor indicates the importance of utilizing performance data to determine whether waste is being applied at reasonable rates. It is intended that the information contained in the Annual Compliance Report, a requirement stipulated in Compliance and Monitoring Policy No. 1, will assist both the dairy operators and responsible agencies in monitoring such performance data. A proposed draft Annual Compliance Report was included as Appendix D; however, as stipulated in Policy No. 1, the form of such a report will be established by subsequent Ordinance. Additionally, Compliance and Monitoring Policy No. 3 stipulates that all dairies in the county shall ultimately be subject to the new ACFP policies, specifically waste loading requirements.

Response to Comment 2: The commentor's statement regarding the Tulare Lake Basin in noted. The reference to Figure 4-15 located in the second paragraph on page 50 should read Spring of 1984; the reference will be corrected the Final ACFP document.

Response to Comment 3: Refer to Response to Comment 1 above.

Response to Comment 4: As noted in Comment 1, salts loading criteria will be added to Policy 2. Acceptable agronomic application rates beyond those criteria will be established utilizing site specific information on a case-by-case basis. Policy No. 2 requires that a salt loading report containing specific information be submitted to assist in determining what the acceptable application rate would be for each individual site. Mitigation Measure #4.3.1-5 proposes the preparation and submittal of a Comprehensive Nutrient Management Plan (CNMP) for all existing and proposed animal confinement facilities. The site specific information included within the CNMP will also assist in establishing acceptable agronomic application rates. Also refer to Response to Comment 1 above.

Response to Comment 5: Water quality monitoring is addressed in Mitigation Measure #4.3.1-8. As required under CEQA Guidelines Section 15097, the lead agency must adopt a mitigation monitoring or reporting program for those revisions or measures incorporated into a project to reduce or avoid significant environmental effects. The mitigation monitoring plan will specify, among other standards, who will monitor and how often.

Section 15041(a) of the CEQA Guidelines states that:

> A Lead Agency for a project has authority to require feasible changes in any or all activities involved in the project in order to lessen or avoid significant effects on the environment, consistent with applicable constitutional requirements such as the "nexus" and "rough proportionality" standards established by case law (*Nollan v. California Coastal Commission* (1987) 483 U.S. 825, *Dolan v. City of Tigard*, (1994) 512 U.S. 374, and *Ehrlich v. City of Culver City* (1996) 12 CAL. 4th 854).

Specific requirements that are identified as mitigation measures and determined by the Lead Agency to be feasible are incorporated into individual projects through conditions of approval, addressed as "mitigation measures" or "environmental conditions". Incorporation of mitigation measures into policies or standard conditions of approval, although sometimes appropriate, is not necessary.

Response to Comment 6: Mitigation Measure #4.3.1-7 is revised to read as follows:

Mitigation Measure #4.3.1-7: At the time of application submittal for new dairies and other animal confinement facilities, a geo/hydro report prepared by an appropriately accredited professional shall be submitted which documents the existing soil and groundwater conditions for a project site. Applies to Impact #4.3.1-1. *The report should, at a minimum, contain the following information:*

a. *A description of the groundwater conditions beneath the site including perched zones, uppermost aquifer, confined aquifer(s), current depth to groundwater (perched zones and aquifers), and the highest anticipated level of groundwater beneath the site.*
b. *A description (and groundwater contour map) of the groundwater gradients in the uppermost aquifer beneath the site.*
c. *Water quality data obtained from analyses of samples taken from the uppermost aquifer beneath the site. At a minimum the analytical data should include nitrates, nitrite, total Kjeldahl nitrogen, total dissolved solids, and pH.*

In regard to monitoring, please refer to the Response to Comment 7.

Response to Comment 7: The AAC has further reviewed the requirement for installing monitoring wells as set forth under Mitigation Measure #4.3.1-8. The AAC concurred with the requirement for monitoring wells but had concerns with requiring them for all animal facilities since the potential for groundwater contamination is less likely in areas where the groundwater is deep (generally more than 100 feet) and the soils are not highly permeable. It was generally agreed that the results of the required Geo/hydro report specified in Mitigation Measure #4.3.1-7 (reference discussion in Response to Comment 6 above) should be used to determine whether or not monitoring wells are required. It was also pointed out that the requirement for monitoring wells is not actually a mitigation measure but the mitigation will come as a result of the monitoring. The waste loading

standards included in ACFP Policy No. 2 are really the mitigation measures and use of the monitoring wells will assure that the waste-loading standards are really working.

Mitigation Measure #4.3.1-8 is revised to read as follows:

Mitigation Measure #4.3.1-8: *Based on the information contained in a site-specific geological/hydrological report,* ~~Installation of~~ wells to monitor nitrate and salt levels *may be required.* ~~for all new dairy and other animal confinement facilities~~. *If monitoring wells are determined to be necessary, a groundwater monitoring plan, prepared by an appropriately licensed/accredited professional shall be developed and submitted for approval.* Applies to Impact #4.3.1-1.

> **Effectiveness of Measure:** Testing of the *groundwater* ~~nitrate levels~~ will provide baseline information to ensure compliance with ACFP policies and standards.
>
> **Implementation/Monitoring:** Monitoring wells will be installed in accordance with State and County Well Ordinances. *A groundwater monitoring plan* ~~Monitoring~~ will be *submitted for review* by Tulare County RMA, Tulare County Environmental Health Department, and Central Valley RWQCB.

Response to Comment 8: As discussed in Section 4.5 of the draft PEIR, CEQA requires that alternatives to a proposed project be discussed in the EIR. The purpose of the discussion is to evaluate the differential environmental impacts associated with alternatives that may reduce or avoid identified significant effects associated with the project. The range of potential alternatives evaluated should include those that could feasibly accomplish most of the basic purposes of the project and could avoid or substantially lessen one or more of the significant effects.

The commentor states that the alternative discussed in Section 4.5.3 (adoption of a countywide cap on the number of animals permitted in the county) is grossly over simplified because it fails to evaluate all sources of manure and cropping patterns of the land. An inventory of manure sources and application is not currently available. It has been stated in recorded public hearings that a substantial amount of manure is exported from the county, however, as noted above, no support documentation is available. The implementation of ACFP policies (e.g., preparation of CNMPs and annual compliance reports) will provide the basis for building such an inventory.

The discussion of the alternative is adequate to identify the nature of potential impacts associated with the implementation of the alternative and to provide a comparison of those environmental impacts with those identified for the project. As concluded in the discussion, the nature of the environmental impacts associated with this alternative would be the same as those for the proposed project which satisfies the requirements of CEQA.

Response to Comment 9: Appendix H is provided as an example of a proposed draft CNMP. Rainfall information for Tulare County will provided in the draft CNMP prior to final publication. As noted in Mitigation Measure #4.3.1-5, Implementation/Monitoring,

the requirement to prepare and submit a CNMP will be established by a subsequent ordinance. Comments on the format of the CNMP received during the review of the ACFP/PEIR will be useful in developing the subsequent ordinance. To the extent possible, the information required pursuant to this measure would be consistent with plans and/or reports that are required for submittal to other agencies.

It is noted that the Natural Resources Conservation Service (NRCS) has prepared a document entitled "Technical Guidance for Developing Comprehensive Nutrient Management Plans". The draft document was released by NRCS for a 90-day review and comment period beginning December 9, 1999. As described by NRCS, the document was prepared as a technical guide for use by persons developing CNMPs and is not intended to establish regulatory requirements for local, tribal, state or federal programs, nor is it intended as a sole source or reference for developing CNMPs.

STATE OF CALIFORNIA-BUSINESS, TRANSPORTATION AND HOUSING AGENCY GRAY DAVIS, Governor

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Phone #	Phone # 445-5465	
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Letter 2

January 20, 2000

IGR/CEQA
6-TUL-GEN
SCH# 1999031044
ANIMAL CONFINEMENT
FACILTIES PLAN

County of Tulare
Resource Management Agency
5961 South Mooney Boulevard
Visalia, CA 93277

Attention: Jennifer Munn

We have reviewed the Draft Environmental Impact Report (DEIR) for the proposed amendment to the Tulare County General Plan. The proposed amendment involves the adoption of the Animal Confinement Facilities Plan into the Environmental Resources Management Element of the Tulare County General Plan. Caltrans has the following comments:

- Page 30, Section 3.3-4 states "All drive approaches at driveways and major entrances to the improved portion of the site shall be constructed and surfaced as per the Tulare County Improvement Standards, and the applicant or his contractor shall obtain an encroachment permit from the Tulare County Resource Management Agency ..."

  If the proposed driveway is to be located on a State Route, Caltrans needs to review the driveway to ensure that the proposed driveway meets current State driveway standards.

  An Encroachment Permit must be obtained from this agency for any work within the State right-of-way. Engineering drawings of all work are to be submitted with the application and must be prepared in metric. Work planned within the State right-of-way will be performed to State standards and specifications at no cost to the State. Plans for said work need to be reviewed and approved by the Permit Department before a permit can be issued.

- Page 42, Section 4.1.4, Traffic/Circulation only addresses increases in "truck traffic."

  AM/PM peak hour trips generated by employees going to and from work may have an impact on the State highway system. Caltrans needs to review all proposed future development and require mitigation when necessary.

- Page 37, Table 4, Impact Number 4.3.2-1 shows that no mitigation would be required for the "Increased Traffic Generation" impact.

  As stated above, Caltrans needs to review all proposed future development and require

3

mitigation when necessary.

- Page 61, Impact/Mitigation Measure #4.3.2-1 only discusses potential impacts to local roads and also indicates that "...dairies are typically located in more remote areas served only by farm-to-market roads..."

  Figures 4-6, 4-7 and 4-23 of the DEIR show several proposed dairies in proximity to State facilities which will need to be reviewed by Caltrans for impacts to the State highway system. 4

Please send a response to our comments and a copy of the Board resolution related to the proposed Tulare County General Plan amendment. If you have any questions, please call me at (559) 445-5465.

Sincerely,

Wilma C. Quan

WILMA C. QUAN
Office of Transportation Planning

cc: Scott Morgan, State Clearinghouse

Letter 2: Wilma Quan, State of California, Department of Transportation (Caltrans)

Response to Comment 1: Commentor refers to the Standard Conditions of Approval for Special Use Permits. When a proposed application is adjacent to or within two miles of a State highway, Caltrans is contacted by RMA staff during the consultation process. Recommendations and/or conditions of approval are incorporated into projects as appropriate.

Response to Comment 2: Page 42 of the draft PEIR provides only a summary of issues to be addressed. The actual discussion of potential traffic-related impacts and suggested mitigation measures is located on pages 61 and 62 of the draft PEIR. It is acknowledged that non-truck trips could increase with the addition of employee traffic when workers do not live on-site, however, this increase generally would be diminimus due to the low number of trips generated. This issue would be further evaluated in subsequent project specific evaluations. Truck traffic is specifically addressed because of the additional wear-and-tear and maintenance requirements for roads that are not designed or built to withstand the heavy wheel loads.

Response to Comment 3: Refer to Response to Comment 1 above.

Response to Comment 4: Refer to Response to Comment 2 above.

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To Jennifer Munn | From Joe O'Banion
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Phone # | Phone #
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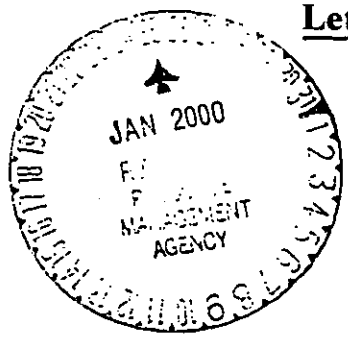
San Joaquin Va
Air Pollution Contro

Letter 3



January 25, 2000

Jennifer Munn
TULARE COUNTY
Resource Management Agency
5961 South Mooney Blvd.
Visalia, CA 93277

Subject: **Draft Program Environmental Impact Report (PEIR) for a proposed Amendment to the Tulare County General Plan – Adoption of Phase I of the Animal Confinement Facility Plan** *(SCH #99031044)*

The San Joaquin Valley Air Pollution Control District (District) has reviewed the project referenced above and offers the following comments:

Overall, the District would like to commend staff on the careful examination of the air quality issues related to this project. The District is satisfied that air quality concerns of this project were sufficiently addressed in the Draft PEIR. The District concurs with the conclusions of the Draft EIR that some air quality impacts from this project will still be significant and unavoidable after mitigation measures are applied. 1

The District's 1997 PM10 Attainment Demonstration Plan commits to studies that will examine emissions from a broad range of agricultural sources. The District worked closely with the agricultural community and University of California, Davis in designing and scheduling the studies. One component will look at volatile organic compounds (VOC), ammonia, and fine particulate matter (PM10) from confined livestock operations, including dairies. (Reactive organic gases (ROG) discussed in the Draft EIR are similar to VOC). Data analysis and final reports are due at the end of 2000. Control strategies developed from this information are expected to be implemented by 2004. The District is following dairy projects in the Valley closely to determine their impact on the emissions inventory and their effect on attainment projections. 2

The Mitigation Measure #4.3.3-1, relating to the District's Regulation VIII Fugitive Dust Rules, is discussed on Page 74 as applying to Impacts #4.3.3-1, #4.3.3-2, and #4.3.3-3. While it would apply to the first Impact (construction-related emissions), unless your agency adopts and applies the regulations specifically to operational conditions, regulation VIII would not apply. 3

Although agricultural facilities are not subject to District permitting authority, the District recognizes that dairies can be substantial sources of pollutant emissions and therefore supports the Lead Agency's efforts to mitigate emissions from dairy operations. Many Measures in this document demonstrate the your agency's desire to mitigate where feasible. The District concurs with the Draft PEIR that there will be a less-than-significant impact from traffic-generated air pollutants. 4

The District recognizes that this comment letter is past the date set by your agency to end receipt of comments. These comments are late due to unforeseen circumstances and if they are too late to be included in your process, please disregard.

The District appreciates the opportunity to comment on this project. If you have any questions, please do not hesitate to contact me at (661) 326-6980.

Joe O'Bannon
Air Quality Planner, Southern Region

APCO Ref #: S990387

Letter 3: Joe O'Bannon, San Joaquin Valley Air Pollution Control District

Response to Comment 1: The commentor's statements are noted for record, specifically that the District's concurrence that air quality issues and concerns have been adequately addressed in the draft PEIR.

Response to Comment 2: The second paragraph on page 69 of the draft PEIR notes that the SJVUAPCD is participating with other groups in a valley-wide PM study. The commentor's statements expanding the purpose of the study is noted for the record. When the final report is completed by the end of 2000, it should be referred to the County for review to determine if any revisions to the ACFP/PEIR are appropriate.

Response to Comment 3: It is noted on page 72 of the draft PEIR and in Appendix K that the Regulation VIII Fugitive Dust Rules, as adopted by the District, apply only to construction activities. Because many of the measures identified would reduce or avoid potential impacts associated with operational activities as well, it is intended that these measures be incorporated into future projects through Mitigation Measure #4.3.3-1.

Response to Comment 4: The District's concurrence with the discussion contained in the draft PEIR is noted.

UC CE Cooperative Extension
University of California
County of Tulare

2500 West Burrel Avenue • Visalia, California 93291-4584
Telephone: (559) 733-6363 • Fax: (559) 733-6720
Web Site: www.ucce.tulare.ca.us

Letter 4

1/21/00

Ms. Jennifer Munn
Tulare County Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277

REVIEW OF DRAFT ENVIRONMENTAL IMPACT REPORT (DEIR), SCH 99031044, ANIMAL CONFINEMENT FACILITIES PLAN: PHASE 1, TULARE COUNTY

This is an excellent compilation of the many diverse factors that are involved in animal confinement and should be of great help for both the industry and allied agencies in management of the situation. Annexed are my comments on the DEIR printed in December 1999. Several of these comments were discussed with Ms. Janet Jiggerian but have not yet been included in the December draft. Please excuse the tardiness in my reply and if there are any questions on my comments, call me at 733-6488 or fax 733-6720.

Respectfully,

Tom Shultz, Dairy Advisor
University of California Cooperative Extension.

cc: Jim Sullins, County Director, UCCE

The following comments on the DEIR are by section and page number, in ascending order.

1.1 page 5. The reference (Tom Shultz, January 1999) should be changed to (Tom Shultz, U.C. Cooperative Extension 1999) to be consistent with other citations appearing later in the draft.

2.1 page 14. In the sentence..A variety of feeding methods is possible including chuck wagons and fence line feeding. the word chuck should be replaced with the word mixer.

2.1 page 15. Calf & Young Stock Facilities– add at end that animals are grouped according to age and size.

2.2.1 page 16. The last sentence in the second paragraph should more correctly state..there is almost always a noticeable odor in the immediate area.

2.2.1 page 16. After the last sentence of Combination Systems: add...Dirt removed from the pits are used to slope corrals for drainage back to the lagoons.

2.3 pages 18 & 19. References to J. Meyer/ Rauschkolb & Olson 1996...should be 1976.

2.3 page 19. Add a sentence that...NRCS allows 425 lbs. of N for a double crop rotation, if evidence of maximum yields. However, RWQCB limits AU/ac. for total salts to 2,000 lbs/ac./yr for single crop and 3,000 lbs. for double cropping and salt production calculations use 1.8 lb./day/1,400 lb AU (does not include N).

3.3 page 31. Item 16. suggest adding...The lagoons shall not cause pollution of ground water by meeting soil texture requirements of the RWQCB.

Table 4. 4.3.1-8 does this mean a dairy shall install a monitor well? 1
Table 4. 4.3.3-3,4,5 does this mean a dairy shall not be required to mitigate?

4.3.1 page 51..Include RWQCB figures for salt loading and AU/day production (see comment 2.3 page 19 for numbers they use, which are also used in NRCS and UCCE publications. 2

4.3.1-4 page 52. change reference to (Tom Shultz, UC Cooperative Extension 1999) to be consistent..also, this reference was preliminary data that did not include all cow water...a later more accurate figure is a minimum of 100 gallons/cow/day..and the calculation in the next sentence should also be changed accordingly. 3

4.3.1-7 page 55. ? who will be accountable for site selection and efficacy of monitor wells? 4

4.3.3 Air Quality..page 68. No mention is made of background levels or whether the 50 lbs/head/year is relatively good or bad in relation to other air impact factors. This is needed to complete the "picture". 5

4.3.3-5. page 74. In discussion/conclusion it should be corrected to say free stalls are partially paved areas (they are not totally paved)..also it should be mentioned that watering open corrals can lead to increased fly and mastitis problems, while possibly reducing dust emissions.. 6

4.5.3 page 107. ACFP with county wide CAP.

The calculations make some assumptions that dairies would be accepted in most locations, which may not be true near certain crops. On the other hand, no figures are given on amount of manure and composted manure that is used as fertilizer for various crops in the county (trucking firms) or tonnage that is removed from the county (New Era Compost and others). The 1998 Ag Commissioner's Report listed manure as a $10 million dollar product and ranked 28th out of 51 commodities. 7

Appendix A page 1. Animal Confinement Facility: The definition should include all silage stacks and hay barns, as these are integral part of the CNMP total feed input and often are involved in pest management related to the dairy. 8

Appendix F Notice of Preparation..last page. Should the Army Corps of Engineers be included where vernal pools and wetlands are involved?

Appendix H. Tulare County Comprehensive Nutrient Management Plan.

a. It should be stated that this is a preliminary draft subject to changes from USEPA, NRCS and RWQCB before it is adopted. These agencies have yet to agree on a final CNMP.

b. This is a comprehensive manure management plan and not nutrients since it does not include details on cropping and/or feeding.

c. Are these figures based on a 1,000 lb. AU? The figure for the 1,400lb AU is 0.8 lbs. N and not 0.56 as mentioned here for milk cows. 10

d. Rainfall on west and east side of Merced should be replaced with Tulare County data

e. It is urged to incorporate the 2,000 lbs. salt/single crop and 3,000 lbs. salt for double cropping, along with 1.8 lbs. salt generated for 1,400 lb cow, to be concurrent with other agencies, as this will become the first limiting factor for AU/acre in the near future.

Appendix O. References. page 2. add ..Shultz, Tom UCCE Tulare County Dairy Advisor, personal communications.

Letter 4: Tom Shultz, Tulare County Dairy Advisor, Cooperative Extension, University of California

NOTE: The commentor has provided a number of changes and/or corrections to the ACFP document which will be incorporated in the Final ACFP document.

Response to Comment 1: Refer to Letter 1, Response to Comment 7.

Response to Comment 2: Refer to Letter 1, Response to Comment 1.

Response to Comment 3: The comment is noted and the changes will be incorporated into the final document. The recommended figure for water usage in gallons per cow per day (from 79 to 100 gallons) will result in a minimal if any change in calculating the average usage in acre feet.

Response to Comment 4: Refer to Letter 1, Response to Comment 7.

Response to Comment 5: The commentor is referring to an EPA report prepared on the development emission factors for ammonia and the study conducted in Orange County by the South Coast Air Quality Management District which both establish an emission factor of 50 lbs. of ammonia per cow per year. As stated on pages 68 and 69 of the draft PEIR, the report/studies relate to emissions factors only and currently there are no specific standards or thresholds established for ammonia. As noted in Letter 3 Comment No. 2, the SJVAPCD is participating in a valley-wide PM study. One component of this study will look specifically at VOC, ammonia and PM10 emissions from confined livestock operations, including dairies. Data analysis and final reports are due at the end of 2000. Information from the Reports will be utilized to develop control strategies that will be implemented by 2004. Until the report is completed and standards are developed, the relationship of emissions cannot be quantified.

Response to Comment 6: The comment is noted and the corrections will be made in the final document. It is noted that a mitigation measure may reduce or eliminate one impact while increasing the potential for another.

Response to Comment 7: The third paragraph under Section 4.5.3 on page 107 provides a description of the area calculated for available dairy development which excludes areas within designated windsheds and/or buffer areas. The comment that the 1998 Ag Commissioner's Report listed manure as a $10 million dollar product and ranked 28th out of 51 commodities is noted for the record. Although there is a dollar amount assigned this commodity, there is no inventory available for the sources, uses and exporting of manure. A monetary value is place on manure utilizing an estimated animal population in the county and calculating average waste generated by species. (Tulare County Agricultural Commissioner's Office, 1999) With the implementation of the proposed ACFP policies, an inventory of dairy manure use and exportation will be developed utilizing information provided in the Annual Compliance Reports. Additional

information can be added to this inventory upon completion of the second phase of the Animal Confinement Facilities Plan addressing non-bovine animal facilities.

Response to Comment 8: As noted in the definition of Animal Confinement Facility in Appendix A, the term is defined to address setbacks between animal facilities. It is noted that accessory or ancillary uses are integral parts of the operation, however, in determining required setbacks, the actual operating and housing facilities are of most importance. Feed and manure storage and handling areas are considered part of the operating facilities, however, utilizing hay barns, in determining setbacks would be inappropriate.

Response to Comment 9: The Notice of Preparation is provided in Appendix F for reference only. The Initial Study/Notice of Preparation process, as established by CEQA, is described in detail in the Response to Letter 9. The Army Corps of Engineers will be consulted on a project-specific basis whenever vernal pools or wetlands would be affected.

Response to Comment 10: Refer to Letter 1 Response to Comment 9.

For your brighter tomorrow

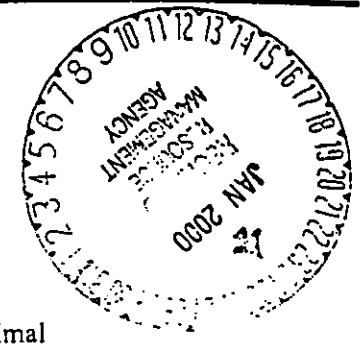
COUNTY OF TULARE
Health & Human Services Agency
Health • Human Services • Mental Health

Ronald W. Probasco
HHSA Director

Letter 5

ENVIRONMENTAL HEALTH SERVICES

January 24, 2000



JENNIFER MUNN
RESOURCE MANAGEMENT AGENCY
5961 SOUTH MOONEY BLVD
VISALIA, CA 93277-9394

Re: Draft EIR, Animal Confinement Facilities Plan, Phase 1: Dairy/Bovine Animal Confinement Facilities.

Dear Ms. Munn:

We have reviewed the above referenced Draft EIR and have the following comments to offer:

1. Chapter 2, section 2.3 Soil Loading Capacities, table 2.3-1 on page 19. (Foot note) The conventional terminology used is "effluent" rather than "affluent."

2. Chapter 3, section 3.2, page 28, item 3. The sentence "...brought into compliance within a reasonable period of time..." is too nebulous. A specific time frame should be recommended, such as six (6) months of one (1) year after establishment and implementation by ordinance.

   Section 3.3. Standard Conditions of Approval.
   Under item 1, last paragraph on page 29, was "beef cows in milk and feedlot steers" deliberately omitted from the listing or was it an oversight? Compare list on page 18 and 22 which included this item.

3. Chapter 4, 4.3.3. For a better overview, I recommend that you **bold** or have a separate heading of the particular pollutant being discussed under "summary of air pollutant properties...." on page 67, starting with **ammonia**, followed by **methane** on page 69; and **fugitive dust** on page 70.

4. On page 72 there is an unclear portion of a sentence in the next to the last paragraph, middle of the sentence ".....has determined that any significant of significance...."

5. Separate editorial comments and identification of typos will be forwarded to you under separate cover.

I trust this is the information you are seeking. Feel free to contact me for clarification.

Sincerely,

Jan A. Krancher
Environmental Health Specialist
Environmental Health Services Division.

JAK:jp

5957 S. Mooney Blvd. Visalia, CA 93277 (559) 733-6441 FAX 733-6932

Letter 5: Jan Krancher, Environmental Health Services Division, Tulare County Health & Human Services Agency

The comments provided in this letter relate to semantics, format or typographical errors or relate to ACFP policy issues. Policy No. 3 of the Compliance and Monitoring Policies state that existing facilities will be brought into compliance within a time frame that will be established and implemented by a subsequent ordinance. The commentor's opinion will be taken into consideration when the ordinance and other criteria concerning applicable standards for grandfathered facilities is prepared. The standard conditions of approval outlined in Section 3.3 are those that have and will continue to be incorporated into dairy use permit applications. Beef cows and feedlot steers are not typically found on a dairy.

Michael W. Alburn
Manager

Eva F. Garcia
Office Manager

DELTA VECTOR CONTROL DISTRICT

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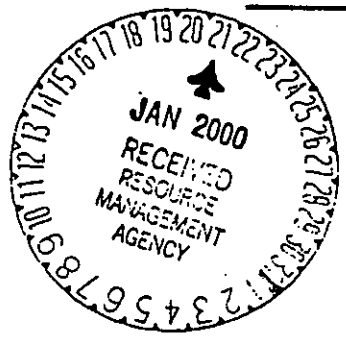
Rick Loop
Superintendent

Yolanda M. Lourenco
Biologist

Letter 6



January 20, 2000

Jennifer Munn
Tulare County Resource Management Agency
5961 South Mooney Blvd.
Visalia, CA 93277

Subject: GPA No. 99-05, Draft Environmental Impact Report (EIR), Animal Confinement Facility Plan (ACFP),

Dear Ms. Munn,

The Delta Vector Control District has reviewed the Draft, Phase 1, ACFP and EIR, dated December, 1999. Upon its review, there are a number of issues, which we feel, warrant comment.

1. Chapter 2, (2.2.1) Dairy Management Systems, defines a number of wastewater treatment systems, but does not address the need for both smaller solid separation ponds and larger water retention lagoons, or the need to limit the size of both, as a means of providing more effective control of mosquito populations. Unless an adequate solid separation system is in place, solids will eventually build up in lagoons, create mosquito-breeding habitat, and make effective treatment impossible. A minimum of two separation ponds are required to insure one can be utilized at all times, while the other is allowed to desiccate, making periodic solids removal facile. The use of separation ponds will further reduce the probability of solids and floatage building up in wastewater retention lagoons, which in turn will reduce potential habitat for mosquito larvae. Furthermore, solid separation ponds should not exceed sixty-feet in width, to facilitate effective treatment. (Cooperative Extension University of California, Division of Agriculture and Natural Resources Leaflet 21398) Limits to width dimensions of wastewater retention lagoons are also recommended. New dairies, and existing dairies wishing to expand, are becoming increasingly larger, with herd size greater than 2000 head or more. Often this results in the construction of enormous water retention ponds, considering only the need for increased holding capacity. Although

1

wide retention lagoons may increase the amount of surface action created by wind, making the deposition of mosquito eggs more difficult, widths greater than 100 feet makes mosquito control efforts virtually impossible, if an adequate solid separation system is not in place and waste becomes mismanaged.

2. Section 4.3.6 Hazards, mentions controlling flies, mosquitoes, and gnats as pest challenges for dairy operations and elaborates the nuisance factor of flies and gnats. It does not address the health and safety hazards associated with mosquito breeding, especially that of *Culex tarsalis*, the primary vector of the Western equine encephalomyelitis virus, and *Culex quinquefaciatus*, a secondary vector of St. Louis encephalitis. Both these mosquito species utilize dairy wastewater ponds as breeding habitats. To further magnify the threat of disease transmission, *Culex quinquefaciatus*, commonly called the southern house mosquito, frequently migrates from rural habitat to urban settings. This omission should be addressed, with hazards listed.
3. Impact #4.3.6-2: Increase hazard from mosquitoes, Discussion/Conclusion states "well-managed dairy holding ponds generally offer less mosquito-breeding habitat than irrigated pasture". To begin with, this statement is extraneous, with regard to disease transmission. The species of mosquito found most commonly breeding in pastures is the *Aedes nigromaculis*, and although the female feeds predominately on cattle and readily attacks humans, resulting in serious economic loss and considerable annoyance, they do not play an active role in the transmission of disease. Secondly, while it is true well-managed dairy holding ponds generally offer less mosquito-breeding habitat, many existing dairy holding ponds in Tulare County are not well maintained and therefore their impact should not be considered to be "less than significant with mitigation".
4. Mitigation Measures #4.3.6-1 and #4.3.6-2, Implementation/Monitoring, indicates "nuisance complaints are handled by the responsible mosquito abatement district". Delta Vector Control District is the only district in the county, which has an ongoing fly surveillance and management program in force. It should be clarified that we can only handle fly and mosquito complaints within our district boundaries, unless additional compensation is made to the District by contract. It should also be noted that approximately thirteen percent of the Tulare County population, in the cities of Lindsay and Porterville, does not receive mosquito control. The EIR infers that a local district will handle mosquito and fly complaints from residents in these areas. This is not the case, since these residents do not fall within the boundaries of any district.
5. Mitigation Measure #4.3.6-2 also refers to the use of a solid separator (gravity or mechanical) to reduce floatage on the holding pond. Mechanical separators a subject to frequent breakdown, which often result in no separation of solids and the accumulation of floatage in lagoons. Unless at least two solid separation (gravity) ponds can be utilized as a back-up system in the event of mechanical breakdown, inadequate separation will result.

6. Section 4.3.6 Hazards, page 95, paragraph 2, refers to "specific powers in addition to general powers" stating:
   - Extermination of mosquitoes, flies and other vectors either within the territory of the district or outside of the district to prevent migration into the district.
   - Extermination of rats; plan and undertake projects for algae research, monitoring and control.

   The wording of these statements is incorrect and implies district powers are limited to these areas. Districts do not exterminate, but control mosquitoes, flies, or other vectors as described in Article 4, 2270 of the California Health and Safety Code. Further, district powers are much more extensive than stated, although to my knowledge, districts do not undertake projects for algae research, monitoring or control. 6
7. With regard to determining the animal unit equivalency of a herd, the subject of Breed should be addressed. Although the majority of dairies in Tulare County utilize Holsteins as the breed of choice, a small percentage specialize in Jersey stock. Tulare County already anticipates a large influx of dairies from Southern California. Since there is no way of determining how many more relocating dairymen will utilize Jersey cows in their herds, the establishment of set guidelines for determining the animal unit equivalency for the Jersey breed will eliminate future disparity. Dairy designers will not have the option of arbitrarily assigning a factor of choice, when calculating solid waste and water retention capacity requirements. 7
8. Standard Conditions of Approval; 3.3, states "Conditions may be added and/or deleted prior to or during the course of the public hearing on specific applications." Our district contends there should be no deviation from the conditions set forth in item 29. of the Standard Conditions of Approval, unless the District is consulted and modifications or deletions are approved by the District, prior to any construction or modification of existing design. 8

The Delta Vector Control District appreciates the opportunity to respond to the Draft Animal Confinement Facilities Plan and, as always, is available to provide additional information, resources, and consultation.

Sincerely,

Yolanda Lourenco

Yolanda Lourenco
Biologist

Letter 6: Yolanda Lourenco, Delta Vector Control District

Response to Comment 1: The commentor's statements are noted for the record. Chapter 2 of the ACFP provides a description of commonly used waste disposal systems and is not intended to recommend one system over the rest.

Response to Comment 2: The following discussion is added to Section 4.3.6 after the third paragraph:

One of the most prevalent of all the mosquitoes in California is the Culex tarsalis mosquito which by instinct feeds upon wild birds and domestic fowl. In the absence of sufficient avian populations, they will feed on cattle, horses and humans. This species breeds in the wastewater lagoons of animal confinement facilities and is the primary vector transmitting Western Equine and St. Louis viruses, forms of infectious encephalitis (an inflammation of the brain). The Delta Vector Control District has trapped this species in the adult stage at a variety of wastewater lagoons in Tulare County. (Michael Alburn, April 1999) A listing of mosquito trap captures for the District between 1994 through 1998 is provided as an attachment to correspondence dated 4/9/99 from Delta Vector Control District in response to the Notice of Preparation included within Appendix F.

The southern house mosquito, Culex pipiens quinquefaciatus, is so named because it enters the house and bites indoors. It thrives in urban areas and is closely associated with human activities and dwellings. The larvae of this species can tolerate extremely foul or polluted waters and flourishes in dairy wastewater lagoons. Adult mosquitoes infected with the encephalitis virus have been found in California. This species is considered a secondary source for the transmission of the St. Louis virus. (Michael Alburn, April 1999)

Improperly managed wastewater lagoons (e.g., floating vegetative masses, improper solid separation, ineffective vegetation management) are not only conductive to vector breeding but also make attractive nesting sites to many bird species. Grain and other feed that is readily available at animal confinement facilities attracts many species of birds, including: house sparrows (Passer domesticus), pigeons (Columba livia), scrub jays (Aphelocoma coerulescens), American goldfinches (Carduelis tristis), robins (Turdus migratorius), catbirds (Dumetella carolinensis), flickers (Colaptes auratur), mockingbirds (Mimus polyglottos), starlings (Sturnus vulgaris), Brewer blackbirds (Euphagus cyanocephalus), red wing blackbirds (Agelaius phoeniceus), and meadowlarks (Sturnella neglecta). Encephalitis virus exists primarily as an infection of birds, transmitted by mosquitoes. All the species listed are potential amplifying hosts. (Michael Alburn, April 1999)

Response to Comment 3: The commentor's statements are noted for the record. It is acknowledged that many existing dairy holding ponds in Tulare County are not well maintained and may, in fact, be hazardous to the environment. The purpose of CEQA, however, is to evaluate and disclose potential impacts associated with new development. It is not the purpose of the Program EIR to mitigate existing conditions. In the case of the proposed project, the adoption of the ACFP, policies are incorporated which will require all dairies in the county be brought into compliance and those facilities not currently under a Special Use Permit (grandfathered facilities) will be required to obtain one. Because some of the grandfathered facilities seeking use permit approval may be located within the area of the county not with an abatement district boundary, an additional mitigation measure should be added to read as follows:

Mitigation Measure #4.3.6-3: *Dairy and other animal confinement facilities which are not located within the service boundary of a mosquito abatement district shall comply with the following requirements for construction and management of wastewater facilities: Applies to Impact #4.3.6-2*

1. *The owner/operator shall be responsible for mosquito/vector control. If acceptable arrangements can be made, the owner/operator may contract with a nearby mosquito abatement district to satisfy this requirement.*

2. *The owner shall be responsible for keeping vegetative growth from all areas of the wastewater and solids separation ponds. This includes access lanes, interior pond embankments and any weed growth which might become established on pond surfaces.*

3. *Dairy wastewater discharge for irrigation purposes shall be managed so that it does not stand for more than dour days. Discharges which do stand for more than four days could cause severe mosquito emergence.*

4. *Floatage of any solid substance that could provide harborage for immature mosquito stages should be kept out of all wastewater holding ponds. Mechanical agitators may be very helpful in this regard.*

5. *No drainage lines shall by-pass the separator ponds except those which provide for normal corral run-off. All such drain inlets must be sufficiently grated to prevent solids accumulation in the holding ponds.*

6. *If new dairy wastewater holding and solids separator ponds are proposed, the following requirements shall also apply:*

    A. *All ponds shall be surrounding by lanes at least twenty feet in width and shall be kept clear for access.*

    B. *If fencing around the ponds is proposed, it shall be placed on the outside of the 2-foot lanes and gates provided for each access.*

C. *Two or more solids separator ponds are required. These ponds shall not be more than 60 feet wide.*

D. *Wastewater holding ponds shall not exceed 100 feet in width.*

E. *New wastewater lagoons shall be plumbed so that wastewater going into it can be diverted back to the solids separation pits in the event of a mechanical breakdown in the mechanical separator or in the event of a power outage.*

Effectiveness of Measure: *Implementation of the measures outlined above would reduce or avoid mosquito-borne health risks and reduce the amount of pesticides required to control mosquitoes and other vectors for facilities that are not located within the service boundary of a mosquito abatement district.*

Implementation/Monitoring: *This mitigation measure would be incorporated into the conditions of approval for grandfathered dairy and other animal confinement operations and would be established as standards through ordinance. Monitoring of conditions of approval is the responsibility of the Tulare County RMA.*

Response to Comment 4: The second paragraph on page 95 (Section 4.3.6) is revised to read as follows:

The expansion of mosquito abatement districts has also been instrumental in reducing mosquito-breeding sites. *It should be noted, however, that each specific abatement district has authority only within its boundaries.* There are four mosquito abatement district within the county: Delta Vector Control District, Tulare Mosquito Abatement District, Kings Mosquito Abatement District, and Delano Mosquito Abatement District. District boundaries are shown on Figure 4-22. As reflected in Figure 4-22, there ~~is a small area of the Project Area around Porterville that is not within an abatement district~~ *is an area in the eastern part of the Project Area, surrounding the City of Lindsay and extending south to Terra Bella, which is not with an abatement district service boundary. A comparison of Figure 4-22 and Figure 4-4 (Zoning Map) reveals that much of this area is either within an urban area, or is zoned AE, AE-10 or AE-20. New dairies are not permitted in urban areas or AE-10 zoned areas. Additionally Mitigation Measure #4.3.5-2 recommends that dairies and other animal confinement facilities not be permitted in the AE and AE-20. The only AE-40 zoned area not within a mosquito abatement district is located west of Lindsay. New dairy development would not, therefore, be permitted in most of the area not serviced by an abatement district*

Also refer to Response to Comment 3 above regarding existing dairies.

Response to Comment 5: The following condition is added to the second management guideline set forth in Mitigation Measure #4.3.6-2 as follows:

- Use of a solid separator (gravity or mechanical) to reduce floatage on the holding pond. *New wastewater lagoons shall be plumbed so that wastewater going into it can be diverted back to the solids separation pits in the event of a mechanical breakdown in the mechanical separator or in the event of a power outage.*

Response to Comment 6: The commentor's statements are noted for the record. The source of information for statements included within the draft PEIR is the Special Districts Inventory prepared by the Tulare County Local Agency Formation Commission. A review of the California Health and Safety Code, Article 4, Section 2270 indicates that the authority cited in the LAFCo document may be incorrect. The statements regarding district powers will be corrected in the final document to reflect Section 2270 of the Health and Safety Code. In summary, the district board has the authority, among other powers, to do the following:

(a) Take all necessary or proper steps for the control of mosquitoes, flies, or other vectors, either in the district or in territory not in the district but so situated with respect to the district that mosquitoes, flies, or other vectors may disperse from the territory into the district.
(b) Abate as nuisances all standing water and other breeding places for mosquitoes, flies, or other vectors, either in the district or in territory not in the district but so situated with respect to the district that mosquitoes, flies or other vectors from the territory disperse into the district.

Response to Comment 7: Refer to Letter 1 Response to Comment 2.

Response to Comment 8: Comment noted for the record. Conditions are incorporated into use permit approval are adopted for individual projects by Planning Commission Resolution or Zoning Administrative Decision based upon the record for the project, including the environmental assessment and consultation with affected agencies. This authority is not affected by the adoption of the ACFP or by certification of the PEIR. Additionally, the consultation process for individual applications which will not be affected by the proposed project.

Kings
Mosquito Abatement District

Letter 7

Post Office Box 907
Hanford, California
93232

Lue Casey
District Manager

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Assistant Manager

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Telephone (559) 584-3326
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kingsmad@thegrid.net

January 19, 2000

Tulare County Resource Management Agency
5961 South Mooney Boulevard
Visalia, CA 93277-9394

Dear Ms. Munn:

RE: Draft Program Environmental Impact Report

The Kings Mosquito Abatement District has reviewed the above referenced document; please consider the following comments.

On page 97 of the report, in the implementation/monitoring section of mitigation measure #4.3.6-1, it is stated the fly nuisance complaints will be handled by the responsible mosquito abatement district. It should be noted that the Kings Mosquito Abatement District is not responsible for the control or monitoring of any other vectors, except mosquitoes, within its jurisdiction. Therefore, our District will only be able to respond to those nuisance complaints associated with mosquito activity. The Kings Mosquito Abatement District will continue to monitor and take appropriate action at all sites identified as mosquito breeding sources.

Please call my office if you have any questions.

Sincerely,

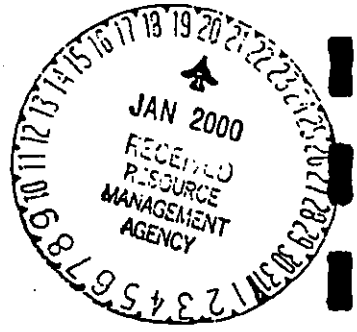
Gary Byde, Assistant Manager

Letter 7: Gary Byde, Kings Mosquito Abatement District

Response to Comment: Comment noted.

Tulare Mosquito Abatement District
District Headquarters: Mefford Field - Tulare
P.O. Box 1476 Tulare CA 93275-1476
PH (559) 686-6628 FAX (559) 686-2013

Letter 8



January 19, 1999

ATTN: JENNIFER MUNN
RESOURCE MANAGEMENT AGENCY
5961 SOUTH MOONEY BLVD
VISALIA, CA 93277

SUBJECT: "DRAFT" ANIMAL CONFINEMENT FACILITIES PLAN

Our District addressed concerns regarding mosquito control for Dairy / Bovine Animal Confinement Facilities in the "Notice of Preparation of a Draft Environmental Impact Report" to Janet Jiggarian on March 18,1999.

A review of your "Draft" Phase 1 - Dairy / Bovine Animal Confinement Facilities Plan thoroughly addresses these areas of concern. If construction and operational requirements as outlined are met our District will be able to accomplish inspection and treatment for mosquitoes as needed at these dairy facilities in our District.

Marshall Norgaard

Marshall Norgaard, Manager

RevDraft.AnCon.00

Letter 8: Marshall Norgaard, Tulare Mosquito Abatement District

Response to Comment: The comment is noted for the record.

Livingston Dairy Consulting, Inc.
99 North Tower Square - Tulare, CA 93274 - (559) 687-1440
Comprehensive Nutrient Management Plans • Business Strategy • Budget/Cashflow Preperation

FAX (559) 686-8154

November 12, 1999

Letter 9

County of Tulare
Resource Management Agency
5961 South Mooney Boulevard
Visalia, CA 93277

Attention: Jennifer Munn

RE: Comments on Draft Environmental Impact Report (EIR)
Submitted for the EIR Review Period

Please accept the following comments regarding the draft Environmental Impact Report for a proposed amendment to the Tulare County General Plan

I am Bruce R. Livingston, president of Livingston Dairy Consulting, Inc. My company develops business strategies for dairies, prepares Comprehensive Nutrient Management Plans for dairies, and assists dairymen and landowners in the preparation of applications for permits to expand existing dairies and/or build new facilities.

Tulare County has, in my experience, demonstrated an ongoing commitment to responsible land use planning, particularly with respect to appropriate regulation of dairy development. The Draft Animal Confinement Facilities Plan, Phase 1: Dairy/Bovine Animal Confinement Facilities restates many of those policies.

My comments are referenced to specific sections of the subject document as follows:

1. Reference: Environmental Impacts Checklist, Section D.1.a..

Present or planned land use of the area is production agriculture. Dairy

development is consistent with and indeed protects production agriculture by creating a very local market for a variety of feed crops. Many of these crops are not economically viable where the end user is more than a few miles away due to the relatively high moisture content of the product and the resulting cost of transportation.
Dairies also create a valuable fertilizer/soil amendment to adjacent production agriculture.
Rating should be 0, or at most a 1

Section 3.e.,g.,i..

These items should be rated no higher than a 1. In the case of e., and g., already mandated technical reports on soils and hydrology, grading and construction guidelines address each of the issues listed.
Item i., is adequately address in the Federal requirement that all Animal Confinement Operations prepare a Comprehensive Nutrient Management Plan for their facilities. These plans require and animal inventory, demonstration of facilities capable of containing 120 days of normal rain runoff and runoff created by a 25 year/24 hour storm, and net farm acreage sufficient to distribute to crops at appropriate rates for the crops grown and at the appropriate time in crop development.

Section 4.c.,

It has been demonstrated over the years, that dairies tend to keep existing farmed acreage in production longer, resisting development years beyond areas where there are no dairies. Also, dairies built in areas of marginal crop production provide the economic base for improvement of the marginal farm ground increasing productivity per acre. Economic return, or the lack thereof, is one of the most persuasive reasons to keep or develop farmland.
Rating should be 0.

Section 5.a.,c., d., f., g., h.,

a. Areas identified in the document as appropriate for dairy development are, for the most part, already under active cultivation. Any disturbance(s) to water absorption, etc., has already occurred. Surface runoff from developed areas are prohibited under existing NPDES regulation. Rating should be no higher than 1.

c., and d. Discharge into surface water is also prohibited under existing NPDES regulation. Rating should be no higher than 1.

f., and g., Studies have shown that dairies use approximately two-thirds the amount of water per acre that normal row-crop farming uses. The result is that any effect on ground water would be less than existing land use.

h., Ground water is already protected by implementation of EPA guidelines requiring Comprehensive Nutrient Management Planning and NPDES permitting.

Section 6. a., b., d.,

a., Guidelines to minimize dust during construction already exist. There are no standards regulating dust or other so called pollutants generated by normal dairy practices. The comparatively small amounts generated are dramatically less than those produced by urban and even suburban development.

b., and d., The simplest and most effective mitigation for these two concerns already exist in current policy. That mitigation is reasonable setbacks.

Section 7. All

Some, if not all, of the increased vehicle trips are offset by reduced truck traffic taking farm produce to market. The inadequacy of existing roads is due to lack of funding by local officials. Budget decisions are made as a matter of fiscal expediency, and I don't mean to question those decisions, however, road maintenance funding shortfalls are not the fault of dairies or dairy development. Dairies provide year-round jobs in an area plagued by seasonal employment and support local communities by making use of local suppliers and service businesses. Rating should be no higher than 1.

Section 8. All

Existing regulations require biological review for the possibility of presence of endangered or threatened species. Designation of areas which generally have no detected activity for dairy development is a simple and effective mitigation measure.

Section 10. All

Existing regulations controlling hazardous materials handling are sufficient to prevent or limit release of those products. Health hazards normally associated with dairies relate to mosquito or fly control. Regulations already exist to minimize potential problems.

Section 12.e.,

e., While the need for additional road maintenance may result from dairy development (see Section 7 above), there will also be significant added economic activity. The net result should be a significant gain for each of the nearby communities and the county as a whole.

Section 17. All

Since the questionnaire makes no distinction between negative and positive impacts, these three items should all be rated 3. Income distribution will be positively effected, employment should shift from seasonal to year-round and tax revenues will improve dramatically due to substantial investment in facilities, purchases from local businesses, and expansion of existing processing facillities.

E. Mandatory Findings

based on the review of the survey presented above, the answer should be NO to all of the questions in this questionnaire.

B. The determination that an Environmental Impact Report is required should be changed to reflect that existing policy provides sufficient protection to our environment.

Summary:

I have so much more to add to this commentary, but have run out of time. I don't like to argue points without references based on good science. My particular objection to the attempt to better regulate dairy development (which I support) is based on the fact that the various jurisdictions don't seem to be able to agree on such simple criteria as Animal Units and how they are calculated, how to determine nutrient (nitrogen and salt) distribution and plant uptake.

The questionnaire in Appendix H refers to several tables which are not included in that section. Why not include tables 1through 5 which I have attached? The tables come from the source document cited which is the only local jurisdiction, to my knowledge, to have gotten a dairy permitted through the CEQA process in the last 9 months.

Respectfully yours,

Livingston Dairy Consulting, Inc.

By: Bruce R Livingston

Bruce R. Livingston, President

TABLE 1
ANIMAL UNITS*

	Jerseys (lbs)	Guernseys (lbs)	Holsteins (lbs)
1 mature cow, bull or steer	1.00 (1,000)	1.2 (1,200)	1.4 (1,400)
1 dry cow	0.8 (800)	0.95 (950)	1.2 (1,200)
1 heifer (2 years & up)	0.73 (725)	0.88 (875)	1.1 (1,100)
1 heifer (1 - 2 years)	0.73 (725)	0.88 (875)	1.1 (1,100)
1 calf (3 months to 1 year)	0.35 (350)	0.40 (400)	0.50 (500)
1 calf (under 3 months)	0.10 (100)	0.12 (120)	0.13 (130)

*40 CFR 122, Appendix B

TABLE 2
DAILY NITROGEN EXCRETION

LIVE WEIGHT OF MILK COWS (AU equivalent)	Lbs Nitrogen/Day
1000 lbs (dry stock)	.45*
1000 lbs (milk cows)	.56**

*ASAE D384.1 Amer-Soc.Agric. Eng., St. Joseph Mich, 1988.
**UC Davis Cooperative Extension Service Recommendation

TABLE 3
NITROGEN RETENTION VALUE

Nitrogen Retention in Retention pond (held less than 30 days)	50% *
Nitrogen Retention in Retention pond (held over 30 days)	25%
Nitrogen in Dry Manure (average)	25% *

*Sutton et al, 1983.
Merced County Environmental Health

TABLE 4
NITROGEN EXCRETED ANNUALLY IN MANURE [c]

	kg N/1000 kg live weight	Typical live weight, kg
Dairy cattle[a]	164 (361 lbs)	640 (1,400 lbs)
Dairy cattle[b]	204 (449 lbs)	640 (1,400 lbs)
Beef[a]	124 (273 lbs)	360 (800 lbs)
Horse[a]	110 (242 lbs)	450 (1,000 lbs)
Layer[a]	307 (675 lbs)	1.8 (4 lbs)
Broiler[a]	402 (884 lbs)	0.9 (2 lbs)
Turkey[a]	226 (497 lbs)	6.8 (15 lbs)

a Manure production and characteristics. 1988. ASAE D384.1. Amer.Soc.Agric.Eng., St. Joseph Mich.
b Value for dairy cattle in California. Unpublished estimate provided by D. Morse and D. Bath, Dept. of Animal Science, University of California, Davis.
c Manure = feces and urine

TABLE 5
SALT OUTPUT AND LOADING*

___AU x .926 lbs salt per day x 365	=	lbs salt per year
___ Lbs salt per year ÷ Acres	=	lbs salt per acre/year

*ASAE 1992 standards D 384.1

The Central Valley Regional Water Quality Control Board recommends salt loading not exceed 3,000 lbs per acre per year based on double cropping and 2,000 lbs per year for single crops.

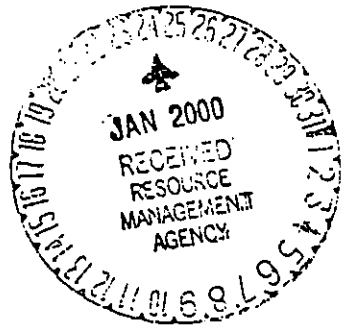
Letter 9: Bruce Livingston, Livingston Dairy Consulting, Inc.

The commentor's statements are noted for the record. However, the comments provided all refer to the Environmental Impacts Checklist, Section D.1.a with the closing statement that the determination that an Environmental Impact Report is required should be changed to reflect that existing policy provides sufficient protection to our environment.

For clarification, the Environmental Impacts Checklist, a component of a project's Initial Study, is utilized in early review of a project to determine what type of environmental document, e.g., Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report is required. (Reference CEQA Guidelines Section15063[d][3]) Based on the evidence presented during the preparation of the Initial Study and the Notice of Preparation process, a Program EIR has been prepared for the ACFP. This does not mean that EIRs (e.g., subsequent, supplemental or addendum as defined in CEQA) will automatically be required for subsequent animal facility projects, especially those that conform to the ACFP and whose impacts are found to be adequately covered by the PEIR, pursuant to the provisions of CEQA. See Appendix E for further information on the use of Program EIRs.

VALLEY MANAGEMENT SYSTEMS, Inc.
1719 N. 11th AVE. • P.O. Box 386 • HANFORD, CA 93232
(559) 584-0149 • FAX (559) 584-2168

Letter 10



January 24, 2000

Tulare County Resource Management Agency
Jennifer Munn
5961 South Mooney Blvd.
Visalia, CA 93277

Thank you for the opportunity to offer comments on the Tulare County Draft Environment Impact Report relating to General Plan Amendment No. GPA 99-05.

CHAPTER 3

Animal Unit

This document should reflect animal units based on 1000 pound animal. This is the unit of measure used by the National Resource Conservation Service, the Regional Water Quality Control Board, University of California, Dairy Consultants and Counties within our State.

An example of the total confusion created by not adopting a standard unit of measure is identified in this document. Mitigation measure No. 4.3.1-5 refers to Appendix H for the description of a CNPM. The CNPM recommended in Appendix H is based on data reflecting 1000 pound animal. This Appendix can not be used with the policies on animal units presented in this document.

We agree with the categories presented in Appendix H.

- Milk Cows
- Dry Cows
- Bred Heifers
- Heifers (1 year to breeding)
- Calves (3 months to 1 year)
- Baby Calves

Assumptions for establishing animal units are not consistent with the entities previously described. For example: percentage of nitrogen remaining after denitrification can vary from 20% to 70%. Double cropping on an average can consistently utilize 425 pounds per acre per year.

We could not find references to salt loading criteria. Salt loading should be addressed in this document. Based upon 1000 pound animal unit, loading should be calculated on 0.926 pounds per day per animal unit. This is consistent with American Society of Agricultural Engineer standards and data used by Merced County which the Regional Water Quality Control Board has used to establish loading criteria for nitrogen. Crop utilization should not exceed 3,000 pounds per acre per year for double cropping and 2,000 pounds for single cropping.

Very truly yours,

VALLEY MANAGEMENT SYSTEMS, INC.

Martin A. Levine, P.E.
President

Letter 10: Martin Levine, Valley Management Systems, Inc.

Refer to Letter 1 Response to Comments 1 and 8.

Letter 11

Sousa & Sousa Dairy

P.O. Box 669,
Tipton, CA 93272
559-752-4848
Fax 559-752-4368

January 24, 2000

Jennifer Munn
Tulare County Resource Management Agency
5961 South Mooney Boulevard
Visalia, CA 93277-9394

Re: Comments on Phase 1: Dairy/Bovine Animal Confinement Facilities

General Comments:

The review period of 45 days for this size and scope of document and study is unreasonable. This plan has potentially large economical effects on not only the dairy industry but also Tulare County and the state. The document requires more time for the industry to make a collaborative effort with other groups to find long term solutions to some difficult questions. This document took months to compile and is very lengthy. To expect thorough review in 45 days is unreasonable. The timetable should be reviewed and extended. 1

The Dairy industry in Tulare County has continued to grow and it is evident that there are many factors that make our county conducive to the needs of a dairyman. This growth has caused increasing criticism for environmental concerns and it is time that we address this issue with facts and scientific data not assumptions. This past year the industry has come together to implement the California Dairy Quality Assurance Program and through the Cooperative extension has been holding statewide classes in which 525 producers statewide have attended. This short course stewardship program certifies dairy operators in environmental issues and nutrient management plans. The goal is to have every dairyman complete a Comprehensive Nutrient Management Plan (CNMP). Tulare County should incorporate this statewide initiative into this policy because it involves many of the statewide agencies that will be a part of the monitoring system. 2

It is my opinion that Tulare County's permit process is working well at addressing environmental concerns and that the process does not need to be reinvented. I believe that some changes need to be made but some of the proposed items in this study are such that economically a dairyman can not afford to stay in business if he is expected to follow these new guidelines. There must be some balance.

Chapter 3- Policies and Standard Conditions

3.2 Compliance and Monitoring Policies: The county should work together with Regional Water Board and other environmental agencies in streamlining this process and making one report that fits the needs of all agencies.

(Continued Chapter 3 – Policies and Standard Conditions)

Grand fathered dairies may not economically be able to meet all the new "Dairy/Animal Confinement facilities Policies", they should be reviewed on a case-by-case basis and if they are not posing a threat to the environment and are taking all the steps possible to be in compliance they should not be shut down. 3

Chapter 4- Draft Program E.I.R.

Mitigation Measure 4.3.1-7 It has been proven that nitrates in the groundwater come from many other sources besides dairy waste. What will need to be included in this geo/hydro report and will this be based on speculation or facts and science? 4

Measure #4.3.1-8: The costs of this mitigation measure are unknown and more than likely not economically feasible. There is not enough scientific information available to make this a reasonable policy. What are the state and county well ordinances and how do they relate to dairies? Do farmers and other landowners have the same responsibility? This issue is site specific and may be included when scientific data proves that the nitrate levels in certain areas are high. To make every dairy follow this rule is unreasonable and costly. 5

Mitigation Measure 34.3.2-1: The dairy industry has contributed much to the local economy and although the increased traffic has had an impact on rural county roads it is completely unreasonable to make the dairy developer responsible for constructing all impacted local roads to an engineered standard. This is not acceptable by any means and would create much room for legal debate. There must be a more reasonable and logical way to implement a system where all those who share in the use of the road have a responsibility to maintain it. Many other businesses in Tulare also are solely supported by the dairy industry; what is their responsibility? As a dairy owner and someone who lives on a rural county road, I also see the problem being that of our county road maintenance program. The county is constantly filling potholes and repairing roads to standards that do not meet today's needs. In my opinion there must be a more economical and logical plan to make our roads meet the needs of our growing agricultural valley. 6

Sincerely,

Lori Cardoza

Lori Cardoza
Sousa & Sousa Dairy

Letter 11: Lori Cardoza, Sousa & Sousa Dairy

Response to Comment 1: The 45-day review period is consistent with the environmental review period for similar projects. (Reference Sections 15087 and 15105 of the State CEQA Guidelines) The proposed ACFP location and animal density policies were adopted as Interim Policies by the Tulare County Planning Commission on June 10, 1998 and the Board of Supervisors on June 30, 1998, and have been available for review since that time. Extension of the comment period would further delay the adoption of the AFCP which means that processing of the backlog of animal confinement operations would be further delayed.

Response to Comment 2: The commentor's statements are noted for the record.

Response to Comment 3: The commentor's statements are noted for the record. For clarification of policy requirements for grandfathered dairies, RMA staff has recommended a revision to Compliance and Monitoring Policy No. 3 by adding a provision which says that although all dairies are subject to the animal density loading requirements set forth in the ACFP, existing legal nonconforming dairies or other existing legal nonconforming animal confinement facilities that do not meet other ACFP policies will be considered on a case-by-case basis, subject to the Special Use Permit or equivalent permitting process.

Response to Comment 4: Refer to Letter 1 Response to Comment 6.

Response to Comment 5: Refer to Letter 1 Response to Comment 7.

Response to Comment 6: Sections 15126(e) and 15726.4 of the State CEQA Guidelines require that an EIR must describe measures that could minimize significant adverse impacts. The discussion must include measures that could reasonably be expected to reduce adverse impacts if required as conditions of approving the project. Mitigation measures that could minimize but not completely avoid significant effects may also be discussed. Several minor mitigation measures together could possibly make a substantial reduction in a significant effect. These statutes provide the basis for suggested mitigation measures that are included in the draft PEIR.

Under proposed Mitigation Measure #4.3.2-1, developers of dairies and other animal confinement facilities would be responsible for construction of road improvements if it is determined that existing roads are not adequately designed to handled projected traffic impacts. This requirement would not be any different than those required of other development projects when it is determined that traffic generated by the specific project warrants construction of road improvements. This determination would be made upon evaluation of site and project specific conditions in the same manner as determined for other types of development projects (e.g., preparation of a traffic study).

Because the "project" under consideration includes the adoption of general plan policies, it would be appropriate to include mitigation measures that would be considered policy

implementation measures. This is the nature of proposed Mitigation Measure #4.3.2-2 that recommends that the County study the possibility of establishing a traffic impact fee program to provide funding for construction and maintaining impacted minor roads. If the County were to adopt such a project after appropriate State-mandated studies have been completed, it would be adopted on a countywide or area specific basis in the manner provided by law. If established, impact fees would be applied to all types of development that would impact roads, not just dairy and other animal confinement facilities.

Prior to final action on the project, the Board of Supervisors will have responsibility to determine which mitigation measures are or may not be considered feasible to implement. This determination would be documented through the adoption of findings and overriding consideration as set forth in CEQA Guidelines Sections 15091 and 15093.

Center on Race, Poverty & the Environment
California Rural Legal Assistance Foundation

Letter 12

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Ephraim Camacho
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Caroline Farrell
Attorney (Delano)

Joe Morales
Community Organizer (Delano)

Esmeralda Martinez
Office Manager/Secretary (Delano)

January 20, 2000

Tulare County Resource Management Agency
Attn. Jennifer Munn
5961 South Mooney Blvd.
Visalia, CA 93277

RE: Comments on the Draft Program Environmental Impact Report for Phase I of the Dairy/Bovine Animal Confinement Facilities, Animal Confinement Facilities Plan

Dear Ms. Munn:

We file these comments on behalf of the Tulare County members of the Southern San Joaquin Environmental Justice Action Network. We offer these comments to a) provide the residents of Tulare County and Tulare County decision makers with more information on the environmental impacts of dairies than is provided in the Draft Program Environmental Impact Report ("DPEIR") and b) endeavor to ensure that mitigation measures and conditions attached to the Special Use Permits ("SUP") are effective and environmentally protective. While we support the preparation of a Program EIR to examine dairy development in Tulare County, the DPEIR, as prepared, is incomplete.

A Program EIR provides the opportunity to examine the cumulative environmental impacts of dairy development, program-wide mitigation measures, and program alternatives in more detail than the preparation of an individual Project EIR. However, in many sections, the DPEIR does not provide adequate information to review the environmental context of dairy development, nor does it provide sufficient information on various ways of mitigating the impacts outlined in the DPEIR.

The DPEIR should be rewritten to provide the missing information, which is detailed below. The rewritten DPEIR should then be re-circulated for additional public comment.

These comments are organized into two sections: first, general comments about the EIR as a whole, and second, specific comments on specific sections (or absence of sections) in the DPEIR.

GENERAL COMMENTS

A. The format of the DPEIR is not conducive to public review of whether or not the mitigation measures address the specific impacts described therein. All the impacts are discussed first followed by all the mitigation measures. This forces the reader to flip back and forth over several pages making it difficult to evaluate the sufficiency of the mitigation measure. 1

B. The DPEIR needs to state more clearly the scope of subsequent environmental review, especially in its relation with later SUPs. The DPEIR states that the "Supplemental Environmental Questionnaire" will be completed at the time a specific dairy project is proposed. However, the DPEIR does not indicate who will complete the questionnaire-government agencies or project proponents, and if it is project proponents, whether there will there be any agency review. Also, the DPEIR does not indicate whether subsequent environmental review, either in the form of a negative declaration or supplemental EIR, is expected. This information is crucial for the public to comment on the DPEIR in a meaningful way. If no subsequent environmental review is expected, apart from the questionnaire, then public comment would focus more on strengthening the mitigation measures proposed in the DPEIR. However, if subsequent environmental review documents will be prepared for specific sites, the public comments would be more. general dealing only with performance standards and program limits. Therefore, the DPEIR should be rewritten to include more information on the scope of subsequent environmental review and then re-circulated for public comment. 2

C. The DPEIR does not adequately discuss environmental impacts in sections # 4.3.3-2, 4.3.3-4, 4.3.4-1, 4.4.1, nor does it propose sufficient mitigation measures to eliminate those impacts and others not identified in the DPEIR, as noted in sections # 4.3.1-2, 4.3.1-7, 4.3.1-8, 4.3.3-1, 4.3.3-5, 4.3.3-6, 4.3.3-7, 4.3.6-1, 4.3.6-2. 3

D. Greater mitigation measures must be included. Goals or standards must be set out in the DPEIR to ensure that environmental impacts are minimized. Many of the mitigation measures offered are mere reiterations of the standards in the law. CEQA requires the County to go beyond ensuring compliance with existing regulations when there is still an impact from the project. *Laurel Heights Improvement Association of San Francisco v. Regents of the University of California* (1988) 47 Cal.3d 376, 411-412). This is especially true of the mitigation measures for Air Quality. Establishing goals and standards is a way to augment the reliance on the already existing regulations in the DPEIR and provides guidance for mitigating impacts in specific projects. 4

E. There is no discussion in the DPEIR of seismic activity in the County. This is particularly important since seismic activity could affect the dairy structures, the waste water ponds, and potentially the E-Clay or Corcoran Clay, all of which are cited in the DPEIR as ways of preventing potential water contamination in the County. 5

F. Given that this is a Program EIR, the cumulative impact analysis is inadequate. First, the section misstates the standard for analyzing cumulative impacts generally. Second, the cumulative impact analysis of air quality impacts is incomplete as detailed below. Finally, there is no discussion of potential cumulative impacts to water quality in the County. 6

G. We recommend adoption of the third alternative discussed in the alternatives section, "Adoption of ACFP with a Countywide Cap on the Number of Animals". This alternative will limit the impacts to air and water as well as providing an incentive for inefficient dairies to phase out of operation. 7

SPECIFIC COMMENTS

These comments are made using the section numbering system found in the DPEIR.

Water Quality

ACFP Policies The last sentence of the section, "Standard Conditions of Approval" states that "noncompliance with any condition is grounds for enforcement activities which could lead [to] revocation of the [SUPs]." This would be an effective mitigation measure if Tulare County regularly revoked SUPs. However, the DPEIR does not provide any information on the number of SUPs for dairies have been revoked in Tulare County. Without this information, it is impossible to determine the efficacy of this as an enforcement mechanism. 8

4.3.1-2. This measures states that wastewater holding ponds will be underlain by soils which contain 10% clay and not more than 10% gravel, or be lined with artificial materials of equivalent impermeability. However, the 10% clay, 10% gravel is recognized as a mere minimum standard and may not be adequate in this particular dairy program to prevent significant infiltration of process water. *See* the Borba Farms Dairy EIR, page 4.3-15 and the Chamberlain Ranch Dairy Development Project EIR, page 4.3-22. Rather, the requirements of the Geotechnical Design and Construction Guidelines are considered to be more comprehensive. However, because the Geotechnical Design and Construction Guidelines do allow for some seepage and to ensure adequate protection, we recommend that an impervious plastic liner, similar to those used in landfills, be required for all proposed dairies. 9

4.3.1-7. This mitigation measure states that a geo-hydro report will be prepared which documents the existing soil and groundwater conditions for each project site. This information will be used to establish a water quality baseline. In conjunction with this, the DPEIR should

establish standards or limits to prevent the degradation of the water supply. The DPEIR should indicate what should be included in the report and set a standard or threshold which a dairy must not exceed. Setting such standards or conditions is consistent with preparing a Program EIR because these goals and standards provide guidance in developing site specific measures for proposed dairies that fall within the general program.

4.3.1-8 This measure states that wells will be installed in accordance with State and County Well Ordinances. However, the 4/8/99 letter from Jan A. Krancher of Tulare County Health and Human Services specifically requires one well upstream from the site and two downstream from the site in order to ensure that nitrates and salts are not seeping into the groundwater. However, since the DPEIR does not include the text of the ordinance or a summary of its requirements, the mitigation measures' consistency with Ms. Krancher's recommendation cannot be evaluated. Thus, making it impossible to determine the sufficiency of this mitigation measure. Furthermore, mere reliance on ordinances and other such regulations is not necessarily sufficient under CEQA. *Laurel Heights*, 47 Cal.3d at 411-412.

Traffic

Impact # 4.3.2-1. This section only deals with increased traffic generated during operation of the dairy. Truck traffic during construction should also be evaluated. Furthermore, the 4/8/99 letter from Jan A. Krancher of Tulare County Health and Human Services commented on the need for increased solid waste disposal and recycling on the part of dairies. Trucks associated with these types of secondary impacts should be discussed. Such questions as: where will the waste go and how far will the waste have to travel should be addressed in this traffic impact section.

In addition, the DPEIR does not discuss cumulative traffic impacts. Given the number of dairies and the possibility of more dairies coming in the future, the cumulative truck trips of past, present and future dairies needs to be discussed. While the DPEIR does state that dairies and other animal confinement operations utilizing these roads are expected to degrade and ultimately destroy the roadway at an accelerated rate compared to historical traffic conditions, this is not an adequate discussion of cumulative impacts under CEQA because it does not list or summarize the current level of traffic on the types of roads discussed in the DPEIR.

Air Quality

4.3.3-1. This mitigation measure relies on compliance with San Joaquin Unified Air Pollution Control District ("SJVUAPCD") to ensure that particulate matter, PM10, emissions during construction are mitigated. The DPEIR should state what the SJVUAPCD regulations are so that the public is aware what minimum mitigation measures are required. However, CEQA is not just designed to ensure compliance with existing regulations. *Laurel Heights*, 47 Cal.3d at 411-412. In addition, given general exceedences of the PM10 threshold during dairy operations, more mitigation measures should be required during construction to offset such exceedences later.

Impact 4.3.3-2. This section deals with increases in exhaust emissions (ROG, NOx and CO) from operational equipment. It is unclear what is meant by the sentence "[b]ecause the amount of increased traffic associated with animal operations in rural areas is minimal compared to urban areas, the increase CO emissions would, in turn, be minimal." This does not make sense given that the DPEIR stated that CO is a localized pollutant. Therefore, the real comparison in terms of significance is whether there is a significant increase in a rural area after the dairies are established as compared to before establishment not rural v. urban. This section should be re-written to evaluate significance before and after dairies are established in rural areas. 15

Impact 4.3.3-4. This section addresses increases in methane emissions. Methane is widely regarded as a greenhouse gas which in turn contributes to global warming. Rising temperatures could lead to changes in regional wind systems resulting to the redistribution and frequency of floods, droughts and forest fires, windstorms and hurricanes. Climate change would create favorable conditions for growth of insect populations, resulting in the spread of malaria, asthma, encephalitis, dengue fever, and measles. Gina Rodriguez, *The Greenhouse Effect and Methane*, www.members.aol.com/profchm.

While the amount of methane produced is affected by several variables, the DPEIR states that different measures can be taken "to reduce, but not eliminate potential methane emissions." The EIR should outline what these methods are and explain their effectiveness. Such methods could include: biological waste supplements, chemical additives, permeable and impermeable covers, natural crust formed cover, composting, aerobic treatment systems, and anaerobic digester systems, none of which are discussed. Also, the DPEIR should reflect the degree to which bovine diet affects methane production and mitigate accordingly. The EIR should be rewritten to include such a discussion. 16

4.3.3-5. This measure states that fugitive dust emissions from dairy operations is a significant and unavoidable impact, but that mitigation can be incorporated into the SUP for an individual dairy. Specifically, what types of conditions? All that this measure says is that water or chemicals can be applied. It does not state frequency, nor does it state what types of chemicals can be used, and the consequent environmental affects of those chemicals. The DPEIR should specify what conditions could be incorporated into the permit. Furthermore, dairy operators should be required to buy emissions credits from other sources of PM10 that have banked emissions credits in order to offset these significant and unavoidable air emissions. 17

4.3.3-6 This measure deals with exposure of sensitive receptors to substantial pollutant concentrations. Sensitive receptors include schools and public parks. The mitigation measure proposed relies on ACFP Policy No. 4 which prohibits dairies from being sited 1,000 feet from schools or public parks. However, the set back from orchards and vineyards is larger, at least 1,320 feet.. This not to diminish the importance of protecting other agricultural uses and crops. However, the DPEIR does not indicate the reason why the set back from the school is not as large as for other land uses. The set back for schools should be no less protective than that for orchards and vineyards. A more detailed analysis of the assumptions behind these policies and set back requirements should be set out in the DPEIR. The DPEIR must show how ACFP Policy No. 4 is protective of schools. 18

4.3.3-7. This mitigation measure deals with the creation of objectionable odors affecting a substantial number of people. No specific mitigation measures are offered to address this impact. Rather, this section states that it relies on Policy No. 4 which suffers from the same problems as stated above in section 4.3.3.-6, and the proposal that specific conditions of approval can be incorporated into an individual SUP. However, since this is Program EIR either a discussion of what types of conditions will be included in the SUPs, or an outline of particular goals, or general standards would be appropriate to allow the public to assess and comment on the impacts and mitigation measures. 19

Biology

Impact 4.3.4-1. This section states that the loss and/or degradation of habitat will be a less than significant impact because conditions can be inserted into an individual project's SUPs. However, it is premature to determine that the impact to habitats will be less than significant because these conditions are to be based on a biological survey to be done on the proposed site. The DPEIR should include a list of factors that should be included in the survey, as well as, set limits which each specific project must not exceed. Until such a list is developed, it is impossible to conclude whether this impact could be mitigated. 2

Hazards

4.3.6-1. This mitigation measure outlines management guidelines for sanitation, water management, solid manure management and wastewater management. The guidelines use such terms as "regular removals" or "cleanups". Both the Delta Vector Control District and the Kings Mosquito Abatement District, in their letters of 4/9/99 and 3/15/99 respectively, detailed more specific requirements for vector and pest control. These requirements should have been included. In addition, the DPEIR must require each dairy operator to prepare a mosquito abatement plan and submit that to the responsible mosquito abatement district, and should require the responsible mosquito abatement district to conduct an annual inspection of the dairy facilities. 2

4.3.6-2. This mitigation measure deals with implementation of management guidelines for wastewater facilities and water use. These guidelines state that ponds and separation lagoons shall be constructed "with adequate surface width to allow wind action and to prevent floatage and mat formation." However, the area covered by the DPEIR is regulated by four different mosquito abatement districts, each with jurisdiction over a different portion of the County. Each of the four mosquito abatement districts has different surface width requirements. The DPEIR should specifically state its own requirement that complies with all the districts, or should clearly state that the ponds will conform to the responsible mosquito abatement district's requirements. 2

The monitoring of this mitigation measure is done through the Tulare County Resource Management Agency ("RMA"). To inform the public on the extent of the mosquito problem county wide, the DPEIR should indicate how many complaints about mosquito problems have been received by the county, where in the county most of these complaints originate from, and what types of remedial actions have been taken, including the use of chemical pesticides and the

environmental and health effects of those pesticides. Examination of these kinds of secondary effects is particularly appropriate in a Program EIR. CEQA Guidelines § 15168(d)(2).

Cumulative Impacts

One of the benefits of a Program EIR is that it provides an opportunity to examine more exhaustively cumulative environmental impacts. However, this section of the DPEIR is wholly lacking.

4.4.1 The DPEIR misquotes the CEQA guidelines on preparing an EIR in the first sentence of this section. Under the current guidelines "[a]n EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable." CEQA Guidelines § 15130(a). "Cumulatively considerable" "means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." CEQA Guidelines § 15065(c). This means that the impact from an individual project need not be significant to warrant a discussion of cumulative impacts. Rather, if the impact of the project, incidental as it may be, in combination with the effects of past, present and future projects is considerable, then a cumulative impact analysis is required. 23

Air Quality

As stated in the DPEIR, cumulative impacts must address past, present and future projects that impact the environment. This DPEIR discusses the number of dairies past, present, and estimates potential future dairy growth. It even estimates the current emissions of PM-10 and ROG for non-dairy and livestock facilities. However, it does not quantify dairy emissions in the County because the air district has not developed an inventory for these emissions. However, CEQA is not limited by the requirements of regulatory agencies. *Laurel Heights,* 47 Cal.3d at 411-412. It requires that if there is a significant impact it be documented and mitigated if feasible. A statement that cumulative emissions will be significant and unavoidable, while true, is not enough. There should be some attempt to quantify "significance" to determine the degree of significance the impact will have in order to ensure that the public and county decision-makers are fully informed. 24

Water Quality

There is no discussion of the cumulative impacts to water quality in the DPEIR. Under the standard stated above, whether or not the individual project has a significant impact, if it has an incremental affect in combination with other closely related projects in the area, that impact is cumulatively considerable. Thus, requiring the a cumulative impact analysis.

The DPEIR gives no information on:

- the state of water quality in the area,
- dairy discharges in the county currently
- violations of regional water quality board requirements in the County currently

25

The DPEIR merely illustrates in Figures 4-12 and 4-13 soil permeability in the County (much of

which is moderately permeable) and soil leaching capability in the County (much of which is either high or moderately permeable.) Yet there is no attempt to deal with cumulative water impacts from the high numbers of dairies with SUPs or from those now requesting SUPs. There are no figures in the DPEIR providing a water quality baseline or indicating the water quality in the County to date. This type of analysis is particularly important in a Program EIR where cumulative impacts can be dealt with in more depth than in a specific Project EIR.

Alternatives Analysis

Three project alternatives are analyzed in the alternatives section. The "no project" alternative; adoption of ACFP w/1 mile radius restriction; and adoption of ACFP with a countywide cap on the number of animals. We encourage adoption the third alternative, a ACFP with a countywide cap on the number animals. This alternative achieves the project objective, plus allows for limit on the number of cows, thus also limiting the quantity of air emissions, and potential for water contamination. 2

Conclusion

The DPEIR is incomplete. First, a number of potential impacts were not discussed. Second, several of the mitigation measures are inadequate since they do not mitigate the impacts identified, nor do they provide the public and decision-makers with sufficient information. Lastly, the cumulative impact analysis lacks information on air quality impacts and wholly omits any discussion of water quality impacts. Therefore, the DPEIR should be rewritten to provide the missing information and then re-circulated for further public comment. 2

Sincerely,

Caroline Farrell

Caroline Farrell
Attorney at Law

Letter 12: Caroline Farrell, Center on Race, Poverty & the Environment, California Rural Legal Assistance Foundation

Response to Comment 1: The commentor's statements are noted for the record. Article 9 of the State CEQA Guidelines (Sections 15120 et sec.) establishes the required contents of EIRs. As noted in Section 15120(a), "Environmental Impact Reports shall contain the information outlined in this article, but the format of the document may be varied."

Response to Comment 2: As noted in the Preface to the draft EIR on page 34, the draft EIR was prepared as a "Program EIR", with the discussion of impacts and suggested mitigated measures "generalized" to address issues typically associated with the development and operation of dairies and other bovine animal confinement facilities. This approach was taken because the current project at hand involves the adoption and implementation of policies and standards for these types of facilities, which will be incorporated into the County's General Plan. There is no reference anywhere in the document that subsequent environmental review would not be required nor that the definition of a "Program EIR" as established in Section 15168 of the State CEQA Guidelines would not be utilized. In fact, on page 42 (Section 4.1.2) it is noted that an excerpt from the CEQA Guidelines regarding Program EIRs is provided in Appendix E.

As stated Section 15168(d), one of the ways a program EIR can be used to simplify the task of preparing environmental documents on later elements of the program is by providing the basis in an Initial Study, which would be prepared by RMA staff, for determining whether the later activity may have significant effects. The idea of utilizing a Supplemental Questionnaire as proposed would streamline the subject review process by providing a background discussion of potential impacts and outlining the mitigation measures which have been determined to be feasible, based on the PEIR. Because Tulare County has discretionary approval over special use permits, the County is, in turn, designated as the Lead Agency for CEQA compliance. The responsibility for processing use permits along with preparing corresponding environmental documents lies with the Tulare County Resource Management Agency (RMA). The County's Environmental Assessment Officer has the responsibility of approving environmental documents for public review and comment. An opportunity for public review and comment on all environmental documents prepared for activities covered by the ACFP/PEIR will be provided as required by the CEQA Guidelines (Sections 15072 and 15087).

Section 15088.5 of the State CEQA Guidelines provides an outline of the circumstances under which an EIR would need to be re-circulated which does not include the reasons given by the commentor.

Response to Comment 3: This comment is too general to respond. However, it should be noted that if environmental impacts are not identified as being significant, no mitigation is required.

Response to Comment 4: CEQA Guidelines Section 15040 outlines the authority granted to public agencies by CEQA. CEQA is intended to be used in conjunction with

discretionary powers granted to public agencies by other laws, not grant new powers not otherwise authorized. This section does, however, establish that CEQA does authorize an agency to utilize its discretionary powers to mitigate or avoid significant effects on the environment when it is feasible to do so with respect to projects subject to the powers of the agency as provided in other laws. CEQA is just like any other law in that its general provisions may be subject to specific limitations provided in other law.

The Environmental Protection Agency (EPA) is responsible for implementing federal standards for ambient air quality while the California Air Resources Board (ARB) is responsible for coordination and oversight of State and local air pollution control programs. Individual air districts have the primary responsibility for control of air pollution from all sources other than emissions directly from motor vehicles, which are the responsibility of the ARB and the EPA. Primary jurisdiction over air quality matters in the San Joaquin Valley Air Basin lies with the San Joaquin Valley Unified Air Pollution Control District, not Tulare County. However, the County can utilize its "police powers" to establish air quality rules and policies that do not conflict with the requirements of the SJVUAPCD. The proposed separation standards (i.e., community windsheds) fall within this category.

Response to Comment 5: Seismic activity was not discussed in the draft PEIR because, as noted in the Initial Study/Environmental Checklist included with the Notice of Preparation (included as Appendix F), it was determined to not be a significant impact. No substantial evidence to the contrary has been presented. According to the County's Seismic Safety Element, the areas of the county proposed for animal confinement development are located within Seismic Microzones VI and V2 which are areas of minimal risk. Any potential hazards associated with this level of activity would be enforced through the Uniform Building Code. In addition, the Seismic Safety Element does not identify any potential effects on waste water improvements or the E-clay layer in seismic microzones V1 and V2.

Response to Comment 6: The first paragraph of Section 4.4.1 is revised to read as follows:

Section 15130(a) of the State CEQA Guidelines states that "an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively significant. *Where an lead agency is examining a project with an incremental effect that is not 'cumulatively considerable', a lead agency need not consider that effect significant." Section 15130(a)(1) further states* "As defined in Section 15355, *a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR."* ~~"cumulative impacts" refers to two or more individual effects which, when considered together, are considerable of which compound or increase other environmental impacts". It may be determined that a project's contribution to a significant cumulative impact will be lessened or avoided through mitigation measures or alternatives discussed in the EIR and if so, need not be discussed in further detail.~~

Potential cumulative impacts to water quality in the county were not discussed because as concluded under the discussion of Impacts #4.3.1-1 and #4.3.1-2, degradation of groundwater and surface water are determined to be less than significant with mitigation. The salt and nitrate loading criteria included in ACFP Policy #2, which is based on scientific data currently available, provides a conservative approach to nutrient and salt loading calculations. Based on the factors provided (e.g., cropping patterns, dairy management practices) the amount of nitrates and other minerals applied to the land would not be so excessive that groundwater contamination/degradation would result. With the adoption of the ACFP, all dairies in the county would be required to comply with the soil loading criteria of Policy #2, regardless of the facilitity's use permit or grandfathered status. This provides a safeguard for protecting groundwater resources not currently in place.

Refer to Response to Comment 17 for response to air quality comments.

Response to Comment 7: The commentor's support for Alternative 4.5.3 is noted.

Response to Comment 8: The discussion provided in the second paragraph on page 51 which outlines standard conditions of approval and the potential for revocation of use permits for noncompliance of conditions is provided to reflect the County's authority under the Zoning Ordinance. Threat of revocation is an important tool that allows the County's code enforcement team to assure compliance with permit conditions. However, revocation of a use permit is not recommended as a mitigation measure.

Response to Comment 9: If mitigation measures more comprehensive that those set forth in the PEIR, such as liners, are determined to be necessary to avoid potential impacts, such requirements would be established on a site specific basis. Such requirements would be based on subsequent environmental review and in particular, the geo-hydro report required in Mitigation Measure #4.3.1-7 as revised (see Response to Letter 1, Comment 6). This would be accomplished in compliance with CEQA with the Program EIR concept as defined in Section 15168.

Response to Comment 10: Refer to Letter 1 Comment 6.

Response to Comment 11: Refer to Letter 1 Comment 7. Additionally, the results of the geo-hydro report would provide the basis for the number of and locations of monitoring wells based on site specific evaluation. This approach is supported by the Central Valley Regional Water Quality Control Board. (Lonnie Wass, February 2000) The commentor did not explain how the Laurel Heights decision would apply to this approach.

Response to Comment 12: Traffic generated during construction activities is considered temporary or short-term. The number of trips generated would reflect a diminimus increase in traffic.

Disposal of dairy waste is not permitted in county land fills. Solid waste (trash) pick-up/disposal for in the rural unincorporated area of the Project Area is the responsibility of the property owner. There are eight licensed haulers in the county that the property owners may contract with for pick-up, or they may haul waste themselves. Typically these haulers will provide pick-up one to two times per week. There are three dumpsites currently operating within the county: Visalia (Avenue 328 and Road 80), Woodville (Avenue 200 and Road 152), and Teapot Dome (Avenue 128 and Road 208). Disposal, whether by a contract hauler or by the property owner would occur at one of these three sites.

As noted in Letter 4, Response to Comment 5, an inventory of dairy manure use and exportation will be developed utilizing information provided in Annual Compliance Reports. Additionally, preliminary information submitted with individual applications will include estimates of truck traffic associated with the hauling of manure off-site. The traffic impacts of such trips, as well as those discussed above, will be included in the traffic study that is implicit in Mitigation Measures #4.3.2-1 for each project.

Response to Comment 13: Traffic impacts were not determined to be cumulatively significant as discussed in Section 4.3.2 of the draft PEIR. The net increase in the number of trips generated by dairies is considered to be minimal. Accelerated deterioration of roads that are not constructed to engineered standards could be significant, however, several mitigation measures were discussed in the draft PEIR that would reduce these impacts to a less than significant level. Refer to Response to Comment 6.

In response to the commentor's statement regarding the current level of traffic on the types of roads discussed in the draft PEIR, the County's Pavement Management System does provide estimates of traffic volumes. Actual traffic counts are not available for every farm-to-market road in the county, however, a range of estimated average daily trips (ADTs) is utilized to prioritize road maintenance priorities. The County's Pavement Management System is too lengthly to include in the PEIR but is available for review at the offices of the Tulare County Resource Management Agency.

Also refer to Response to Comment 13 above.

Response to Comment 14: The SJVUAPCD regulations were included in the draft PEIR as Appendix K. Also refer to Response to Comment 4 above. Again, the application of the Laurel Heights decision to this issue was not explained by the commentor.

Response to Comment 15: High levels of CO or "hotspots" can occur only as a result of heavy traffic volumes and congestion. An increase in CO concentrations is, therefore, more likely to occur in an urban setting where roadways and, in particular signalized intersections, are congested with heavy traffic volumes. The change or net increase in vehicle traffic associated with dairy and other animal confinement facilities is diminimus when compared to traffic associated with agricultural production activities. Thus, the

source of CO emissions from proposed animal operations would be comparable to those of non-animal agricultural operations that would constitute the source of existing emissions in rural areas. In can be argued that the amount of traffic generated by dairies somewhat offsets traffic generated from crop production activities because harvested crops (particularly alfalfa and silage) will be used on-site and not hauled off-site, reducing the number of trips representative of existing emissions To clarify these assumptions, the discussion under Impact #4.3.3-2 is revised to read as follows:

Discussion/Conclusion: Use of equipment, e.g., tractors, feed trucks, pumps, typically associated with dairy or other animal confinement operations will result in an increase in exhaust emissions (ROG, NO_x, CO). Because most of the equipment used is diesel-fueled, control measures applicable to the reduction of construction activities can be utilized to reduce impacts associated with ROG and NO_x emissions. The main source of CO emissions would be from on-road motor vehicles. *High levels of CO are more likely to occur in urban areas as a result of heavy traffic volumes and congestion.* Because the amount of increased traffic associated with animal operations in rural areas is minimal, ~~compared to urban areas,~~ the increase in CO emissions would, in turn, be minimal. The increase in exhaust emissions from operational equipment is considered to be "**less than significant with mitigation measures**".

Response to Comment 16: The commentor suggests other methods to reduce methane emissions such as: biological waste supplements, chemical additives, permeable and impermeable covers, natural crust formed covers, composting, aerobic treatment systems and anaerobic digester systems should be outlined in the PEIR. Some of these methods were described and/or discussed in the AFCP or PEIR (Aerobic and anaerobic treatment systems and composting are discussed in Section 2.2.1). It is noted that covering the lagoons for methane capture (biomas generation) is a possibility but it not a method generally used because the cost and labor involved. . There are also dietary supplements and/or additives that are in experimental stages only. (Tom Shultz, February 2000). Natural crust formed covers would provide an environment conducive to the breeding of mosquitos. The methods suggested may reduce one impact while increasing the potential for others.

It is also noted for the record that the EPA has developed a voluntary Ruminant Livestock Efficiency Program that suggests management practices to improve livestock operations. As outlined in this Program, controlling disease and improving herd health through preventative measures can, among other things, reduce the amount of methane released during the digestive process of ruminant animals. The following discussion is added to Section 4.3.3 beginning after the fifth paragraph on page 69:

Cattle that are efficiently productive generate less methane. The EPA has developed a voluntary Ruminant Livestock Efficiency Program that suggests management practices to improve livestock operations. These practices apply to both dairy and beef cattle. Techniques recommended under the program include improved grazing management, genetic improvements in breeding, strategic supplementation of diet, use of

production-enhancing agents, and better disease control and herd health. Management practices addressing each of these areas are summarized below:

- *A controlled grazing system can result in greater production of higher quality forage than with traditional grazing practices Controlled grazing requires a pasture to be subdivided into individual grazing units or paddocks that are alternately grazed and rested throughout the grazing season. The paddocks are grazed to keep plants in a "vegetative" stage (the stage just before seed production). This approach is easier to maintain an effective balance between forage demand and supply, resulting in improved harvest efficiencies.*

- *Controlling disease and improving herd health results in animals that are more efficient. Producers can control diseases and maintain herd health by the appropriate use of antibiotics, vaccines (given at appropriate times as a disease prevention measure) and other health maintenance products (e.g., dewormers). Health problems should be recognized quickly and sick animals should be isolated and treated to prevent the problem from spreading throughout the herd.*

- *Better nutrition through strategic supplementation of diets reduces methane emissions by enhancing weight gain, milk production and reproductive performance. Mineral and protein supplements should be used to correct deficiencies in the diet of both fed and grazing animals to make improvements in animal performance. When animals receive low-protein diets or graze on poor-quality pastures, supplements should be used. Examples of supplements include industry by-products such as molasses, sugar beet pulp, grape pomace, brewery waste, and distillers grains.*

- *Certain chemical agents can act directly to improve productivity in livestock and, as a result, reduce methane emissions. A number of pharmaceutical products have been developed to enhance beef and/or milk production (e.g., artificially-produced hormone bST to increase milk production in dairy cows, and anabolic steroids to improve productivity in beef cattle).*

- *Improved genetics can increase livestock productivity by enhancing desirable characteristics in herds. Genetic traits can be bred into animals that allow them to convert grains and roughage into meat, milk and other products more efficiently. Improved genetics combined with good management can increase reproductive efficiency of brood bows, resulting in higher birth rates and calf weaning weights and shorter intervals between calvings.*

Outlining these methods does not change the conclusions made in the draft PEIR. If at such time any of the methods currently in experimental stages are determined to in fact reduce associated impacts, these methods will be evaluated for inclusion in the County's policies and standards.

Response to Comment 17: It is assumed that the commentor's statements refer to the discussion of Impact #4.3.3-5 although the reference is to a "measure". The impact discussed, an increase in fugitive dust emissions, is considered to be a significant unavoidable impact based on the Impact Evaluation Criteria. Specifically, a project may have a significant effect if it would violate any air quality standard or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as non-attainment. The San Joaquin Valley is classified as non-attainment for PM10 so any increase could be considered significant. Although the increase of PM10 emissions resulting from a single dairy operation may be considered diminimus, the increase associated with the number of dairies conceivably permitted by the AFCP would be cumulatively significant.

As noted in the discussion of this impact, typical sources of fugitive dust emissions from dairy operations include the movement of cattle in unpaved corrals and windy conditions. It is further stated that the use of free-stall designed facilities would reduce the amount of dust generated. This is one method of reducing fugitive dust. As noted on page 14 of the ACFP, most newer dairies in the county are free stall design by choice. Although watering of the corrals can also reduce dust, it should be noted that excessive watering can lead to mosquito breeding.

Implementation of dust control measures is noted under Mitigation Measure #4.3.3-1. (Also reference Response to Comment 14 above.) A reference shall be added under this mitigation measure that indicates the mitigation measure also applies to Impact #4.3.3-5.

As noted in the draft PEIR, dairies and other animal confinement operations are exempt from SJVUAPCD Rules & Regulations and are not required to obtain a permit to construct or a permit to operate. Additionally, these uses are not considered a stationary source and would not be eligible to buy emission credits from other sources as suggested by the commentor.

Response to Comment 18: RMA staff has recommended a change in Animal Density and Locational Policy No. 4 to increase the minimum distance between school grounds and new animal confinement facilities from a minimum of 1,000' to a minimum of 2,640 feet (1/2 mile). This would make the windshed distance for schools consistent with the separations required between nonagricultural uses (which includes schools) and inharmonious uses (which include dairies, feedlots, and concentrated animal raising operations) used in evaluations under the Rural Valley Lands Plan of the Tulare County General Plan.

Response to Comment 19: The discussion under 4.3.3-7 refers to an **Impact** (Creation of objectionable odors affecting a substantial number of people), not a **mitigation measure** as noted by the commentor. No specific mitigation measures are offer because the impact was considered to be "less than significant". Implementation of community windsheds and micro-windsheds as outlined in ACFP policies address appropriate separations between new facilities and communities, residential concentrations, and individual off-site residences. These windsheds have been utilized by the County for the

last 25 years to avoid potential conflicts between dairies and residential uses, including odor nuisances.

Standard conditions of approval typical of special use permits for dairies were included under Section 3.3 of the document. Applicable conditions would pertain to operational and management practices/activities. Additionally, special use permits are discretionary actions that are subject to the public review process as required by law. Any use permit application, along with its supporting environmental documentation, would be subject to public review and comment.

Also refer to Response to Comment 18 above.

Response to Comment 20: As noted in Section 4.3.3 of the draft PEIR, a Preliminary Draft Habitat Conservation Plan (HCP) was prepared for Tulare County in 1996. The Project Area affected by the ACFP is part of the area surveyed for targeted species. The results of the surveys were summarize in this section of the draft PEIR, and provide the basis for requiring subsequent biological surveys. To clarify what would be required as part of these surveys, Mitigation Measure #4.3.4-1 is revised to read as follows:

Mitigation Measure #4.3.4-1: Prior to approval of a development project, biological surveys, conducted by qualified biological specialists, shall be required for properties that: contain pasture or rangeland; have waterways traversing *or adjacent to* the property; are located with a one mile radius of an established refuge/preserve/reserve, or native/naturalized areas. *The surveys shall be conducted in compliance with U.S. Fish and Wildlife Service and the California Department of Fish and Game Survey Guidelines (Refer to Appendix S of this document for these Guidelines.)* Based on the results of the survey, the biologist shall recommend measures to avoid or minimize impacts on identified biological resources. *These measures may include, but are not limited to, setting aside habitat on-site or providing protection of habitat in another location; locating project features at least 100 feet away from stream banks, lakes and riparian habitat; providing appropriate buffers to protect any watershed into vernal pools and other wetlands; and designing dairy projects in flood prone areas so that sensitive resources on and off the site will not be inundated with dairy waste or wastewater during flood events.* Applies to Impacts #4.3.4-1, #4.3.4-2, #4.3.4-3 and #4.3.4-4.

Response to Comment 21: Refer to Letter 6 Response to Comments 3 and 4. Also, the requirements for construction and management of wastewater facilities for the individual abatement districts was included in Appendix M of the draft PEIR. These requirements are implemented through Standard Condition of Approval No. 29. Addressing the district's requirements in this manner provides for flexibility for each district to establish and amend their own guidelines as appropriate without having to amend the County's PEIR each time.

No justification is given for the commentor's statement that the draft PEIR must require each dairy operator to prepare a mosquito abatement plan and submit that the responsible mosquito abatement district. Further, the County does not have the authority to require

the districts to conduct an annual inspection of each dairy facility. The requirements/regulations of the mosquito abatement districts have already been incorporated into standard conditions of approval or are addressed in Mitigation Measures #4.3.6-1 and #4.3.6-2. Inspections are considered routine for mosquito abatement districts.

Response to Comment 22: Refer to Comment 21 above. As stated in the Implementation/Monitoring discussion for Mitigation Measure #4.3.6-2, the measure would be incorporated into the conditions of approval for individual facilities. Monitoring of conditions of approval is the responsibility of the RMA; nuisance and/or abatement is handled by the responsible abatement district.

A review of violations received by RMA for the past 2 years revealed that no complaints regarding mosquito problems have been received. The basis for all complaints received dealt with the expansion of facilities without a use permit or non-compliance with conditions of approval regarding district standards. In the latter case, this typically related to the lack of access for abatement/maintenance, or construction of wastewater lagoons which did not meet district standards. All violations involving compliance with conditions of approval have been resolved.

Response to Comment 23: Refer to Response to Comment 6 above.

Response to Comment 24: Refer to Response to Comments 14, 15, 16, 17, 18 and 19 above.

Response to Comment 25: Refer to Response to Comment 6. Baseline information on the state of water quality in those portions of the county where animal confinement projects under the plan are likely is not available. Regular groundwater monitoring is currently only required for public water systems. Some of the cities in the county (e.g., Visalia, Tulare) have conducted studies to evaluate groundwater in the immediate area of their sewage treatment plants. In the case of the Visalia study, groundwater testing did reveal high concentrations of nitrate below some, but not all of the older dairies in the area (mainly below the corrals and/or sumps). The extent of the contamination was localized and would not provide an adequate overview of the status of the groundwater in the county. With the adoption of the ACFP, information will be collected to provide an appropriate baseline and to provide early detection of potential contamination before its spreads to potable groundwater.

A review of RMA's code enforcement records indicated that violations of RWQCD requirements typically involved standing water. Based on information from the CVRWQCB, only two or three monitoring wells have been required in Tulare County when determined necessary based on individual Reports of Waste Discharge.

Response to Comment 26: The commentor's recommendation regarding the alternatives is noted for the record.

Response to Comment 27: The commentor's opinion is noted for the record. The additions or revisions to the draft PEIR proposed pursuant to the responses to comments are done so to provide clarification or amplification and are not considered to be substantially new information. Although some mitigation measures were revised based on information received during the review process, the revisions did not constitute a considerable change from the measures originally reviewed. New significant environmental impacts were not identified, nor has a substantial increase in the severity of an environmental impact been identified. Additionally, there is no substantial evidence in the record that the draft PEIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

Based on the public review and comment process, evaluation of potential impacts and the determination of significance has not changed. Therefore, re-circulation of the EIR is not required as set forth in Section 15088.5 of the CEQA Guidelines.

SUMMARY OF COMMENTS RECEIVED AT THE PLANNING COMMISSION HEARING OF JANUARY 26, 2000

(Prepared by Janet Jiggerian, Environmental Consultant, and Jennifer Munn, Planning Staff)

The following summarizes testimony received at the first public hearing on GPA No. 99-05 (Animal Confinement Facilities Plan). As set forth in Section 15088 of the State CEQA Guidelines, "The Lead Agency shall evaluate comments on environmental issues received from persons who reviewed the draft EIR and shall prepare a written response." To this end, a response is provided to comments specifically addressing environmental issues or the adequacy of the DEIR (preceded by "Env. Response"). In addition, a response is provided to general comments regarding the Animal Confinement Facilities Plan and/or the process of adopting dairy policies (preceded by "Staff Response").

John Fleming, Western United Dairymen:

- Indicated that he would be submitting written comments by the February 23 Planning Commission hearing.
- Indicated support for utilizing a 1,000 lb. animal unit rather than a 1,400 lb. animal unit for calculating the maximum number of animals, but is pleased with the proposed conversion table idea.
- Intends to further review Appendix Q of the DPEIR but feels its use is a step in the right direction.
- Expressed concern over traffic issues, stating that the proposed Mitigation Measures will be burdensome for the dairy operators.
- Indicated support for the AAC position that monitoring wells proposed under Mitigation Measure #4.3.1-8 are not necessary in every area to monitor nitrate and salt levels and that any monitoring should be handled by monitoring of existing wells.

Env. Response: Appendix Q consists of a proposed draft of a Supplemental Environmental Questionnaire. It is intended that a Supplemental Questionnaire be utilized in reviewing individual applications for dairies and other bovine animal confinement facilities to determine if the potential environmental impacts of each project are adequately identified in the Program EIR. Utilizing site and project specific information, a determination on the level of significance of potential environmental impacts will be made and the mitigation measures outlined in the PEIR will be required as appropriate. The draft Questionnaire is provided as informational only. It is the responsibility of the Tulare County Environmental Assessment Officer to determine the contents of the questionnaire. The Lead Agency (Tulare County Resource Management Agency) has the responsibility of completing the questionnaire as part of the application review process.

As set forth in Section 15126(c) of the State CEQA Guidelines, an EIR must describe measures that could minimize significant adverse impacts. The discussion must include measures that could reasonably be expected to reduce adverse impacts if required as conditions of approving the project. Mitigation measures that could minimize but not completely avoid significant

effects may also be discussed. Several minor mitigation measures together could possibly make a substantial reduction in a significant effect. These statutes provide the basis for suggested mitigation measures that are included in the Draft PEIR.

Under proposed Mitigation Measure #4.3.2-1, developers of dairies and other animal confinement facilities would be responsible for construction of road improvements if it is determined that existing roads are not adequately designed to handle projected traffic impacts. This requirement would not be any different than those for other development projects when it is determined that traffic generated by the specific project warrants construction of road improvements. This determination would be made upon evaluation of site and project specific conditions in the same manner as determined for other types of development projects.

Because the "project" under consideration includes the adoption of general plan policies, it would be appropriate to include mitigation measures that would be considered policy implementation measures. This is the nature of proposed Mitigation Measure #4.3.2-2 that recommends that the County study the possibility of establishing a traffic impact fee program to provide funding for constructing and maintaining impacted minor roads. If the County were to adopt such a program after appropriate and State-mandated studies have been completed, it would be adopted on a countywide or area specific basis in the manner provided by law. If established, impact fees would be applied to all types of development, not just dairy and other animal confinement facilities.

Jim Sullins, County Director, UCCE:

- Stated that both he and Tom Shultz, Tulare County Dairy Advisor, are available to provide scientific data.
- Expressed his concern over the flexibility of proposed mitigation measures.
- Stated that the General Plan has to be flexible to provide for changes in technology and in the industry itself.

Env. Response: The discussion of environmental impacts and proposed mitigation measures included in the Draft PEIR is based on information available at the time of preparation. If at any time new information of substantial importance becomes available after an EIR has been certified as complete, subsequent environmental documentation should be undertaken (reference Section 15162 of the State CEQA Guidelines). New information would include mitigation measures or alternatives previously found not to be feasible but would now in fact be feasible and/or mitigation measures or alternatives that are difference from those analyzed in the previous EIR based on changes in technology.

Staff Response: Since the Animal Confinement Facility Plan (ACFP) will be part of the County's General Plan, it can be amended (after environmental review and public hearings) to reflect new science and technology. In addition, Staff is recommending that an additional policy be included in the ACFP to provide flexibility for project proposals that don't quite fit the Plan's density policies but are considered within the overall objectives of the Plan (i.e., they comply with or even exceed compliance with the other policies). Such changes could be

approved on a case-by-case basis provided that more detailed environmental review (possibly through an individual/focused EIR) demonstrates that the changes will clearly have no significant environmental effects.

Eileen R. Demerath, Dairy owner/operator (Harmony Farms):

- Indicated agreement with streamlining the application process.
- Indicated that they have a dairy expansion application pending with the County RMA, and questioned whether, as an existing facility, they would be subject to the new policies.
- A written statement was submitted by Harmony Farms that outlines the length of time for processing their expansion application.

Staff Response: Any expansion application will be subject to the new animal density policies (but not to the locational policies). This is covered in Policy No. 7 which reads as follows: "Expansions of existing legal nonconforming dairies or other existing legal nonconforming animal confinement facilities that do not meet the policies set forth above will be considered on a case-by-case basis, subject to the Special Use Permit process, provided that the degree of nonconformity is not significantly increased. However, no expansions of existing dairy or other animal confinement facilities shall be approved unless the whole dairy under permit meets the density standards set forth in Policy No. 2 above.

Joey Airoso, dairy owner/operator:

- Indicated that overall the proposal will be an advantageous for the dairy industry.
- Indicated that his dairy proposal got caught in the change in procedure and hopes that dairymen caught in the middle of the process will not be hurt.
- Expressed concern over proposed mitigation measures requiring road improvements or payment of impact fees. Further indicated that new dairies are required to have more cropland for disposal of waste and that traffic will actually be taken off roads because crops (particularly feed crops) will not be hauled in from off-site.
- Felt water samples were not needed when the water table is deep, such as greater than 160'.

Env. Response: Refer to response to comments from Mr. Fleming of Western United Dairymen. The statement that truck trips associated with dairy operations will be offset by the elimination of trips associated with cropland production is noted for the record. However, lack of funding for construction and maintenance of farm-to-market roads is still considered to be significant. The statement regarding water sampling will be addressed by a proposed revision to Mitigation Measure #4.3.1-8 requiring installation of monitoring wells depending on the results of geo/hydro reports.

Joe O'Bannon, San Joaquin Valley Air Pollution Control District:

- Stated support for the County's efforts and feels that the County is acting responsibly by utilizing a Program EIR that addresses general environmental concerns to avoid redundant environmental reviews.

Response: Comment noted.

Caroline Farrell, Attorney at Law, Center on Race, Poverty & the Environment:

- Indicated that a letter had previously been submitted outlining agency's comments and concerns.

Response: Refer to Responses to Written Comments contained in the Final PEIR.

Larry Serpa, Dairyman's/Land O'Lakes:

- Indicated general support for the Animal Confinement Facilities Plan and Program EIR.
- Expressed concerned over proposed road mitigation - not reasonable to expect the dairymen to bear all responsibility for road repairs. Supports the proposed mitigation measure that the County seek other funding for construction and maintenance of farm-to-market roads.
- Stated that the County needs to consider economic impacts to the dairy industry and doesn't want the industry to be singled out for traffic impact fees.

Env. Response: Refer to response to comments from Mr. Fleming of Western United Dairymen.

Chris Tantau, Tulare County Farm Bureau:

- Indicated support for the Animal Confinement Facilities Plan and Program EIR; however, expressed concern over proposed mitigation measures for traffic impacts and the requirement for monitoring wells.
- Expressed particular concern over how grandfathered facilities will be required to comply with new standards.

Env. Response: Refer to response to comments from Mr. Fleming of Western United Dairymen.

Staff Response: It was the intent of the Agricultural Advisory Committee that all animal facilities, including the Grandfathered dairies, be subject to the animal density standards of the ACFP (to provide compliance with environmental/public health concerns); it would not be reasonable or feasible to expect existing legally-established facilities to comply with new or revised locational policies that they cannot physically accommodate, however, (as stated in Animal Density and Locational Policy #3) potential physical expansions of existing nonconforming animal confinement facilities would be allowed provided that the degree of nonconformity of the separation encroachment is not increased. Staff is recommending a revision to Compliance and Monitoring Policy #3 to make it clear that all existing dairies must be brought into compliance with Animal Density Policy #2, not with the locational policies.

Lori Cardoza, Dairy owner/operator (Sousa & Sousa Dairy):

- Indicated that the County should develop a reporting format that would serve all agencies (e.g., County, RWQCB, etc.).

Env. NOTE: Ms. Cardoza also provided a letter containing comments and concerns on the PEIR. Refer to Responses to Written Comments contained in the Final PEIR.

Pete Gaalswyk, Dairy owner/builder:

- Asked the Commission to "keep the process simple" and not to "study it to death".
- Questioned who had preference to property rights; asked the Commission to consider who was there first when evaluating grandfathered facilities.
- Expressed that monitoring wells are not needed, that the water from existing wells should be tested.
- Indicated that the size of the dairy herd doesn't matter, it is the number of animal units per acre that counts.
- Indicated that crops grown today are hybrid and take up to three-four times the nitrates than those grown in the 1970's.

Env. Response: Comment noted.

Sandra Meraz, Alpaugh resident:

- Indicated that the EIR needs to address the Alpaugh area and that dairies should not come into the community.

Env. Response: The proposed Animal Confinement Facilities Plan addresses dairy and other bovine animal confinement facilities located on the Valley floor area of the county. This is the area defined as the "project area" discussed in the PEIR. Mitigation Measure #4.3.5-1 recommends adoption of the proposed policies that prohibit new operations to be established within Windshed Areas of established communities. These Windshed areas are defined as a one-mile setback from the community's Urban Area Boundary.

Linda MacKay, Alpaugh resident:

- Feels that the PEIR is a responsible approach and commends the Planning Commission.
- Indicated that Alpaugh is impacted by development in Tulare, Kings and Kern counties. Alpaugh is surrounded by AE-80 zoning and would be impacted by new dairy development.

Staff Response: In order to further explain the Staff recommendation (presented at the 1/26 Planning Commission hearing) regarding dairies in the AE-80 Zone, it should be noted that dairies have always been allowed in the AE-80 Zone (after approval of a use permit) and that Staff's recommendation was to continue allowing dairies in the AE-80 Zone despite the PEIR's suggestion to eliminate new dairies from the AE-80 Zone as a mitigation measure for impacts to wildlife/habitat. It should be noted that the vast majority of dairies in Tulare County are in the AE-40 Zone, which surrounds several other communities and cities, so Alpaugh is not being targeted for dairy development. Based on the Community Windshed policy (Animal Density and Locational Policy #4), no new dairy facilities would be permitted within one mile of Alpaugh's Urban Area Boundary.

Rob Hilardes, Sierra Cattle Company:

- Indicated that the overriding concern is time and the timing of the project; asked about timing of the document so that people can get on with their lives.

- Indicated that 30 applications had been submitted before the Attorney General lawsuit and have been placed on hold; asked if is possible for these applications to proceed.
- Indicated that the Planning Commission is responsible to answer to constituents, not the Attorney General.

Staff Response: None of the pending dairy applications have been placed on hold in the formal sense. Applications can proceed if applicants are willing to undergo the additional costs associated with a heightened level of CEQA review which may lead to preparation of EIRs. None have done so to date. Assuming that the Planning Commission approves the ACFP in March, Board of Supervisors action could occur in April. Following that, applications will be processed under the new Plan and PEIR.

Tom Shultz, Tulare County Farm Advisor, UCCE:

- Reiterated Jim Sullins' comment that they were available for scientific and technical assistance, indicating that he has available information and access to answer the issues.
- Stated that the EIR is very ambitious and the report provides a compilation of information not previously available.
- Responded to a question by Commissioner Fernandes as to whether farmers are dictated as to what crops they can grow.
- Indicated that approximately one-third of the feed given to dairy animals comes from sileage grown on-site.
- Indicated that the EIR needs to acknowledge that manure is going out of the county.
- Indicated the county soils are phosphorous deficient so that the proposed Federal nutrient management plan format would not be applicable in Tulare County.

Env. Response: Comment noted.

Doug VanBeek, Dairy owner/operator:

- Indicated that he has lived on a dairy all of his life and would not continue to if he felt it was a harmful environment for his family.

Env. Response: Comment noted.

REPORT TO THE PLANNING COMMISSION ON THE TULARE COUNTY AGRICULTURAL ADVISORY COMMITTEE MEETING OF JANUARY 25, 2000 (Re: Issues and Comments on the *Draft* Animal Confinement Facility Plan/Program Environmental Impact Report)

The Tulare County Agricultural Advisory Committee (AAC) reviewed the *Draft* Animal Confinement Facility Plan/Program Environmental Impact Report (ACFP/PEIR) at their meeting of January 25, 2000. A main topic of the AAC's discussion concerned comments on the draft ACFP/PEIR submitted in correspondence from the California Regional Water Quality Control Board (WQCB) regarding four areas/issues, as follows:

(1) Salt Loading calculations/assessment (Re: WQCB Comment #2)
WQCB comments note that the ACFP/PEIR acknowledges the importance of ensuring that soils are not overloaded with salts but that no salt loading criteria are provided and the nitrogen limitations provided in the document can result in excessive salt loading; the WQCB recommends including in the ACFP the salt loading criteria used by the Fresno Branch Office (and included as 'Attachment A'). The AAC concurred with adding salt loading criteria to the Plan but UCCE Dairy Adviser Tom Shultz expressed concern with the salt loading calculations cited by the WQCB (see discussion in No. 2 below).

(2) Use of a 1400-pound cow as One Animal Unit (Re: WQCB Comment #2)
WQCB comments note that Tulare County still uses a formula for assessing the reasonableness of a dairy proposal that relates all calculations to a 1400-pound animal unit, while WQCB's preference is use of the 1000-pound animal unit (and the formulas in the guidebooks developed by the Natural Resource Conservation Service relate all calculations to a 1000-pound animal). After discussion of the merits of converting to a 1000-pound animal unit, it was the general consensus of the AAC to retain the use of the 1400-pound animal unit because most milk cows in Tulare County are the larger Holsteins (which average 1400 pounds) so it is easier for dairymen to plan for and manage their operations since a 1400-pound animal would equal one milking unit; however, it was suggested that if two tables were provided side by side showing the conversion from the 1000-pound animal unit to the 1400-pound animal unit, it would make converting from other agency data easier and reduce the chance of rounding errors.

Included in the WQCB comments regarding salts was their concern that the County's omission of salt loading considerations and use of a 1400-pound animal unit can lead to significant discrepancies in the maximum Animal

Units per Acre allowed. However, Tom Shultz noted that the WQCB information bases salt production on 1.8 lbs/day for a 1400 pound animal versus 1.3 or 1.4 lbs/day, which would be the calculation deduced from the formula used by Merced County (which has been accepted by the WQCB). The AAC recommended that Mr. Shultz get clarification as to which calculation to use (1.8 vs. 1.3 lbs/day) for salt production and add the Salt Loading factor to Policy #2's Animal Density Table and, along with dairy consultants Bruce Livingston, Marty Levine, and Harlan Westbrook, formulate a parallel conversion table that lists the conversions for Nitrogen and Salts for both a 1400 pound Animal Unit and a 1000-pound Animal Unit. The AAC will consider the Salts calculations and the Animal Unit conversion table at the next meeting.

(3) Specific information for Geo-Hydro Report and requirement for Monitoring Wells (Re: WQCB Comments #9 and #10)

WQCB comments note that the PEIR requires (for mitigation of the potential impact of soil contamination and degradation of groundwater quality) submittal of a geo/hydro report but does not indicate who is to prepare said report or what information it is to contain; the WQCB recommends that the hydrogeologic report should be prepared by an appropriately licensed professional, lists the information that the report should contain, and notes that the results of the monitoring be submitted to the Tulare County RMA and Environmental Health Department and Central Valley RWQCB (and not that said monitoring will be by the aforementioned agencies, as stated in the PEIR). The AAC concurred with adding to the PEIR the WQCB's geo/hydro report and preparer requirements.

On a related note, regarding the PEIR's mitigation measure "Installation of wells to monitor nitrate and salt levels for all new dairy and other animal confinement facilities", the WQCB letter recommends that groundwater monitoring should be required for all new dairies and all expansions of concentrated animal feeding operations and further includes requirements for said monitoring system; in addition, the WQCB asks if a groundwater monitoring plan that is subject to review will be required. The AAC concurred with the requirements for the monitoring wells systems but had concerns with requiring them for all animal facilities since the potential for groundwater contamination is less likely in areas where the groundwater is deep and the soils are not highly permeable (is site specific). The AAC generally agreed that the results of the required Geo/ Hydro Report be used to determine whether or not monitoring wells will be required for dairies (but criteria will need to be developed for such a determination). As a technicality, Mr. Sullins pointed out that the requirement for monitoring wells is not actually a mitigation measure but the mitigation will come as a result of the monitoring.

Mr. Finney noted that the Waste Loading Standards in the Plan (Policy #2) are really the mitigation measures, and that use of monitoring wells will assure that the Waste-Loading Standards (which are based on the best available science) are really working and if not, then the AAC will need to go back and reconsider the Waste-Loading Standards.

4. Manure -- Value and Calculations (Re: WQCB Comment #11)

In its comments on the PEIR Alternative that discusses adoption of a countywide cap on the number of animals, the WQCB notes the failure to evaluate all sources of manure and cropping patterns of the land and concludes that Tulare County could not support the PEIR's suggested animal unit cap of 813,309 animal units.

Members of the AAC disagreed with WQCB conclusions, pointing out that it fails to recognize the value of manure as a commodity and the movement of manure out of the County and suggested that additional information on manure and its value and export may be needed in the PEIR. Mr. Finney added that the ACFP's proposed Annual Compliance Reports for the monitoring program will require information on how much manure is hauled off a facility and where it goes and that we can eventually develop such data from the annual reports.

Other main issues that the AAC discussed regarding the *Draft* Animal Confinement Facility Plan/Program EIR included the following:

5. Flexibility

The need for flexibility in the ACFP/PEIR was cited for two areas --

(a) Mr. Sullins stressed needing the ability to easily change animal policies/density requirements when science & technology & the industry changes. Mr. Finney responded that since the ACFP will be part of the County's General Plan, it can be amended (after environmental review and public hearings). Ms. Jiggerian noted that potential new technology might also provide new Mitigation Measures, so the PEIR could also be amended by revising the relevant Mitigation Measures to reflect changes to animal densities that could be allowed due to potential new science & technology.

(b) Mr. Finney stressed needing flexibility for projects that don't quite fit the Plan's animal density policies but look good otherwise (i.e., they comply with or even exceed compliance with the other policies). He noted that environmental compliance for such projects can be provided by more detailed environmental review through an individual focused EIR that addresses any changes from the ACFP/PEIR.

6. Roads/Traffic

No Committee consensus was reached on the issue of who should pay for road building and maintenance in dairy areas not served by major roads. Some AAC members asserted that dairy owners should not have to pay for such roads since the dairy industry adds so much to the County tax base and since not all the rural road traffic is from dairies. Conversely, it was also noted that road use by trucks from dairies is more constant than by most other/unregulated agricultural uses (i.e., the dairy milk and feed trucks must travel regardless of the weather, and the roads are most impacted when wet, especially since most of such outlying roads were not built with base and so don't drain well).

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APPENDICES

APPENDIX A

APPENDIX A
GLOSSARY

The following definitions and terms are provided in order to facilitate the review and understanding of terms used in the ACFP and PEIR.

ACFP: Refers to the Animal Confinement Facilities Plan of the Enviromental Resources Management Element of the Tulare County General Plan.

Adequate Capacity: Needed capacity can be estimated by summing the volume of manure collected, volume of rainfall collected from corrals, the amount of water added (consider fresh water and not recycled pond water), rainwater added directly to the pond, guttered water if collected, space for two feet of free board, and space for collection of rainfall from a 25 year-24 hour storm over the property. In areas of more than 22" of annual rainfall, it is recommended the capacity be included to hold water from a ten-year storm period. This is particularly important in areas of high rainfall where winter disposal is impractical because of potential runoff problems.

Aggregate: A group of soil particles cohering so as to behave mechanically as a unit. Larger aggregates provide more large pores which permit the rapid transfer of oxygen and water into the root zone.

Agronomic Application Rate: Fertilizer or manure application rate that is calculated to meet the difference between what the soil is able to supply and the total nutrient requirements of the crop(s) being grown.

Ambient Air: Air occurring at a particular time and place outside of structures. Often used interchangeably with outdoor air.

Animal Confinement Facility: Where used, the term "animal confinement facility" includes animal barns, corrals, or pens; feed (excluding hay barns) and manure storage and handling areas; and wastewater lagoons/sumps. When measuring setbacks and distances between animal facilities, measurements shall be taken from or between the most proximate part of the above-described facilities. Areas used for crop production or not otherwise utilized in the production of animals shall not be included for purposes of determining said setbacks and distances.

Animal Feeding Operation (AFO): Under the federal Clean Water Action Plan, AFOs are agricultural enterprises where animals are kept and raised in confined situations. AFOs congregate animals, feed, manure and urine, dead animals, and production operations on a small land area. Feed is brought to the animals rather than the animals grazing or otherwise seeking feed in pastures and fields.

Animal Unit: A common animal denominator, based on feed consumption, whereas one mature cow (1,400 pounds) represents one animal unit, as defined by the

Regional Water Quality Control Board. An "Animal Unit" is the feed equivalent of one milk cow, as follows:

Classification	Animal Units per Head
Dairy cows in milk and bulls	1.00
Dry cows and heifers more than two years of age	0.75
Heifers one year to two years (beef or dairy)	0.70
Heifers three months to one year (beef or dairy)	0.40
Calves to three months of age	0.17
Beef cows in milk and feedlot steers	0.75

Animal units for other animals on site will be calculated according to Regional Water Quality Control requirements.

Area Source: Term used in air quality analysis also known as "area-wide" sources. These include multiple stationary emission sources such as water heaters, gas furnaces, fireplaces, and woodstoves.

Attainment: Achieving and maintaining the air quality standards (both state and federal) for a given standard.

Available Nutrient in Soils: The part of the soil plant nutrient supply that is in a form which can be taken up by plants or which becomes available throughout the season by chemical or microbial activity.

Best Management Practices (BMPs): Those practices that combine scientific research with practical knowledge to optimize yields and crop quality while maintaining environmental integrity.

Buffer/Filter Strip: An area with vegetative cover where water flow is reduced to allow settling out of silt and organics, and enhanced infiltration of water.

Bulk Density: The ratio of the mass of water-free soil to its bulk volume.

Clean Water Action Plan (CWAP): Released in February 1998, the CWAP is a blueprint for restoring and protecting national water resources.

Concentrated Animal Feeding Operation (CAFO): Under the federal CWA, a CAFO is defined as an animal feeding operation where more than 1,000 animal units are confined at the facility; or more than 300 animal units are confined at the facility and: (1) pollutants are discharged into navigable waters through a manmade ditch, flushing system, or other similar man-made device; or (2) pollutants are discharged directly into waters that originate outside of and pass over, across or through the facility or come into direct contact with the confined animals.

Concentration: The amount of an air pollutant present in a unit sample, usually measured in parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$).

Concrete Storage Pad or Basin: A concrete pad with drainage or a liquid tight storage structure with sides.

Continuous Cropping: Havesting of one crop immediately followed by planting of the next crop.

Cover Crop: Crop used to reduce erosion and/or provide green manure to the subsequent crop, when grown during the fallow season, or the accompanying main crop (when simultaneously grown). The main purpose is to protect and improve the soil and use excess nutrients or soil moisture during the absence of a normal crop. Cover crops conserve soil organic matter, retain nutrients and reduce deep percolation during otherwise fallow periods.

Criteria Air Pollutant: An air pollutant for which acceptable levels of exposure can be determined and for which a federal or state Ambient Air Quality Standard has been set. Examples include: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and PM-10.

Crop Acreage: Irrigable portion of the total/gross subject parcel(s), including wastewater conveyance ditches, that is to be used for wastewater discharge and which exclude buildings, corrals and/or pens, feed and/or manure storage areas, lagoons/sumps, canals, waterways, and public road rights-of-way.

Denitrification/Denitrified: The process by which nitrates (NO_3^-) or nitrates (NO_2^-) in saturated soil or organic deposits are reduced by anaerobic bacteria resulting in the atmospheric release of nitrogen gasses (N_2, N_2O) into the atmosphere.

Discharge: Under the federal Clean Water Act, a "discharge" is defined as any addition of any pollutant to navigable waters from any point source.

Disposal Application Rate: An application rate well in excess of the agronomic application rate where nutrients are added in excess of those which are utilized by crop uptake.

Down Slope: Down hill from the point of interest.

Emissions Inventory: An estimate of the quantity of pollutants emitted into the atmosphere over a specific period such as a day or a year. Considerations that go into the inventory include type and location of sources, the processes involved, and the level of activity.

Emission Standard: The maximum amount of a pollutant that is permitted to be discharged from a polluting source such as an automobile or smoke stack.

Engineering Standards: Design and construction standards available at National Resources Conservation Service (NRCS) or Land Conservation Department (LCD) offices. These standards may come from NRCS technical guides, state regulations or engineering handbooks.

Environmentally Limiting Nutrient: A nutrient which when added to a waterway results in a deterioration.

Evapotranspiration: The combined processes of evaporation of water from the soil and plant surfaces and transpiration of water by the crop.

Indirect Source: Facilities, buildings, structures, properties, and/or roads which, through their construction to operation indirectly contributes to air pollution. This includes projects and facilities that attract or generate mobile sources activity (autos and trucks) such as shopping centers, employment sites, schools, and housing developments, that result in the emissions of any regulated pollutant.

Infiltration: The entry of water into the soil surface.

Liquid Manure: Up to 4% solids.

Macronutrients: Nutrients that plants require in relatively large amounts. Essential macronutrients include nitrogen (N), phosphorus (P) and potassium (K).

Manure Storage Pond (earthen basin or pit): Manure storage facility constructed according to specific engineering standards. California law requires that the soil have at least 10% clay and not more than 10% gravel or coarse material.

Micronutrients: Nutrients that plants need only in small or trace amounts. Essential micronutrients include boron, chlorine, copper, iron, manganese, molybdenum, nickel and zinc.

Mineralization/Mineralized: The bacterial conversion or organic forms of N to inorganic ammonium (NH_4^+) that is available to plants.

Nitrification/Nitrified: The formation of nitrates (NO_3^-) or nitrates (NO_2^-) from ammonia (or ammonium compounds) by microorganisms (bacteria) in well-aerated conditions. Nitrification generally occurs in fields after the application of manure.

NPDES Permit: A National Pollutant Discharge Elimination System Permit issued under Section 402 of the federal Clean Water Act.

Organic Matter: Matter made up of carbon compounds other than inorganic carbonates.

Organic Soil: Term applied to a soil that consists primarily of organic matter and which is generally conceded to have desirable chemical, biological, and physical properties (low bulk, density, high water infiltration rates, increase aggregate stability, high cation exchange capacity, high microbial activity) for plant growth.

Ozone Precursors: Compounds such as hydrocarbons and oxides of nitrogen, occurring either naturally or as a result of human activities, which contribute to the formation of ozone. the principal component of smog.

Percolation: The downward movement of water through the soil

Permeability: The quality of a soil that allows water and air to move through it.

Plant Limiting Nutrient: A specific nutrient which limits a plant's productivity.

Pollutant: Under the federal Clean Water Act, "pollutant" is broadly defined includes animal waste and related material.

Point Source: Under the federal CWA, "point source" includes any discernible, confined and discrete conveyance and specifically includes a "concentrated animal feeding operation (CAFO).

Runoff Control System: A combination of management practices that can be used together to prevent water pollution from livestock yard runoff. Practices may include diversion of runoff from the yard, roof runoff systems, yard shaping, settling basins. and filter strips or buffer areas.

Scavenger Crop: Crop used to take up excess soil nutrients. The crop is thereby harvested removing nutrients. This crop is used to remove nutrients, not to conserve nutrients.

Seasonal Cropping: Harvesting of one crop followed by a fallow period prior to planting the next crop.

Slurry Manure: Four to 15% solids.

Soil Drainage Class: The conditions of a soil describing the likely degrees of wetness. Different classes are described by such terms as "excessively drained", "well-drained" and "poorly drained".

Soil Permeability: The quality that enables the soil to transmit water or air. Slowly permeable soils have fine-textured materials, like clays, that permit only slow water movement. Moderately or highly permeable soils have coarse-textured materials, like sands. that permit rapid water movement.

Soil Texture: The relative proportions of the various soil separates (clay, sand, silt) in a soil. Described by such terms as "sandy loam" and "silty clay".

Solid Manure: Greater than 15% solids.

Tilth: The physical condition of soil with respect to its fitness for tillage and the growth of plants.

Unified National Strategy for Animal Feeding Operations: A strategy developed by USDA and EPA in response to the Clean Water Action Plan (CWAP).

Up Slope: Up hill from the point of interest. Example – if manure storage is up slope of the wellhead, then runoff from the storage area will flow toward the wellhead.

Volatilization: The evaporation or changing of a substance from liquid to vapor.

Water Table: The top of the subsurface water bearing zone. There are two types of water table: (1) the water table typically noted in a well log as an indication of usable water supply; and (2) the seasonal high water table. The seasonal high water table is most important when siting manure storage facilities. The lowest portion of the facilities should be at least five feet above the seasonal high water table.

25-year, 24-hour Storm Event: Precipitation that falls during a large storm even that occurs approximately once in 25 years during 24 hours. Average values can be obtained from the National Oceanic and Air Administration or possible from a local weather station.

APPENDIX B

STATEWIDE WATER QUALITY REGULATIONS FOR DAIRIES[1]

Subchapter 2. Confined Animals

Article 1. SWRCB - Confined Animal Facilities

§22560. SWRCB - Applicability. (Ch-15: §2560)
(a) **General**—This article prescribes statewide minimum standards for discharges of animal waste at confined animal facilities. These standards shall either be implemented in any WDRs issued for a particular animal waste facility or shall be made a condition to the waiver of such requirements.
(b) **ROWD**—A discharger required to submit a report of waste discharge shall provide the following general information and shall report any material changes as defined in Section 2210 of Title 23 of this code:
(1) average daily volume of facility wastewater and volume or weight of manure;
(2) total animal population at the facility, and types of animals;
(3) location and size of use or disposal fields and retention ponds, including animal capacity; and
(4) animal capacity of the facility.
(c) **Regulations Are Minimum Standards**—The RWQCB shall impose additional requirements, if such additional requirements are necessary to prevent degradation of water quality or impairment of beneficial uses of waters of the state.

§22561. SWRCB - General Standard For Surface Water. (Ch-15: §2561)
The discharger shall prevent animals at a confined animal facility from entering any surface water within the confined area.

§22562. SWRCB - Wastewater Management. (Ch-15: §2562)
(a) **Design Storm (for Run-On/Run-Off Control)**—Confined animal facilities shall be designed and constructed to retain all facility wastewater generated, together with all precipitation on, and drainage through, manured areas during a 25-year, 24-hour storm.
(b) **Manured Area Run-On Exclusion**—All precipitation and surface drainage outside of manured areas, including that collected from roofed areas, and runoff from tributary areas during the storm events described in &(a), shall be diverted away from manured areas, unless such drainage is fully retained. RWQCBs can waive application of such requirements only in specific instances where upstream land use changes have altered surface drainage patterns such that retention of flood flows is not feasible.
(c) **Design Storm (for Flood Protection).**
(1) Retention ponds and manured areas at confined animal facilities in operation on or after November 27, 1984, shall be protected from inundation or washout by overflow from any stream channel during 20-year peak stream flows.
(2) Existing facilities that were in operation on-or-before November 27, 1984, and that are protected against 100-year peak stream flows must continue to provide such protection. Facilities, or portions thereof, which begin operating after November 27, 1984, shall be protected against 100-year peak stream flows.
(3) The determination of peak stream flows shall be from data provided by a recognized federal, state, local, or other agency.

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[1] From Title 27, Division 2, Subdivision 1, California Code of Regulations.

(d) **Retention Pond Design**—Retention ponds shall be lined with, or underlain by, soils which contain at least 10 percent clay and not more than 10 percent gravel or artificial materials of equivalent impermeability.
(e) **Discharge To Disposal/Use Fields**—The RWQCB shall allow the discharge of facility wastewater and of collected precipitation and drainage waters to use or disposal fields only if such discharge is in accordance with ß18130. Absent an NPDES permit for discharge to surface waters, the only other allowable discharge is to wastewater treatment facilities approved by the RWQCB.

§22563. SWRCB - Use or Disposal Field Management. (Ch-15: §2563)
(a) **Reasonable Soil Amendment Rate**—Application of manure and wastewater to disposal fields or crop lands shall be at rates which are reasonable for the crop, soil, climate, special local situations, management system, and type of manure.
(b) **Run-Off & Percolation**—Discharges of facility wastewater to disposal fields shall not result in surface runoff from disposal fields and shall be managed to minimize percolation to ground water.

§22564. SWRCB - Management of Manured Areas. (Ch-15: §2564)
Manured areas shall be managed to minimize infiltration of water into underlying soils.

§22565. SWRCB - Monitoring. (Ch-15: §2565)
The RWQCB can require confined animal facility operations to undertake a monitoring program as a condition to the issuance or waiver of WDRs.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. 96-270

GENERAL WASTE DISCHARGE REQUIREMENTS FOR MILK COW DAIRIES

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Board) finds that:

1. Pursuant to Section 13263 of the Water Code, the Board regulates the disposal of wastes to ensure protection of the beneficial uses of both surface and ground waters and the prevention of nuisances. The dairy industry represents a significant source of wastes in the Central Valley.

2. Dairies generate wastes that include, but are not limited to: manure, wash water, corral runoff, storm water runoff, irrigation tailwater, spoiled feed materials, runoff from feeds, dead animals, bedding, and cleaning compounds. This Order only addresses wastes generated at the dairy.

3. Waste generated at dairies is stored in corrals, on waste piles, and/or in waste ponds. The wastes are then applied to on-site cropland or transported elsewhere. The wastes can provide water and nutrients to crops, but if improperly managed can create nuisance conditions and cause pollution of surface and groundwaters.

4. Discharges of dairy waste, as regulated under the Water Code, include, but are not limited to: (1) the application of wastes to land, (2) the movement of waste constituents from application and storage areas into the soil, and (3) movement of waste or water containing wastes into surface waters.

5. Title 23 of the California Code of Regulations, sections 2560 and following, address storage and discharge of waste to land at confined animal facilities. This Order implements these regulations.

6. The Board adopted Resolution No. 82-036 which waives waste discharge requirements (WDRs) for specific types of discharge including those from confined animal facilities. This waiver is conditional and may be terminated at any time.

7. To date, individual waste discharge requirements have been adopted by the Board for some of the milk cow dairies that do not meet waiver conditions in Resolution No. 82-036.

8. The Regional Board has adopted Water Quality Control Plans (Basin Plans) for the Central Valley Region. The third edition of the Basin Plan for the Sacramento River and San Joaquin River Basins was adopted in 1994 and the second edition of the Basin Plan for the Tulare Lake Basin was adopted in 1995. The Basin Plans specify water quality objectives and beneficial uses for surface and groundwaters in the Central Valley Region. Beneficial uses of waters in the Central Valley Region that could be impacted by the discharge of dairy wastes include: municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, groundwater recharge, freshwater replenishment, navigation, hydropower generation,

water contact recreation, non-contact water recreation, commercial and sport fishing, aquaculture, warm freshwater habitat, cold freshwater habitat, estuarine habitat, wildlife habitat, preservation of biological habitats of special significance, rare, threatened or endangered species, migration of aquatic organisms, spawning reproduction and/or early development and shellfish harvesting. This Order is consistent with the Basin Plans.

9. The Board has considered the antidegradation policy in State Water Resources Control Board Resolution No. 68-16, and finds that the requirements herein are consistent with this policy.

10. To expedite application of and compliance with water quality regulations regarding dairies, and leverage limited staff resources, the Board intends that this general order be issued administratively as specified herein whenever an owner and/or operator applies with a "Notice of Intent (NOI)" for a specific dairy facility and Executive Officer finds it applicable. Further, where a dairy has not or refuses to submit a NOI for a specific dairy facility, the Board itself may direct that the Discharger comply with this Order.

11. The Board will issue individual WDRs when it determines that it is not appropriate to apply the general WDRs or grant a waiver of WDRs.

12. The Board, through its Executive Officer, may vary the monitoring program required by this Order to address the specific circumstances at a daily facility.

13. This Order shall only be applied to dairy facilities that fall into the following categories:

    a. Where issuance of waste discharge requirements to the facility is exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et. seq.) in accordance with Section 15301, Title 14, of the California Code of Regulations; or

    b. Where Food and Agricultural Code Section 33487 prohibits the Board from requiring an environmental impact report for a dairy farm constructed after 1983 under all of the following circumstances:

        (1) When the proposed dairy will be constructed and operated in accordance with the minimum standards established under Chapter 5, Division 15 of the Food and Agricultural Code.

        (2) Where the applicable local public agencies have completed all necessary reviews and approvals, including the provisions of Division 13 (commencing with Section 21000) of the Public Resources Code (CEQA), where applicable.

        (3) Where a permit for construction has been issued by the appropriate local agency or agencies, and construction undertaken.

c. Where an environmental impact report or negative declaration determines there will be no significant adverse affects provided the dairy facility complies with the terms of this Order.

14. The Board has notified interested agencies and persons of its intent to prescribe General Waste Discharge Requirements for Milk Cow Dairies and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

15. The term Discharger refers to owners and operators of those milk cow dairies that have submitted a complete NOI or that have been specified by the Board.

IT IS HEREBY ORDERED that all Dischargers specified by the Board and all Dischargers that have submitted a complete Notice of Intent, their agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. The discharge of water containing waste from property under the control of the Discharger is prohibited except where runoff results from a storm exceeding a 25-year, 24-hour frequency.

2. The disposal of dead animals at this facility is prohibited unless a Report of Waste Discharge for the disposal has been submitted and waste discharge requirements have been issued or waived.

3. The discharge of hazardous waste at this facility is prohibited.

B. Waste Discharge Specifications:

1. Neither the storage nor the discharge of waste shall create a condition of nuisance or pollution as defined by Section 13050 of the California Water Code.

2. For Surface Water Protection:

   a. Confined animal facilities shall be designed, constructed, and operated to retain (1) all facility wastewater generated by washing animals, equipment, and facilities; and (2) all precipitation, and drainage that comes into contact with feed or manured areas except runoff which results from a storm exceeding a 25-year, 24-hour frequency. If a discharge to a surface water drainage course is made under this exception, the discharge shall be controlled to not impact beneficial uses of the receiving waters.

   b. Liquid wastes in retention ponds and other storage facilities shall not be discharged in surface waters or to drainage courses that are tributary to surface waters.

c. All precipitation and surface drainage outside of manured areas, including that collected from roofed areas, and runoff from tributary areas during the storm events described in Waste Discharge Specification B.2.a., shall be diverted away from manured areas, unless such drainage is fully retained. Precipitation and surface runoff that has not come into contact with animal feed material, manure, or other waste material may be discharged to cropland or surface water drainage courses.

d. Retention ponds and manured areas at dairies in operation before August 1975 shall be protected from inundation or washout by overflow from any stream channel during 20-year peak stream flows. Facilities constructed after August 1975 shall be protected against 100-year stream flows. Facilities in operation before August 1975 that are protected against 100-year peak stream flows must continue to provide such protection. The determination of peak stream flows shall be from data provided by a recognized federal, state, local, or other agency.

e. Discharges of facility wastewater to crop land shall not result in runoff to surface waters or to drainage courses that are tributary to surface waters. Mixtures of irrigation water and facility wastewater shall be managed as facility wastewater.

f. Animals at a confined animal facility shall be prevented from entering any surface water within the confined area.

3. For Groundwater Protection:

a. Liquid wastes that remain in one location for more than five days shall be stored in either: (1) retention ponds that are built and operated in compliance with this order; (2) in facilities that are designed, built and operated to prevent pollution of groundwater (see Provision C.9. regarding the technical report that must be submitted regarding these facilities); or (3) in above ground tanks. Liquid waste includes but is not limited to wash water and rainfall runoff that has come into contact with manure or feed.

b. Retention ponds shall be lined with or underlain by soils which contain at least 10 percent clay and not more than 10 percent gravel or artificial materials of equivalent impermeability.

c. Application of manure and wastewater to disposal fields or crop land shall be at rates which are reasonable for the crop, soil, climate, special local situations, management system, and type of manure.

d. Discharges of facility wastewater to disposal fields shall be managed to minimize percolation to groundwater.

e. Manured areas including but not limited to corrals and manure storage areas shall be managed to minimize infiltration of water into underlying soils.

f. Waste retention ponds in the Tulare Lake Basin constructed after 17 August 1995 shall be sited, designed, constructed, and operated to ensure that wastes will be at least five feet above the highest anticipated elevation of underlying groundwater. Waste retention ponds in the Tulare Lake Basin constructed prior to 17 August 1995 and in other Basins of the Region shall be sited, designed, constructed and operated to ensure that wastes will be above the highest anticipated elevation of underlying groundwater.

g. The salt in animal rations should be limited to that required to maintain animal health and optimum production.

C. Provisions:

1. Dischargers that want to be regulated under this Order shall submit a completed Notice of Intent form (Attachment A), an appropriate filing fee, and other information deemed necessary by the Executive Officer. After receiving and reviewing a complete submittal, the Executive Officer shall advise the Discharger that the facility is covered by this Order or that individual waste discharge requirements will be prepared.

2. Pursuant to Section 13267 of the California Water Code, the Discharger shall prepare, and update as necessary, a Water Pollution Prevention Plan containing the information listed in Attachment B. The Discharger must complete this Plan within 60 days of being directed to comply with this Order and will retain a copy at the facility for review by Board staff during inspections.

3. Pursuant to Section 13267 of the California Water Code, the Discharger shall comply with the Monitoring and Reporting Program specified by the Executive Officer and any subsequent amendments made thereto by the Executive Officer.

4. Individual Monitoring and Reporting Programs (MRP) may be required by the Executive Officer on a case-by-case basis. An individual MRP may be in addition to, or may supersede, the monitoring and reporting requirements of this Order.

5. Any Discharger who has not submitted a Report of Waste Discharge and/or filing fee with the Regional Board shall submit a complete Report of Waste Discharge with the appropriate filing fee within 30 days of being directed to comply with this Order.

6. If wastes such as, but not limited to, whey, cannery wastes, septage, sludge, biosolids and ash are proposed to be brought onto the dairy facility for the purpose of discharging it to land or to holding ponds, the Discharger shall submit a Report of Waste Discharge and receive a waste-specific waiver or waste discharge requirements from the Board prior to receiving the waste.

7. The Discharger may be required to submit technical reports as directed by the Executive Officer.

8. Prior to the use of any new waste retention ponds, the Discharger shall submit a report verifying that the excavation meets all requirements of this Order. Waste shall not be placed into a retention pond until after the Executive Officer notifies the Discharger in writing that the report is acceptable.

9. If liquid waste is stored at sites other than waste retention ponds meeting the provisions of this Order or in above ground tanks, the Discharger shall submit a written report completed by a registered engineer or engineering geologist verifying that the storage facility will not result in a discharge to groundwater at rates that adversely impact beneficial uses. The Discharger shall submit a work plan for the preparation of this report within 60 days of being directed to comply with this Order or as specified by the Executive Officer. The report must be completed and submitted within six months of approval of the work plan.

10. If plans for animal waste disposal include application onto property not under the control of the Discharger, a copy of the written agreement regarding use of the disposal area shall be provided to the Board along with details on how the property is managed.

11. The Discharger shall allow representatives of the Regional Water Quality Control Board , upon presentation of credentials, at reasonable hours, to:

    a. enter premises where wastes are treated, stored, or discharged and facilities in which any required records are kept;

    b. copy any records required to be kept under terms and conditions of this Order;

    c. inspect facilities, monitoring equipment, practices, or operations regulated or required by this Order; and

    d. sample, photograph or video tape any discharge, waste, waste management unit or monitoring device.

12. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

13. The filing of a request by the Discharger for modification, revocation and reissuance, or termination of this Order, or notification of planned changes or anticipated noncompliance, does not stay any condition of this Order.

14. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

15. This Order is not transferable to any person except after notice to the Board. The Board may modify or revoke and reissue the Order to change the name of the Discharger and incorporate such other requirements as may be necessary.

16. Except for data determined to be confidential, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Board.

17. The fact that it would have been necessary for the Discharger to halt or reduce the permitted activity in order to comply with this Order shall not be a defense for violating this Order.

18. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner(s) or operator(s) of the existence of this Order by letter, a copy of which shall be forwarded to the Board.

19. All discharges from the facility must comply with lawful requirements of the municipalities, counties, irrigation districts, drainage districts, and other local agencies regarding discharges of water to storm drain systems or other water courses under their jurisdiction.

20. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another; protect the Discharger from liability under federal, state, or local laws; or guarantee the Discharger a capacity right in the receiving waters.

21. The Discharger shall give advance notice to the Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order.

22. Safeguard to electric power failure:

    a. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.

    b. Upon written request by the Board, the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, standby pumps, retention capacity, operating procedures, or other means. The adequacy of the safeguards is subject to the approval of the Board.

    c. Should the storage and disposal systems not include safeguards against reduction, loss, or failure of electric power, or should the Board not approve the existing safeguards, the Discharger shall, within ninety days of having been advised in writing by the Board that the existing safeguards are inadequate, provide to the Board a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Board, become a condition of this Order.

23. The Discharger shall retain records of all monitoring information for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

    The records of monitoring information shall include:

    a. the date, exact place, and time of sampling or measurements,
    b. the individuals(s) who performed the sampling of measurements,
    c. the date(s) analyses were performed,
    d. the individual(s) who performed the analyses,
    e. the laboratory which performed the analyses,
    f. the analytical techniques or methods used, and
    g. the results of such analyses.

24. Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both.

    All reports shall be signed by a person identified below:

    a. For a corporation: by a principal executive officer of at least the level of senior vice-president.

    b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.

    c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.

    d. A duly authorized representative of a person designated in 24a, 24b or 24c, of this requirement, if:

        (1) the authorization is made in writing by a person described in 24a, 24b, or 24c of this provision:

        (2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position), and

        (3) the written authorization is submitted to the Board.

Each person signing a report required by this Order or other information requested by the Board shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

The Discharger shall mail a copy of each monitoring report and any other reports required by this Order to:

California Regional Water Quality Control Board
Central Valley Region
3443 Routier Road, Suite A
Sacramento, CA 95827-3098

25. WAIVER OF WASTE DISCHARGE REQUIREMENTS: A Discharger that has been placed under this Order may request a waiver of WDRs following a minimum of three years of consecutive compliance with this Order and proof of attendance of at least one educational program approved by the Executive Officer.

I, WILLIAM H. CROOKS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 25 October 1996.

WILLIAM H. CROOKS, Executive Officer

ldj/amended 25 October 1996

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. 96-270-01
FOR
MILK COW DAIRIES

MONITORING

1. The Discharger shall inspect waste holding and disposal areas and note any discharges made off of property under the control of the Discharger. Inspections will be made daily when wastewater and/or manure are being applied to cropland and weekly during other periods.

2. Within one year of the effective date of this order, the Discharger shall prepare a nutrient and irrigation water management plan. The plan shall provide site-specific information on the use of animal waste and other nutrients on cropland at the facility and shall be designed to show how the facility will be operated in compliance with the Waste Discharge Requirements. Upon completion of the plan, the Discharger shall maintain any records needed to determine compliance with the plan.

REPORTING

1. **Notification of Release or Discharge:**

   The Discharger shall notify the Regional Board by telephone within 72 hours of any off-property discharge of facility wastewater containing manure. This notification will be followed by a written report which shall be submitted to the Regional Board within two weeks of the discharge. The written report will contain:

   a. date discharge began;

   b. duration of discharge;

   c. point of discharge;

   d. specific source of waste discharge (e.g., overflow from holding pond, rainfall runoff from manure storage areas, etc.);

   e. steps taken to prevent runoff in the future.

2. Annual Reports

   An annual written report covering the 12 month period beginning 1 November and ending 31 October of the following year shall be submitted to the Regional Board by **30 November.** The report shall certify that the Water Pollution Prevention Plan is current and being followed and shall provide the following information:

a. Maximum number of animal units (AU) at the site during the year. The following table should be used to calculate AUs. Multiply the number of head in each category by the given factor to obtain the number of AUs in each category. Add the AUs from each category to get the total for the facility.

	Head		Factor		Animal Units (AU)
Milk Cows	____	x	1.0	=	_____
Dry Cows	____	x	0.75	=	_____
Bred Heifers	____	x	0.75	=	_____
Heifers (1 year - breeding)	____	x	0.7	=	_____
Calves (3 mos. - 1 year)	____	x	0.4	=	_____
Baby calves	____	x	0.25	=	_____
Total head	____			Total AUs:	_____

b. Breed of cow at the dairy.

c. Logs of inspections made during the year.

d. A statement indicating that the facility was operated according to the nutrient and irrigation water management plan or an explanation of how the operation varied from the plan.

e. Any changes in the facility or farming operation which may influence waste management. Include a copy of any new or updated nutrient and irrigation water management plans.

The Discharger shall implement the above monitoring program upon the effective date of this Order.

Ordered by: William H. Crooks
WILLIAM H. CROOKS, Executive Officer

25 October 1996
(Date)

RJS:dlk

California Regional Water Quality Control Board
Central Valley Region

ATTACHMENT A

NOTICE OF INTENT
TO COMPLY WITH THE TERMS OF THE GENERAL WASTE DISCHARGE REQUIREMENTS FOR MILK COW DAIRIES
ORDER NO. _____

FACILITY

NAME OF FACILITY: _____

ADDRESS OF FACILITY: _____

COUNTY: _____

CONTACT PERSON: _____ TELEPHONE NO.: _____

NAME OF LEGAL OWNER OF FACILITY: _____

ADDRESS OF LEGAL OWNER OF FACILITY: _____

CONTACT PERSON: _____ TELEPHONE NO.: _____

NAME OF BUSINESS OPERATING FACILITY: _____

ADDRESS OF BUSINESS OPERATING FACILITY: _____

CONTACT PERSON: _____ TELEPHONE NO.: _____

OPERATION AND DISPOSAL INFORMATION

COMPLETE AND ATTACH A COPY OF THE FORM TITLED "DAIRY/FEEDLOT WASTE DISCHARGE STANDARD QUESTIONNAIRE"

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) COMPLIANCE

HAS ANY CEQA DOCUMENT BEEN PREPARED FOR THIS PROJECT? _____ YES _____ NO

IF "YES", PLEASE ENCLOSE A COPY
IF "NO", WILL ANY CEQA DOCUMENT BE PREPARED? _____ YES _____ NO

WILL A NEGATIVE DECLARATION BE PREPARED? _____ YES _____ NO

IF "YES", WHO WILL PREPARE THE NEGATIVE DECLARATION? _____ APPROXIMATE DATE OF COMPLETION _____

CERTIFICATION

I HEREBY CERTIFY UNDER PENALTY OF PERJURY THAT THE INFORMATION PROVIDED IN THIS NOTICE OF INTENT AND IN ANY ATTACHMENTS IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE. IN ADDITION, I CERTIFY THAT THE PROVISIONS OF THE ORDER, INCLUDING THE MONITORING AND REPORTING PROGRAM, AND THE DEVELOPMENT AND IMPLEMENTATION OF A WATER POLLUTION PREVENTION PLAN, WILL BE COMPLIED WITH.

_____ _____
SIGNATURE OF OWNER OF FACILITY SIGNATURE OF OPERATOR OF FACILITY

_____ _____
PRINT OR TYPE NAME PRINT OR TYPE NAME

_____ _____
TITLE AND DATE TITLE AND DATE

CENTRAL REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

GENERAL WASTE DISCHARGE REQUIREMENTS FOR MILK COW DAIRIES

WATER POLLUTION PREVENTION PLAN

Each facility covered by the Order must prepare a written Water Pollution Prevention Plan containing the following information:

1. A list of all points from which wastewater, stormwater runoff and irrigation runoff containing manure or feed wastes can leave property under control of the Discharger.

2. A list of all areas other than waste retention ponds or crop land (such as corrals, yards, ditches, etc.) where wastewater and stormwater containing manure can infiltrate into underlying soils.

3. Sketches and/or maps showing the locations listed pursuant to paragraphs 1 and 2. Also show the locations of all ditches, drains, creeks and pipelines. Indicate direction of slope of all fields.

4. An explanation of how wastewater, stormwater and irrigation water containing manure are prevented from leaving property under control of the Discharger.

5. An explanation how constituents in manure and feed wastes are managed to reduce movement to groundwater to acceptable levels.

6. If wastes leave property under control of the Discharger or migrate into ground water in violation of the Order, outline measures that will be implemented to bring the dairy facility and/or farm into compliance with the Order.

A copy of this plan should be maintained at the dairy so that it can be reviewed during site inspections. Copies shall also be submitted to the Regional Board upon request.

APPENDIX C

TABLE 6
PLANT FOOD UTILIZATION BY VARIOUS CROPS*

		POUNDS PER ACRE		
FIELD CROPS	YIELD	N	P_2O_5	K_2O
Barley	2 1/2 t.	160	60	160
Canola (whole plant)	4,000 lbs	240	120	190
Corn (grain)	5 t.	240	100	240
Corn (silage	30 t.	250	105	250
Cotton (lint)	1,500 lbs.	180	65	125
Grain sorgnum	4 t.	250	90	200
Oats	3,200 lbs.	115	40	145
Rice	7,000 lbs.	110	60	150
Safflower	4,000 lbs.	200	50	150
Sugar Beets	30 t.	255	60	550
Wheat	3 t.	175	70	200
VEGETABLE CROPS				
Asparagus	3,000 lbs.	95	50	120
Beans (snap)	10,000 lbs.	175	40	200
Broccolli	18,000 lbs.	80	30	75
Cabbage	35 t.	270	65	250
Celery	75 t.	280	165	750
Lettuce	20 t.	95	30	200
Potatoes (Irish)	500 cwt.	270	100	550
Squash	10 t.	85	20	120
Sweet potatoes	15 t.	155	70	315
Tomatoes	30 t.	180	50	340
FRUIT AND NUT CROPS				
Almonds (in shell)	3,000 lbs.	200	75	250
Apples	15 t.	120	55	215
Cantaloupes	30 t.	220	70	400
Grapes	15 t.	125	45	195
Oranges	30 t.	265	55	330
Peaches	15 t.	95	40	120
Pears	15 t.	85	25	95
Prunes	15 t.	90	30	130
FORAGE CROPS				
Alfalfa	8 t.	480	95	480
Bromegrass	5 t.	220	65	315
Clover-grass	6 t.	300	90	360
Orchard grass	6 t.	300	100	375
Sorghum-sudan	8 t.	325	125	475
Timothy	4 t.	150	55	250
Vetch	7 t.	390	105	320
TURF CROPS				
Bent grass	2 1/2 T.	225	80	160
Bermuda grass	4 T.	225	40	160

Levels of Nitrogen utilization are proportional to crop yield and can be adjusted accordingly.

* From Western Fertilizer Handbook (1995)

APPENDIX D

DRAFT

'Exhibit B.1' (T.C. Agricultural Advisory Committee, 10/20/98)

For Department use only: RMA Dairy Identification No.__________

PSP No.(latest) __________ (AUs = __________; Milk = ________)
OR Pre-PSP / 1973 MD List (AUs = __________; Milk = ________)

><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><><<

ANNUAL COMPLIANCE REPORT -- ________ year

[Information requested below is to be filled out by the current dairy operator and submitted to the Tulare County Resource Management Agency** by November 30, ____.]

Dairy (milk barn) Address ______________________________

Current Operator: Name ______________________________

Mailing Address ______________________________

Telephone Number ______________________________

I. ANIMAL COUNT (on site, as of October 1, _______)

Number	Animal Classification	Animals per Housing Type: Free Stall	Open Corral
______	Dairy cows in milk ??*NOTE BREED*??	: ________	________
______	Mature bulls	: ________	________
______	Dry cows and/or springer heifers, two years of age or more	: ________	________
______	Heifers and/or bulls, one year to two years	: ________	________
______	Heifers and/or bulls, three months to one year	: ________	________
______	Calves under three months (in pens/hutches)		

Other animals (such as horses, beef, dairy beef, sheep, swine, etc.) — list by animal type and numbers of each: ____________________

____

____

II. CROPPING PROGRAM ON IRRIGABLE ACREAGE RECEIVING LAGOON WATER.
for the 12 months following October 1, _____:
[Attach additional sheets if necessary.]

	Crop Type		Acreage (& APNs)
DOUBLE CROP to:			
Winter:	_____	=	_____
	_____	=	_____
	_____	=	_____
Summer:	_____	=	_____
	_____	=	_____
	_____	=	_____
SINGLE or PERMANENT CROP to:	_____	=	_____
	_____	=	_____
	_____	=	_____

Any additional cropping acreage off site not accounted for above that receives lagoon water? List acreages and crops grown and respective Assessor Parcel Numbers (APNs): _____

_____

Do you have any new or revised wastewater agreements with other properties? If so, describe any changes, noting acreages & APNs (and attach a copy of any new or revised waste-water agreement): _____

_____

NOTE: During County compliance inspection, you must have wastewater agreements on hand.

Total acres on site receiving manure only, including land leased under the use permit (note acreages & APNs and how many tons received per each): _____

_____

Manure produced at this facility that was taken off site for use on property that is not under the use permit for this facility:

Tons of manure hauled off site for free (also note destination acreages & APNs and how many tons received per each): _____

_____

Tons of manure hauled off site and sold: _____
[Attach copies of receipts showing manure sold off.]

Total acres on site receiving BOTH manure and lagoon water (note acreages & APNs): _____

_____

III. NUTRIENT RECYCLING

Estimate the average length of time that wastewater was held in lagoons:
<30 days _____ 30-60 days _____ >60 days _____

Estimate how much wastewater was discharged per APN: _____
_____
_____
_____

AFFIDAVIT

I certify that the information submitted herein is complete and accurate, to the best of my knowledge (failure to submit complete and accurate requisite information may result in an ??administrative penalty as provided for in Ordinance Number _____??).

Signature: _____ Date: _____

** Mail or present the completed Annual Compliance Report to:

Tulare County Resource Management Agency
5961 South Mooney Blvd, Visalia, CA 93277

Contact Person: _____

[Telephone Number: (209)733-6291]

Recommended 'ANNUAL COMPLIANCE REPORT' Items No. I, II, and III were adopted as set forth above by the Agricultural Advisory Committee on October 20, 1998.

APPENDIX E

Discussion

A separate section is provided to authorize combining the general plan document with the EIR. This section allows the use of the general plan document as the EIR if the document contains a special section or a cover sheet identifying where each of the points required in an EIR may be found. This section also identifies the special requirement for an EIR on a general plan to be submitted to the State Clearinghouse for review as a project of areawide, regional, or statewide significance as provided in Section 15207.

15167. Staged EIR

(a) Where a large capital project will require a number of discretionary approvals from government agencies and one of the approvals will occur more than two years before construction will begin, a staged EIR may be prepared covering the entire project in a general form. The staged EIR shall evaluate the proposal in light of current and contemplated plans and produce an informed estimate of the environmental consequences of the entire project. The aspect of the project before the public agency for approval shall be discussed with a greater degree of specificity.

(b) When a staged EIR has been prepared, a supplement to the EIR shall be prepared when a later approval is required for the project, and the information available at the time of the later approval would permit consideration of additional environmental impacts, mitigation measures, or reasonable alternatives to the project.

(c) Where a statute such as the Warren-Alquist Energy Resources Conservation and Development Act provides that a specific agency shall be the Lead Agency for a project and requires the Lead Agency to prepare an EIR, a Responsible Agency which must grant an approval for the project before the Lead Agency has completed the EIR may prepare and consider a staged EIR.

(d) An agency requested to prepare a staged EIR may decline to act as the Lead Agency if it determines, among other factors, that:

(1) Another agency would be the appropriate Lead Agency; and

(2) There is no compelling need to prepare a staged EIR and grant an approval for the project before the appropriate Lead Agency will take its action on the project.

Note

Authority cited: Sections 21083 and 21087, Public Resources Code; Reference: Section 21003, Public Resources Code.

Discussion

The staged EIR was developed as a device to deal with the problem of a large development project which would require many years for planning, engineering, and construction but would need a number of approvals from public agencies before the final plans for the project would be available. Where those final plans would not be available, the Lead Agency preparing an EIR for one of the early approvals would have difficulty providing enough information about the project to evaluate the effects of the entire project as would otherwise be required.

The device of the staged EIR provides a special relaxation of the requirement for the EIR on a development project to examine the entire project in detail. To make up for this lack of detail with the early approval, the section requires preparation of a supplement with later approvals when additional information becomes available. The section also allows this device to be used in the troublesome situation where an agency with limited control over the project is asked to grant the first approval for the project long before the normal Lead Agency would be called upon to act. The Responsible Agency needs some document to use in order to comply with CEQA. At the same time, due to its limited control over the project, it would not be a prime candidate for being Lead Agency. This approach allows the Responsible Agency to do a limited EIR examining the effects of its approval but noting in a general way the larger scope of the project and the general environmental effects expected.

15168. Program EIR

(a) General. A program EIR is an EIR which may be prepared on a series of actions that can be characterized as one large project and are related either:

(1) Geographically,

(2) A logical parts in the chain of contemplated actions,

(3) In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or

(4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.

(b) Advantages. Use of a program EIR can provide the following advantages. The program EIR can:

(1) Provide an occasion for a more exhaustive consideration of effects and alternatives than would be practical in an EIR on an individual action,

(2) Ensure consideration of cumulative impacts that might be slighted in a case-by-case analysis,

(3) Avoid duplicative reconsideration of basic policy considerations,

(4) Allow the Lead Agency to consider broad policy alternatives and programwide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts, and

(5) Allow reduction in paperwork.

(c) Use with Later Activities. Subsequent activities in the program must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared.

(1) If a later activity would have effects that were not examined in the program EIR, a new Initial Study would need to be prepared leading to either an EIR or a Negative Declaration.

(2) If the agency finds that pursuant to Section 15162, no new effects could occur or no new mitigation measures would be required, the agency can approve the activity as being within the scope of the project covered by the program EIR, and no new environmental document would be required.

(3) An agency shall incorporate feasible mitigation measures and alternatives developed in the program EIR into subsequent actions in the program.

(4) Where the subsequent activities involve site specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were covered in the program EIR.

(5) A program EIR will be most helpful in dealing with subsequent activities if it deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed analysis of the program, many subsequent activities could be found to be within the scope of the project described in the program EIR, and no further environmental documents would be required.

(d) Use with Subsequent EIRs and Negative Declarations. A program EIR can be used to simplify the task of preparing environmental documents on later parts of the program. The program EIR can:

(1) Provide the basis in an Initial Study for determining whether the later activity may have any significant effects.

(2) Be incorporated by reference to deal with regional influences, secondary effects, cumulative impacts, broad alternatives, and other factors that apply to the program as a whole.

(3) Focus an EIR on a subsequent project to permit discussion solely of new effects which had not been considered before.

(e) Notice with Later Activities. When a law other than CEQA requires public notice when the agency later proposes to carry out or approve an activity within the program and to rely on the program EIR for CEQA compliance, the notice for the activity shall include a statement that:

(1) This activity is within the scope of the program approved earlier, and

(2) The program EIR adequately describes the activity for the purposes of CEQA.

Note

Authority cited: Sections 21083 and 21087, Public Resources Code; Reference: Section 21003, Public Resources Code; *County of Inyo v. Yorty*, (1973) 32 Cal. App. 3d 795.

Discussion

The program EIR is a device originally developed by federal agencies under NEPA. Use of this approach was recommended for CEQA in the court decision of *County of Inyo v. Yorty* cited in the note.

The detailed description of the permissible uses of this document are provided in an effort to encourage its use. The program EIR can be used effectively with a decision to carry out a new governmental program or to adopt a new body of regulations in a regulatory program. The program EIR enables the agency to examine the overall effects of the proposed course of action and to take steps to avoid unnecessary adverse environmental effects.

Use of the program EIR also enables the Lead Agency to characterize the overall program as the project being approved at that time. Following this approach when individual activities within the program are proposed, the agency would be required to examine the individual activities to determine whether their effects were fully analyzed in the program EIR. If the activities would have no effects beyond those analyzed in the program EIR, the agency could assert that the activities are merely part of the program which had been approved earlier, and no further CEQA compliance would be required. This approach offers many possibilities for agencies to reduce their costs of CEQA compliance and still achieve high levels of environmental protection.

15169. Master Environmental Assessment

(a) General. A public agency may prepare a Master Environmental Assessment, inventory, or data base for all, or a portion of, the territory subject to its control in order to provide information which may be used or referenced in EIRs or Negative Declarations. Neither the content, the format, nor the procedures to be used to develop a Master Environmental Assessment are prescribed by these Guidelines. The descriptions contained in this section are advisory. A Master Environmental Assessment is suggested solely as an approach to identify and organize environmental information for a region or area of the state.

(b) Contents. A Master Environmental Assessment may contain an inventory of the physical and biological characteristics of the area for which it is prepared and may contain such additional data and information as the public agency determines is useful or necessary to describe environmental characteristics of the area. It may include identification of existing levels of quality and supply of air and water, capacities and levels of use of existing services and facilities, and generalized incremental effects of different categories of development projects by type, scale, and location.

(c) Preparation.

(1) A Master Environmental Assessment or inventory may be prepared in many possible ways. For example, a Master Environmental Assessment may be prepared as a special, comprehensive study of the area involved, as part of the EIR on a general plan, or as a data base accumulated by indexing EIRs prepared for individual projects or programs in the area involved.

(2) The information contained in a Master Environmental Assessment should be reviewed periodically and revised as needed so that it is accurate and current.

(3) When advantageous to do so, Master Environmental Assessments may be prepared through a joint exercise of powers agreement with neighboring local agencies or with the assistance of the appropriate Council of Governments.

(d) Uses.

(1) A Master Environmental Assessment can identify the environmental characteristics and constraints of an area. This information can be used to influence the design and location of individual projects.

(2) A Master Environmental Assessment may provide information agencies can use in initial studies to decide whether certain environmental effects are likely to occur and whether certain effects will be significant.

(3) A Master Environmental Assessment can provide a central source of current information for use in preparing individual EIRs and Negative Declarations.

(4) Relevant portions of a Master Environmental Assessment can be referenced and summarized in EIRs and Negative Declarations.

(5) A Master Environmental Assessment can assist in identifying long range, areawide, and cumulative impacts of individual projects proposed in the area covered by the assessment.

(6) A Master Environmental Assessment can assist a city or county in formulating a general plan or any element of such a plan by identifying environmental characteristics and constraints that need to be addressed in the general plan.

(7) A Master Environmental Assessment can serve as a reference document to assist public agencies which review other environmental documents dealing with activities in the area covered by the assessment. The public agency preparing the assessment should forward a completed copy to each agency which will review projects in the area.

Note

Authority cited: Sections 21083 and 21087, Public Resources Code; Reference: Section 21003, Public Resources Code.

Discussion

The Master Environmental Assessment was developed as a way of providing a data base for use with later EIRs. If an agency prepared a Master Environmental Assessment, the agency could reduce the amount of work necessary to prepare later EIRs. The environmental setting would have been fully analyzed, and the likely environmental effects in the area could be anticipated. Thus, the Master Environmental Assessment could help focus initial studies as well as EIRs.

15170. Joint EIR-EIS

A Lead Agency under CEQA may work with a federal agency to prepare a joint document which will meet the requirements of both CEQA and NEPA. Use of such a joint document is described in Article 14, beginning with Section 15220.

Note

Authority cited: Sections 21083 and 21087, Public Resources Code; Reference: Sections 21083.5 and 21083.7, Public Resources Code.

Discussion

This section identifies the joint EIR-EIS as a special type of EIR. This special treatment is appropriate because many unusual steps would be required in order to meet the requirements of NEPA as well as CEQA. These steps may include formal scoping hearings, publication of notice in the Federal Register, and public review of the final EIR-EIS. This section also clearly establishes the validity of this joint document.

APPENDIX F

NOTICE OF PREPARATION

TO: Local. State and Federal Review Agencies

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report

LEAD AGENCY: Tulare County Resource Management Agency
5961 South Mooney Boulevard
Visalia, CA 93277-9394
ATTN: Janet Jiggerian

Tulare County Resource Management Agency will be the Lead Agency and will prepare an environmental impact report (EIR) for the project identified below. We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR prepared by our agency when considering permits or other approvals for related projects.

The project description, location and a summary of the potential environmental effects are contained in the attached materials. A copy of the Initial Study/Enviromental Checklist is attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but ***not later than April 9, 1999***. Please send your response to the contact person and address noted above. We will also need the name for a contact person for your agency.

PROJECT TITLE: Adoption of Phase I of the Animal Waste Management Element of the Tulare County General Plan.

PROJECT LOCATION: Countywide

PROJECT DESCRIPTION (brief): Adoption of Phase I of the Animal Waste Management Element of the Tulare County General Plan which establishes policies and standards for the development and operation of dairies and other bovine animal confinement facilities in the county.

DATE: March 8, 1999 SIGNATURE: _____
Janet Jiggerian

GPA 99-05

Initial Study/Environmental Checklist

1. Project title: Adoption of Phase I of the Animal Waste Management Element of the Tulare County General Plan.

2. Lead agency name and address: Tulare County Resource Management Agency
   5961 South Mooney Boulevard
   Visalia, CA 93277-9394

3. Contact person and phone number: Janet Jiggerian - (559) 732-2171 or
   Jennifer Munn - (559) 733-6291

4. Project location: Countywide

5. Project sponsor's name and address: Tulare County Resource Management Agency
   5961 South Mooney Boulevard
   Visalia, CA 93277-9394

6. General Plan designation: various agricultural designations

7. Zoning: various agricultural designations

8. Description of project: The project involves the adoption of Phase I of the Animal Waste Management Element for incorporation into the Tulare County General Plan. The proposed Element contains policies and standards that specifically address dairies and other bovine animal operations and associated environmental issues. The policies and standards are premised on current scientific data and technology that provide for the strategic siting and operation of such confined animal facilities. Additionally, the policies and standards are reflective of and consistent with State and federal regulations, adopted and proposed.

   It is intended that the policies and standards established herein would provide for the development and operation of dairies and other bovine animal facilities in Tulare County in such a manner that: protects the quality of the environment; safeguards the health, safety and general welfare of the County's residents; and provides for the continuation and growth of the animal related industry.

   Proposed policies are attached to this environmental checklist as Attachment 1.

9. Surrounding land uses and setting: Dairies and other animal confinement operations are permitted in the agricultural areas of the county, subject to the granting of a special use permit.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement): None

CASE NO: AWME (Tulare County)

V. ENVIRONMENTAL IMPACTS CHECKLIST AND DISCUSSION FORM

A. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors marked below may be affected by this project, including at least one effect that is a "Potentially Significant Impact" or "Potentially Significant Impact Unless Mitigated," as indicated by the checklist on the following pages.

X Land Use and Planning	X Hazards
___ Population and Housing	___ Noise
X Geophysical	___ Public Services
X Agriculture	___ Utilities and Service Systems
X Water	___ Aesthetics
X Air Quality	___ Cultural Resources
X Transportation/Circulation	___ Recreation
X Biological Resources	___ Socio-Economic
___ Energy and Natural Resources	X Mandatory Findings of Significance

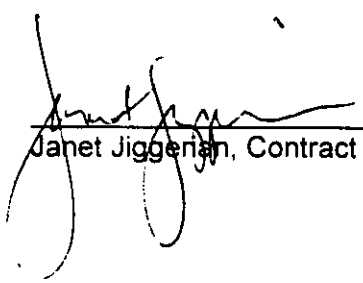
B. DETERMINATION:

ON THE BASIS OF THIS EVALUATION:

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

_ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the attached mitigation measures have been added to the project. A NEGATIVE DECLARATION will be prepared.

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



Janet Jiggerian, Contract Planner

March 3, 1999

Date

CASE NO: _____

C. EVALUATION OF ENVIRONMENTAL IMPACTS:

The following checklist contains an extensive listing of the kind of environmental effects which result from development projects. Evaluation of the effects must take account of the whole action involved, including off-site as well as on site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts, in addition to reasonably foreseeable phases or corollary actions. The system used to rate the magnitude of potential effects is described as follows:

3 points A "Potentially Significant Impact" (3 points) is appropriate if an effect is significant or potentially significant, or if the lead agency lacks information to make a finding of insignificance. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

2 points A "Potentially Significant Impact Unless Mitigated" (2 points) applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact."

1 point A "Less Than Significant Impact" (1 point) means that the environmental effect is present, but is minor in nature and/or not adverse, or is reduced to a level less than significant due to the application and enforcement of mandatory locally adopted standards.

0 points "No Impact" (0 points) indicates that the effect does not apply to the proposed project.

Using this point system, evaluate the likelihood that the proposed project will have an effect in each of the environmental areas of concern listed below. At the end of each category, briefly discuss the project-specific factors, locally adopted standards, and/or general plan elements that support your evaluation. Ratings of 1, 2 or 3 points should always be adequately documented. In general, impacts that are rated with 0 points would not require discussion, however, an explanation may be necessary where circumstances warrant.

D. ENVIRONMENTAL IMPACTS CHECKLIST:

1. LAND USE AND PLANNING - Would the proposal:

3 a. Result in substantial changes from the present or planned land use of the area?

0 b. Conflict with water quality management plans?

0 c. Conflict with habitat conservation plans?

0 d. Conflict with congestion management plans?

0 e. Conflict with air quality plans?

2. POPULATION AND HOUSING - Would the proposal:

0 a. Cumulatively exceed official regional or local population projections?

CASE NO: _____

0 b. Either directly or indirectly induce substantial growth in an area?

0 c. Alter the location, distribution, or density of the area's population?

0 d. Change the demographics of the area?

0 e. Displace or result in the deterioration of existing housing, especially affordable housing?

0 f. Conflict with adopted housing elements?

3. GEOPHYSICAL - Would the proposal result in or expose people to potential impacts involving:

0 a. Seismic fault rupture?

0 b. Seismic ground shaking or liquefaction?

0 c. Seiches (waves along lake and reservoir shorelines)?

0 d. Landslides or mudslides:

2 e. Erosion (wind or water borne), siltation, changes in topography, or unstable soil conditions from excavations, grading or fill?

0 f. Subsidence of the land?

2 g. Compaction, overcovering, or expansive soils?

0 h. Geologic or physical features which are unique or are of cultural value?

3 i. Soil contamination?

4. AGRICULTURE - Would the proposal:

0 a. Affect agricultural resources or operations?

0 b. Result in the loss of unique or prime agricultural land?

3 c. Reduce the acreage of agricultural crops?

5. WATER - Would the proposal result in:

2 a. Changes in absorption rates, drainage patterns, recharge, or the rate and amount of surface runoff?

0 b. Exposure of people or property to water related hazards such as flooding?

3 c. Discharge into surface waters or other alteration of surface water quality?

CASE NO: _____

3 d. Changes in the amount of surface water in any water body?

0 e. Changes in currents, volume, or course of water movements, including flood flows?

3 f. Change in the quantity of groundwater, either through direct additions/ withdrawals, or through interception of an aquifer by cuts/excavations?

3 g. Altered direction or rate of flow of groundwater?

3 h. Degrade groundwater quality?

6. AIR QUALITY - Would the proposal:

3 a. Result in the emission of pollutants or generation of dust (either during and/or after construction)?

3 b. Expose sensitive receptors to pollutants?

0 c. Alter air movement, moisture, or temperature, or cause any change in climate?

3 d. Create objectionable odors?

7. TRANSPORTATION/CIRCULATION - Would the proposal result in:

3 a. Increased vehicle trips or traffic congestion?

3 b. Hazards to safety from design features or incompatible uses?

0 c. Inadequate emergency access or access to nearby uses?

0 d. Insufficient parking capacity on-site or off-site?

0 e. Hazards or barriers for pedestrians or bicyclists?

0 f. Conflicts with adopted policies supporting alternative transportation?

0 g. Rail, waterborne, or air traffic impacts?

3 h. Accelerated deterioration of public and/or private roads?

8. BIOLOGICAL RESOURCES - Would the proposal:

3 a. Impact endangered, threatened or rare species or their habitats?

3 b. Impact locally designated species or natural communities of special concern or importance?

CASE NO: _____

3 c. Affect natural habitat, such as wetlands, riparian areas, etc.?

3 d. Interfere with wildlife dispersal or migration corridors?

3 e. Introduce new species into an area?

9. ENERGY AND NATURAL RESOURCES - Would the proposal:

0 a. Conflict with adopted energy conservation plans?

0 b. Use non-renewable resources in a wasteful and inefficient manner?

0 c. Conflict with future development or existing use of natural resources?

0 d. Use substantial amounts of fuel or energy?

10. HAZARDS - Would the proposal involve:

3 a. A risk of accidental explosion or release of hazardous substances?

0 b. Possible interference with an emergency response plan or emergency evacuation plan?

3 c. The creation of any health hazard or potential health hazard?

3 d. Exposure of people to existing or potential health hazards?

0 e. Increased fire hazard in areas with flammable brush, grass, or trees?

11. NOISE - Would the proposal result in:

0 a. Increases in existing noise levels?

0 b. Exposure of people to severe noise levels?

12. PUBLIC SERVICES - Would the proposal have an effect upon, or result in a need for new or altered government services in any of the following areas:

0 a. Fire protection?

0 b. Police protection?

0 c. Schools?

0 d. Parks or recreational facilities?

3 e. Other government services?

CASE NO: _____

13. UTILITIES AND SERVICE SYSTEMS - Would the proposal result in a need for new systems, extended systems with the capacity to serve new development, or require substantial alterations to the following utilities:

0 a. Electric power or natural gas?

0 b. Communication systems?

0 c. Community water treatment or distribution facilities, including hydrants and fire flow?

0 d. Community sewer or septic tanks?

0 e. Storm water drainage?

0 f. Solid waste disposal?

0 g. Other utility services?

14. AESTHETICS - Would the proposal:

0 a. Affect a scenic vista or scenic highway?

0 b. Change a physical aesthetic feature?

0 c. Create an aesthetically offensive site open to public view?

0 d. Create new sources or intensify existing light or glare?

15. CULTURAL RESOURCES - Would the proposal:

0 a. Disturb important paleontological, archaeological, or historic resources?

0 b. Have the potential to cause a physical change which would affect unique ethnic, cultural, or religious resources?

0 c. Disturb unique architectural features or the character of surrounding buildings?

16. RECREATION - Would the proposal:

0 a. Increase the demand for neighborhood or regional parks or other recreational facilities?

0 b. Affect existing recreational opportunities?

17. SOCIO-ECONOMIC - Would the proposal:

1. Cause temporary or permanent effects upon:

0 a. income distribution?

0 b. employment?

0 c. tax revenues?

2. Cause changes in tax base and assessment for:

0 a. project site?

0 b. surrounding area?

3. Other:

0 a. Disrupt the physical arrangement of an established community?

0 b. Create impacts on social affiliation and neighborhood interaction?

0 c. Create impacts on privacy of surrounding area or residents?

E. MANDATORY FINDINGS OF SIGNIFICANCE:

BASED ON THE FOREGOING ANALYSIS:

YES	NO	
X	___	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?
X	___	Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?
X	___	Does the project have impacts that are individually limited, but cumulatively considerable?
X	___	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

DISCUSSION OF ENVIRONMENTAL IMPACTS:

1.a (Land Use and Planning): Confined animal facilities are considered appropriate in most agricultural areas, however, if an overconcentration of facilities occur or if facilities are established too close to certain types of crops, potential land use conflicts may result.

3.e,g,i (Geology and Soils): Soil erosion or the loss of topsoil may result from development or improvements associated with confined animal facilities. Excessive application of dry or liquefied animal wastes on fields may result in high concentrations of salts, nitrates, phosphorus, potassium, and biologically toxic elements in the soils.

4.c (Agriculture): Construction of dairy improvements or other animal raising facilities may remove cropland from production.

5.a,c,d,f,g,h (Hydrology and Water Quality): Over application of nutrients from animal wastes can leach into the groundwater, causing contamination. Contamination of the groundwater may also result from manure build-up in corrals. Storm water runoff can transport manure-polluted drainage water into surface waters resulting in contamination.

6.a,b,d (Air Quality): Animal waste associated with confined animal operations can impact air quality from the generation of dust and odors. The generation of dust, classified as particulate matter (PM-10 and/or PM-2.5), can be temporary during grading and construction activities, or can result from the confinement of animals. Secondary particles, such as sulfate and nitrates, are formed from photochemical reactions of gaseous sulfur dioxide and nitrogen oxide. Particulate matter 10 microns or less in diameter can be inhaled, passed through the respiratory system, and lodged in the lungs, resulting in health effects.

Odors associated with confined animal operations typically result from wastewater lagoons, manure and ensiled feeds. The more detectable odors include ammonia, hydrogen sulfide and other sulfurous compounds, amines, organic acids and heterocyclic nitrogenous compounds. Odors associated with confined animal operations may result in nuisance.

7.a.b.h (Transportation/Traffic): Establishment of confined animal facilities has the potential to increase truck traffic in areas where roadways are not always planned or developed to handle that type of traffic. Truck traffic may decrease the service life of area roads since they accelerate the decline of the physical condition of the roadways. Generally, on-site and adjacent improvements required through the use permit process should alleviate potential safety issues.

8.a.b.c.d.e (Biological Resources): If appropriate measures are not taken during the siting of confined animal operations, impacts could result to endangered, threatened or rare species, either directly or through habitat modification.

10.a,c,d (Hazards): As noted in Item 5 above, the potential for groundwater and/or surface water contamination can result in a health or safety hazard. Wastewater lagoons and ponds, as well as the accumulation of manure, can become breeding areas for flies and mosquitoes.

12.e (Public Services): As noted in Item 7 above, truck traffic generated by confined animal operations may decrease the service life of area roads by accelerating the decline of the physical condition of roadways which, in turn, results in an impact to the provision of government services, e.g., road maintenance.

Notice of Preparation of DEIR for Tulare County AWME (Phase I)
List of Agencies and Individuals Consulted:

Tulare County Environmental Health Division
Tulare County Agricultural Commissioner
Tulare County Counsel
Tulare County Resource Management Agency -- Roads, Traffic Flood Control
Tulare County Fire Warden
Tulare County Sheriff Department
Tulare County Superintendent of Schools
Tulare County Association of Governments
Tulare County Agricultural Advisory Committee
U.C. Cooperative Extension Service
USDA Natural Resource Conservation Service
Delta Vector Control District
Delano Mosquito Abatement District
Kings Mosquito Abatement District
Tulare Mosquito Abatement District
Regional Water Quality Control Board (Fresno)
Calif Regional Water Quality Control Bd, Central Valley Region (Sacramento)
California Department of Fish and Game, District 4
San Joaquin Valley Unified Air Pollution Control District
Air Resources Board
State of California Reclamation Board
Department of Water Resources
Water Resources Control Board
State of California Department of Conservation
California Department of Food and Agriculture
State Department of Health
CalTrans District 06
State Clearinghouse
U.S. Fish and Wildlife Service
Environmental Protection Agency
Kaweah Delta Water Conservation District
Tulare Lake Basin Water Storage District
Pacific Gas and Electric Co.
Southern California Edison Co.
Allensworth Progressive Association
Pixley Town Council
Cities of Dinuba, Exeter, Farmersville, Lindsay, Porterville, Tulare, Visalia, Woodlake, Delano, Kingsburg
Counties of Kings, Kern, Fresno
Tulare County Farm Bureau
Western United Dairymen (Gary Conover)
Dairyman's Cooperative/Land O' Lakes
California Milk Producers

"Attachment 1" (AWME)

(PROPOSED) TULARE COUNTY
DAIRY/ANIMAL CONFINEMENT FACILITY POLICIES

The following policies apply to dairies and other bovine animal confinement facilities for which a special use permit is required under the Tulare County Zoning Ordinance. In applying these policies, the following definitions are to be referenced:

Animal Confinement Facility. Where used, the term "animal confinement facility" includes animal barns, corrals, or pens; feed (excluding hay barns) and manure storage and handling areas; and wastewater lagoons/sumps. When measuring set-backs and distances between animal facilities, measurements shall be taken from or between the most proximate part of the above-described facilities. Areas used for crop production or not otherwise utilized in the production of animals shall not be included for purposes of determining said setbacks and distances.

Crop Acreage. Irrigable portion of the total/gross subject parcel(s), including wastewater conveyance ditches, that is to be used for wastewater discharge and which excludes buildings, corrals and/or pens, feed and/or manure storage areas, lagoons/sumps, canals, waterways, and public road right-of-ways.

Animal Unit. A common animal denominator, based on feed consumption, whereas one mature cow (1,400 pounds) represents one animal unit, as defined by the Regional Water Quality Control Board. An "ANIMAL UNIT" is the feed equivalent of one milk cow, as follows:

CLASSIFICATION	ANIMAL UNITS PER HEAD
Dairy cows in milk and bulls	1.00
Dry cows and heifers more than two years of age	0.75
Heifers one year to two years (beef or dairy)	0.70
Heifers three months to one year (beef or dairy)	0.40
Calves to three months of age	0.17
Beef cows in milk and feedlot steers	0.75
Horses more than six months of age	0.75
Foals to six months of age	0.50
Sows and boars (200 pounds or more)	0.50
Feeder pigs (less than 200 pounds)	0.20
Sheep and goats	0.17
Poultry	0.02
Ostriches	0.40
Emus and rheas	0.17

LOCATIONAL AND ANIMAL DENSITY POLICIES:

1. A new dairy site shall contain at least 160 acres (gross). Other new animal confinement facility sites shall contain at least 80 acres (gross).

2. The density of animals on a dairy/confined animal raising facility shall be limited to the number whose production of wastes (Nitrogen and Salts) can be utilized by the crops grown on site or hauled off and disposed of so as to not create a pollution problem. Plans shall be submitted that (1) demonstrate that animal wastes are evenly distributed over the entire crop acreage; (2) detail the number of acres of cropland, crops to be grown, and amount of doubled cropped acreage; and (3) indicate the amount of manure to be disposed of off site. Ultimately, the number of animals allowed on a project site shall be based on nitrogen and salt loading rates so that onsite wastewater (including precipitation and drainage) and manure are discharged or applied to crop lands at rates of application that are appropriate for the crop, soil, climate, special local situations, management system, and type of waste product. The Regional Water Quality Control Board shall determine the adequacy of loading rate plans to assure the preceding.

   The following table sets forth possible parameters for the maximum allowable Animal Units (A.U.s) per Crop Acre for different dairy development and operating scenarios that may be utilized for individual dairies:

Animal Housing Type	Cropping Program♣	Solids Disposal Method/Location	Maximum Animal Units per Crop Acre		
			50%N♦	60%N♦	70%N♦
Open corral (all)	Double	Off site (100%)	9.71	8.13	6.71
Open corral (all)	Single	Off site (100%)	6.94	5.78	4.98
Open corral (all)	Double	On site (100%)	5.85	4.85	4.17
Open corral (all)	Single	On site (100%)	4.17	3.47	2.98
Free stall & Open corl♥	Double	Off site (100%)	7.81	6.54	5.59
Free stall & Open corl♥	Single	Off site (100%)	5.59	4.65	4.00
Free stall & Open corl♥	Double	On site (100%)	5.85	4.85	4.17
Free stall & Open corl♥	Single	On site (100%)	4.17	3.47	2.98

ASSUMPTIONS for Ratios for Scenarios between Upper and Lower Parameters:

- ♥ Free stall = 60% milk cows and Open corral = 40% support stock ♥
- ♣ Double cropping based on 350 pounds of Nitrogen utilized per acre and Single cropping based on 250 pounds of Nitrogen utilized per acre (Double crop = 1.4 x Single crop) ♣
- ♦ Percentage of Nitrogen remaining = function of the number of days wastewater has been in the lagoon [>60 days in lagoon = 50% N remains; 30-60 days in lagoon = 60% N remains; <30 days in lagoon = 70% N remains] ♦

However, in all cases, the maximum total animal density on the dairy site shall not exceed ten (10) animal units per crop acre, and the maximum density of cows in milk on site shall not exceed eight (8) per crop acre. For confined animal facilities other than dairies, the maximum on-site density shall not exceed ten (10) animal units per crop acre.

3. The addition of a new dairy/confined animal-raising operation shall not cause the maximum density of total animals to exceed four animal units per gross acre in an area within a one-mile radius from the perimeter of the proposed new animal facility site and for any existing animal operation or any approved animal confinement facility with an active permit within that one-mile area.

4. A new dairy or other animal confinement facility shall not be located as follows: within any Windshed Area for incorporated and unincorporated communities or within the Windsheds for areas zoned for residential use and containing at least thirty (30) dwelling units (for which the Windshed Area shall be measured from the outermost residential zoning boundary) — a 'Windshed Area' is defined as a one-mile setback from an incorporated or unincorporated community's Urban Development Boundary or urban-type residential boundary line; within primary floodplains; within 1000 feet of the boundary of a public park or school grounds; in sink holes or areas draining into sink holes; or within one-half mile (2640 feet) of the nearest point of a dwelling structure in a concentration of ten (10) or more occupied private residences [to qualify as a 'concentration', such residences must be occupied, located within a contiguous area, and exceed a density of one dwelling unit per acre, excluding travel trailers].

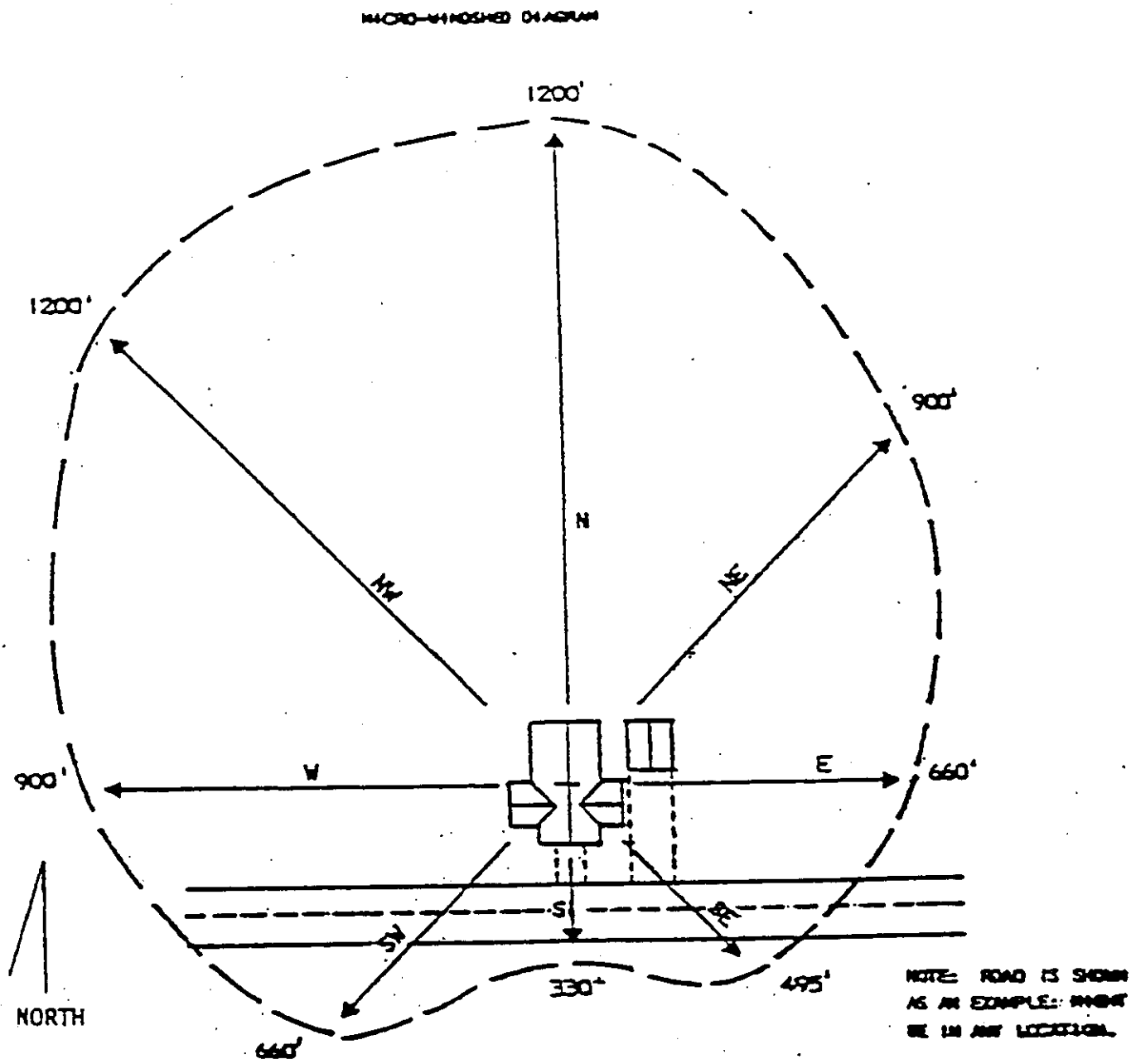
5. A new dairy or other animal confinement facility shall not be located closer than the distances shown on Micro-Windshed Diagram 'A' (Residential) to an occupied dwelling owned by a property owner other than the animal confinement facility site owner/operator or employee.

   A new dairy or other animal confinement facility shall not be located closer than the distances shown on Micro-Windshed Diagram 'B' (Agricultural) to an established citrus grove, vineyard, deciduous fruit/nut orchard, or vegetable agricultural enterprise.

6. New dairy and other animal confinement facilities (animal barns, corrals, and pens; wastewater lagoons/sumps; manure and feed storage areas excluding hay barns) shall be located at least one-quarter mile (1320 feet) from the nearest dairy, swine, or other animal raising facility and at least one-half mile (2640 feet) from the nearest poultry-raising facility. These separations are required to avoid potential nuisance problems, disease transmission, and soil and groundwater contamination, and air quality degradation.

7. These above regulations shall not apply to the repair, maintenance, replacement, and upgrading of a legally-existing dairy or other animal confinement facility, provided that such work does not increase the animal capacity of the facility.

8. Expansions of existing legal nonconforming dairy or other existing legal nonconforming animal confinement facilities that do not meet the policies set forth above will be considered on a case-by-case basis, subject to the Special Use Permit process, provided that the level of nonconformity is not significantly increased. However, no expansions of existing dairy or other animal confinement facilities shall be approved unless they meet the density standards set forth in policies No. 2 and No. 3 above.

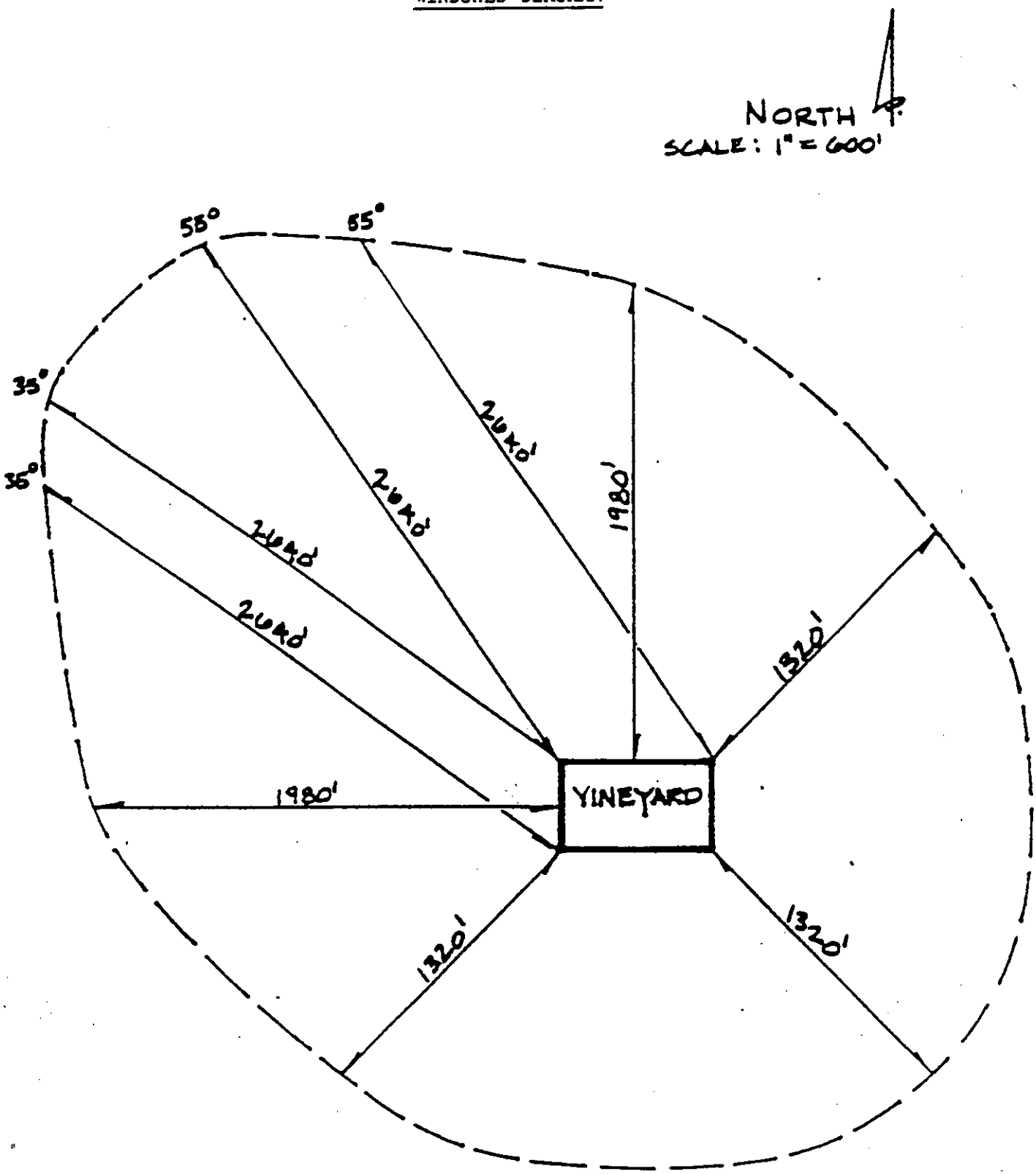


Measurements to be made from the geometric center of dwelling to nearest part of dairy buildings or corrals (not including storage, hay storage, parking, garages or dwellings of dairy workers or family of the owner).

MICRO WINDSHED DIAGRAM

DIAGRAM A

WINDSHED DIAGRAM



Measurements should be made to the property line of the affected parcel from the nearest point of dairy buildings or corrals (does not include storage, hay storage, parking areas, garages, or dwellings of dairy workers and/or family of the owner).

Diagram B

Note: Interpretation by the Tulare County Planning Commission (May 11, 1988)

COMPLIANCE AND MONITORING POLICIES:

1. An Annual Compliance Report (in a form established by Ordinance) shall be completed and filed with the appropriate County agency for every confined animal facility in Tulare County.

2. Compliance inspections shall be conducted on at least 20 percent of dairies each year with priority given to inspecting those dairies that did not submit an Annual Compliance Report, those dairies that exceed their permitted or grandfathered animal density, and other dairies as determined by Ordinance. Every dairy shall be inspected at least once every five years.

3. All dairies shall be subject to the new "Dairy/Animal Confinement Facilities Policies" and shall be brought into compliance within a reasonable period of time.

4. A streamlined administrative permitting procedure shall be developed to facilitate the permitting of legal nonconforming or grandfathered animal facilities.

5. The Dairy/Animal Confinement Facility policies adopted herein shall be reviewed by the Agricultural Advisory Committee every two years, or as need, to determine if modifications and/or updating are necessary. The Committee shall then forward a written report to the Tulare County Board of Supervisors.

California Regional Water Quality Control Board
Central Valley Region
Steven T. Butler, Acting Chair

Winston H. Hickox
Secretary for Environmental Protection

Gray Davis
Governor

Fresno Branch Office
Internet Address: http://www.swrcb.ca.gov/~rwqcb5
3614 East Ashlan Avenue, Fresno, California 93726
Phone (559) 445-5116 • FAX (559) 445-5910

22 April 1999

Ms. Janet Jiggerian
Tulare County Resource Management Agency
5961 South Mooney Boulevard
Visalia, CA 93277-9394

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT REGARDING ADOPTION OF PHASE I OF THE ANIMAL WASTE MANAGEMENT ELEMENT OF THE TULARE COUNTY GENERAL PLAN

Thank you for the opportunity to provide early comments on the environmental impact report that will be prepared by Tulare County. Our comments referenced to specific sections of the subject document are listed below:

1. Reference: "ENVIRONMENTAL IMPACTS CHECKLIST", Section D.1.a..

   Comment: You indicate there could be a "Potentially Significant Impact" from land use changes. We agree, but your discussion of the item does not recognize that new land (land not in cultivation) may be brought into production. This land may include wetland areas or areas of biological significance. The EIR should address potential impacts of bringing new land into production.

2. Reference: "ENVIRONMENTAL IMPACTS CHECKLIST", Sections D.5.a.-h.

   Comment: Your discussion on these items indicates nutrients from animal wastes can leach into the groundwater, causing contamination. We agree. Salts can also leach into groundwater and cause contamination. You also recognize that contamination may result from build-up of manure in corrals. Most corrals have manure for much of the year. The threat relates to the corral's construction and drainage. Corrals have been found to be a significant source of pollutants, particularly when built on coarse soil. Also, the discussion does not recognize that retention ponds are a potential source of contamination. The EIR must address all sources of pollutants and potential for impacts on water resources. It must also address the issue that groundwater may already be impaired and the added load from a proposed confined animal facility may be cause further impairment.

3. Reference: "ENVIRONMENTAL IMPACTS CHECKLIST", Sections D.10.a.,c.,d.

   Comment: Your discussion notes a potential for the ponds to be a hazard with respect to groundwater or surface water contamination, and a potential vector hazard due to excessive numbers of flies and mosquitoes. The discussion should also note that the ponds typically have near vertical side walls, are unfenced, and consequently pose a potential physical hazard.

4. Reference: Attachment 1 "TULARE COUNTY DAIRY/ANIMAL CONFINEMENT FACILITY POLICIES", page 1, "Animal Unit. A common animal denominator, based on feed consumption, whereas one mature cow (1,400 pounds) represents one animal unit, as defined by the Regional Water Quality Control Board."

Comment: Regional Board staff have used several methods for calculating animal units (AUs), all of which are fairly close to the criteria referenced above. The calculation of AUs provides a basis for determining if a waste management plan for a proposed dairy, or expansion of an existing dairy, appears reasonable. Subsequent inspections and monitoring are necessary to determine if the actual operation of the facility has an adverse impact on soils and/or water quality. In some cases, it is the adjustments made to the number of animals and/or operational practices that leads to an operation that minimizes negative impacts to the environment. However, there is a trend toward standardizing design criteria. The U.S. Department of Agriculture (USDA) and the U.S. Environmental Protection Agency (EPA) published "Draft Unified National Strategy for Animal Feeding Operations", dated September 11, 1998, (Draft Regulations). The Draft Regulations indicate that the USDA and EPA will use the 1,000 pound animal unit (AU), although their definitions are slightly different for pork and poultry animal types. Section 3.2 of the Draft Regulations, Comprehensive Nutrient Management Planning (CNMP), indicates that the Natural Resources Conservation Service (NRCS) Field Office Technical Guide is the primary technical reference for the development of CNMPs. Therefore, it may be appropriate for counties and state agencies to consider the use of the 1,000-pound AU as defined by NRCS (Agricultural Waste Management Field Handbook, NRCS, 1996):

Animal Type	No. of Animals	Factor	AU
Slaughter or Feeder Cattle		1.0	
Mature Dairy Cattle		1.4	
Swine over 55 Pounds		0.4	
Sheep or Lambs		0.1	
Horses		2.0	
Laying Hens or Boilers with continuous overflow watering		0.01	
Laying Hens or Boilers with liquid manure handling systems		0.0333	
Turkeys		0.0182	
Ducks		0.02	
		Total	

Central Valley Regional Board staff prepared a series of fact sheets to assist owners and operators in understanding and complying with dairy regulations. Fact Sheet No. 4 uses the following factors in calculating equivalent 1000-pound animal units:

Animal	Factor
Milk Cows	1.0
Dry Cows	0.8
Heifers (2 years and older)	0.73
Heifers (1 year to breeding)	0.73
Calves (3 months to 1 year)	0.35
Baby Calves (<3 months)	0.21

When using the 1000-pound AU and calculating nitrogen and salt loading rates, the number of milk cows is multiplied by a factor of 1.4. Therefore, regardless of the method used (1000-pound or 1400-pound AU), adjustments are made to subsequent calculations so that results are approximately equivalent. Regional Board staff do not recommend any particular method for calculating AUs, but do recognize that standardizing the calculations would cause less confusion among dairy operators, consultants, and regulatory staff.

5. Reference: Attachment 1 "TULARE COUNTY DAIRY/ANIMAL CONFINEMENT FACILITY POLICIES", page 2, "The following table sets forth possible parameters for the maximum allowable Animal Units (AUs) per Crop Acre for different dairy development and operating scenarios that may be utilized for individual dairies:"

   Comment: The table indicates that the maximum allowable AUs per acre ranges from 9.71 to 2.98 depending on: 1) the type of confinement; exclusively open corral, or a combination of open corral and free stalls; and 2) crop management; single crop (250 lb N/ac), or double crop (350 lb N/ac). The allowable AU appear intuitively reasonable, however, all of the assumptions used in deriving the maximum allowable AUs are not provided. To perform a mass balance, all of the assumptions must be provided including: 1) percentage of herd comprised of milk cows; 2) average annual production of nitrogen per milk cow and per other AUs; 3) percentage of nitrogen lost in dry manure; 4) percentage of waste collected in dry and liquid form for each type of operation, free stall and open corral. One should also consider whether there is assimilative capacity in the groundwater for added pollutants.

6. Reference: Attachment 1 "TULARE COUNTY DAIRY/ANIMAL CONFINEMENT FACILITY POLICIES", page 1, first paragraph, "The following policies apply to dairies and other bovine animal confinement facilities for which a special use permit is required under the Tulare County Zoning Ordinance."

   Comment: The reference indicates that the new policies will only apply to dairies and other bovine animal confinement facilities. However, the provided criteria for calculating animal units imply that the policies will apply to a variety of facility types including swine, sheep, poultry, ostriches, and emus.

We hope our comments are constructive. If you have any questions regarding this matter, please contact Cliff Raley at (209) 445-5130.

Lonnie M. Wass

LONNIE M. WASS
Senior Engineer
RCE No. 38917

ECR:ecr

cc: Mr. Ken Landau, Regional Water Quality Control Board, Sacramento

San Joaquin Valley
Unified Air Pollution Control District

April 12, 1999

Janet Jiggerian
TULARE COUNTY
Resource Management Agency
5961 South Mooney Blvd.
Visalia, CA 93277

Subject: **Notice of Preparation of Draft Environmental Impact Report (DEIR) for Adoption of Phase I of the Animal Waste Management Element of the Tulare County General Plan**

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed this Notice of Preparation and has the following comments:

Whereas the District does not have jurisdiction over dairy facilities with regards to odor and/or visible emissions due to exemptions in our Rules and Regulations (Rules 4101 §4.5 and 4102 §3.1) and California Health & Safety Codes §41704(g) and §41705, we are still concerned with the potential for dust emissions and odors. The District does feel that the discussion level your document says will be addressed in your DEIR will be sufficient to inform the public of the potential concerns.

The District recognizes that this comment letter is past the date set by your agency to end receipt of comments. These comments are late due to unforeseen circumstances and if they are too late to be included in your process, please disregard.

The District appreciates the opportunity to comment on this consultation. If you have any questions, please do not hesitate to contact me at (661) 326-6980.

Joe O'Bannon
Environmental Planner, Southern Region

APCD Ref #: S990081

STATE OF CALIFORNIA—THE RESOURCES AGENCY

GRAY DAVIS, Governor

DEPARTMENT OF FISH AND GAME

SAN JOAQUIN VALLEY AND SOUTHERN SIERRA REGION
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4014

April 28, 1999

Ms. Janet Jiggerian
Tulare County Resource
Management Agency
5961 South Mooney Boulevard
Visalia, California 93277-9394

Dear Ms. Jiggerian:

Notice of Preparation for a Draft
Environmental Impact Report For the Adoption of the
Phase I of the Animal Waste Management Element of the
Tulare County General Plan

We have reviewed the Notice of Preparation (NOP) for the Project referenced above. The Project includes establishment of policies and standards for the development and operation of dairies and other bovine facilities in Tulare County. The Department of Fish and Game (Department) is pleased to see that Tulare County is expending the time, energy, and expense to deal with dairy impacts comprehensively. We believe that this will streamline future dairy permitting as well as reducing dairy impacts to wildlife resources.

As both a Trustee agency with regard to wildlife resources and as a regulatory agency with regard to projects that affect endangered species and resources associated with lakes and streams, we offer the following comments on diary impacts to wildlife and our recommendations on the scope and content of this Environmental Impact report (EIR).

Common Dairy Project Impacts to Wildlife Resources

Loss and/or Degradation of Habitat: Lands that are currently in a native or naturalized state very often provide good wildlife habitat and may support sensitive species and other wildlife. Native plants including listed or rare species could occur on these lands. Conversion of native or naturalized sites (such as native pasture or rangeland) to dairy facilities and cultivated agriculture for disposal of dairy wastewater could significantly reduce their value for wildlife. Conversion of native pasture or rangeland can be cumulatively significant.

Loss or Degradation of Vernal Pools and Other Wetlands: Vernal pools and other wetlands are becoming increasingly rare in California and the Department supports a no-net-loss policy for projects that could affect wetlands. We typically recommend against approval of projects that would cause disturbance to functional vernal pools or other wetlands. Projects that do go forward on sites where wetlands occur must have appropriate authorizations from the United States Army Corps of Engineers (US ACOE), and in some cases, the United States Fish and Wildlife Service (USFWS).

Injury or Mortality to Listed Species: Construction of dairy facilities could result in the entombment or entrapment of burrowing animals. Animals could be hit by vehicles used for dairy construction and vehicles used for on-going dairy operations. Native plant populations occurring on dairy sites would be lost once lands are developed and/or cultivated. If the dairy site is prone to flooding, off-site resources could be affected by dairy-related inundation and pollution.

Interference with Animal Movement/Migration Patterns: Dairy facilities that block or constrict daily and seasonal wildlife movement corridors could affect wildlife on and near the site.

Interference with the Activities of Night-active Wildlife: Dairy facilities usually have outdoor lighting. Lighting can disrupt the foraging activities of night-active species. Lighted facilities adjacent to wildlife preserve areas, riparian habitat or other native lands would be particularly disruptive to night-active wildlife.

Loss and/or Degradation of Riparian Habitat: Riparian habitat has declined in California to the point where it is quite rare. Often the greatest wildlife diversity in an area is associated with riparian habitat making its preservation important from a resources standpoint. Projects that result in removal of, or disturbance to riparian habitat can have substantial impact on wildlife resources. If the development of a dairy or wastewater disposal lands could affect riparian habitat it should be considered to have an affect on wildlife. If project-related flood control activities include removal of riparian vegetation, then the project should be considered to have an impact on wildlife resources.

Degradation of Water Quality In Rivers, Streams, and Lakes: To the extent that a dairy project could cause increased erosion

into streams or lakes or cause discharge of dairy wastewater or accidental discharge of other dairy waste into streams or lakes, they could be considered to have a potential effect on wildlife resources.

Flood Related Pollution: Dairies located in flood-prone areas could cause pollution to off-site resources especially if the dairy is located in close proximity to sensitive resources, natural lands or lands otherwise being managed for wildlife.

Cumulative Impacts: While the impacts of dairies discussed above can often be mitigated for an individual dairy, the effects of numerous dairies in an area could be cumulatively significant resulting in the long term of losses of large areas of habitat, and higher levels of pollution.

Baseline Information That Should be included in the EIR:

Maps of all lands currently permitted for dairies and other confined bovine animal facilities including wastewater disposal lands. Facility footprints and waste-disposal lands should be separately identified.

Maps of all lands permitted for dairies and other confined bovine animal facilities that are permitted and operational including wastewater disposal lands. Facility footprints an wastewater disposal lands should be identified separately.

Total currently permitted animal units (by type of animal).

Total currently existing animal units (by type of animal).

Total current permitted acreage by animal, facility footprint and wastewater properties.

Total existing acreage by animal, facility footprint and wastewater properties.

Impacts that Should be Evaluated in the EIR

Loss and/or degradation of Natural Lands, Vernal Pools, Other Wetlands, and Riparian Habitat: The EIR should identify all natural lands occurring in the County where dairies and other confined animal facilities could be permitted under the adopted standards and guidelines. These lands should be mapped and maps provided in the EIR and the acreage disclosed in the document.

An acreage estimate of total lands that could be permitted should also be provided. Of particular interest to the Department are lands along on the Cottonwood Creek Corridor (which include natural lands vernal pools, other wetlands, riparian habitat, and protected species) natural lands in the Cairnes Corner area, Creighton Ranch, Natural Lands in the Allensworth Area and lands near Department-managed Ecological Reserves.

Impacts to State and Federally-listed Species: The EIR should identify known locations of listed species that could be affected by dairy development and expected impacts on these species form dairy development. We understand that Tulare County has the results of species and habitat surveys conducted during the development of the Tulare County Habitat Conservation Plan. The results of these surveys should be provided in the EIR. We can provide additional information regarding listed species occurrences listed in the California Natural Diversity Data Base (CNDDB) and locations of Department-managed Ecological Reserves at your request. Attached is a list of State- and/or Federally-listed species and other sensitive species know to occur in Tulare County.

Flooding and Flood-related Pollution: Based on visual observations made by Department staff, we believe that at least some level of contamination of vernal pools on State-owned lands have resulted from periodic flooding of dairy sites in the Cottonwood Creek area. We recommend that the EIR include any records that the California Regional Water Quality Control Board (CRWQCB) and/or other regulatory agency might have regarding effectiveness of existing regulations in preventing dairy waste from contaminating off-site resources. We would also like to know how often dairies are inspected for compliance with CRWQCB regulations, or other agency regulations, regarding prevention of dairy-related contamination of off-site resources, and percentage of dairies that currently fail to comply with those regulations. We would also like to know what studies were done to determine the effectiveness of existing regulations. Should studies not be available, we will recommend that studies be conducted and the results provided in the EIR.

Cumulative Effects: The EIR should provide an analysis of the cumulative effects of dairy build-out allowed under the approved standards and guidelines.

Suggested Mitigation Measures for Dairy Impacts

Avoidance of sensitive resources is generally the best way to mitigate effects of any project. For a dairy this means:

Locating project features at least 100 feet away from stream banks, lakes and riparian habitat.

Locating project features where they will not affect vernal pools or other wetlands. Appropriate buffers should be of sufficient width to protect any watershed into vernal pools and other wetlands. The project should also be designed to assure that dairy waste or wastewater will not be discharged into these areas either through normal operations or during flood events. Compliance with existing CRWQCB regulations should not be considered adequate mitigation unless the EIR demonstrates that these regulations have been documented to be effective.

Dairy facilities should be located as far as possible from any off-site sensitive resources. Project-related lighting should be minimized and directed away from sensitive areas.

Dairy projects on flood-prone areas should be designed so that sensitive resources on the site and all lands off of the site will not be inundated with dairy waste or wastewater during flood events. Compliance with existing CRWQCB regulations should not be considered adequate mitigation unless the EIR demonstrates that these regulations have been documented to be effective.

Activities Requiring the Department to be a Responsible Agency

Streambed Notification and Permits: Because of the results of a recent court decision, the Department is now a Responsible Agency with permitting authority regarding actions that affect streams and/or lakes, if such actions could impact wildlife resources (Fish and Game Code Sections 1600 et. seq.). If County standards and guidelines for dairy permits include mitigation measures that would be required for a typical dairy project affecting a stream, the Department may be able to streamline future environmental review for dairy projects that require notification and permitting. For additional information on notification and permitting requirements please contact Mr. Ed Armstrong at (559) 243-4017.

Endangered Species Take Authorizations: Projects that could result in the "take" of State- or Federally-listed species must obtain appropriate authorization from the Department for State-

listed species and the USFWS for Federally-listed species. These authorizations usually require strict "take" avoidance measures as well as mitigation habitat and funding for management of the mitigation lands. If Lead Agency environmental review is not complete for a project, the Department may require preparation of additional environmental documentation (possibly preparation of an EIR) prior to issuing an endangered species "take" authorization.

Other Permits and Authorizations: Dairy facilities are also regulated by the CRWQCB and often by the US ACOE. Both of these agencies typically consult separately with the Department before granting their respective project authorizations. If the Department is satisfied with the results of the local project review and mitigation measures, we will be able to provide a more rapid response for these agencies. Should a dairy project result in the loss of vernal pools or wetlands the US ACOE often requires significant amounts of mitigation including replacement and recreation of lost wetlands. We recommend that if the County plans on permitting dairies on sites that contain wetlands, the EIR should disclose the mitigation that would likely be required and identify locations where mitigation could be accomplished.

Information the Department Needs to Evaluate a Dairy Project: The Department can evaluate a dairy project most quickly if the project application contains the following information. We recommend that the County standards and guidelines for dairies include provisions to include this information in completed applications for diary Conditional Use Permits:

Location of dairy footprint and all wastewater disposal sites.

Locations of lakes, streams and drainages on or near the site.

Location and extent of riparian habitat on the site. It may be necessary for a qualified biologist to make this determination. Riparian habitat should be identified on the project site plan.

Location and extent of sensitive resources occurring on the site. It may be necessary for a qualified biologist to make this determination. Sensitive resources and habitats on the site should be identified on the project site plan. Should vernal pools or other wetlands be identified on the site they should be formally delineated and the delineation verified by the US ACOE or Natural Resources Conservation Service (NRCS).

Flood information for the site.

Site use history back to 1985. For lands that are currently under cultivation the project applicant should be able to show a history of site use for cultivated agriculture or other use that would limit site use for wildlife (crop records, aerial photographs, verification from the NRCS, etc.). If the site has been converted to cultivated agriculture after 1985, then the applicant may be requested to provide evidence that the site did not contain wetlands (old aerial photographs, soil or geological information, etc.) or endangered species habitat. If evidence exists that the proposed dairy site recently contained wetlands or supported listed species then the project applicant may be asked to show that proper authorization was obtained from the USFWS and/or the US ACOE prior to conversion of the site.

References for General Plan Policies, Area Habitat Conservation Plans or other documents that would show that cumulative impacts of dairies have been locally addressed.

We look forward to reviewing your Draft EIR. If you have any questions regarding these comments please contact Ms. Donna Daniels, Environmental Specialist III, at the address or telephone number provided on this letterhead.

Sincerely,

for Dale McFarland

William E. Loudermilk
Acting Regional Manager

Attachment

cc: California Regional Water
Quality Control Board
Central Valley Region
3614 East Ashlan Avenue
Fresno, California 93726

United States Army
Corps of Engineers
Central Valley Office
1325 J Street
Sacramento, California 95814-2922

United States Fish and
Wildlife Service
3310 El Camino, Suite 130
Sacramento, California 95821

California Department of Fish and Game
Natural Diversity Data Base

List of Elements and Status by Scientific Name

Tulare County

Scientific/Common Name	Federal/ State Status	Global/ State Rank	CNPS/ R-E-D	CDFG Status
ABRONIA ALPINA *RAMSHAW MEADOWS ABRONIA*	Candidate/ None	G1/ S1.1	1B/ 3-3-3	
ACCIPITER COOPERII (NESTING) *COOPER'S HAWK*	None/ None	G4/ S3		SC
ACCIPITER GENTILIS (NESTING) *NORTHERN GOSHAWK*	Species of Concern/ None	G4/ S3		SC
AMBYSTOMA CALIFORNIENSE *CALIFORNIA TIGER SALAMANDER*	Candidate/ None	G2G3/ S2S3		SC
ARABIS BODIENSIS *BODIE HILLS ROCK CRESS*	Species of Concern/ None	G1/ S1.3	1B/ 2-1-2	
ARABIS DISPAR *PINYON ROCK CRESS*	None/ None	G3/ S2.3	2/ 2-1-1	
ARDEA HERODIAS *GREAT BLUE HERON*	None/ None	G5/ S4		
ASPLENIUM SEPTENTRIONALE *NORTHERN SPLEENWORT*	None/ None	G3G4/ S2.3	2/ 3-1-1	
ASTRAGALUS LENTIGINOSUS VAR KERNENSIS *KERN PLATEAU MILK-VETCH*	None/ None	G5T3?/ S2.2?	2/ 2-2-1	
ASTRAGALUS SHEVOCKII *SHEVOCK'S MILK-VETCH*	None/ None	G2/ S2.3	1B/ 3-1-3	
ATHENE CUNICULARIA (BURROW SITES) *BURROWING OWL*	Species of Concern/ None	G4T2/ S2		SC
ATRIPLEX CORDULATA *HEARTSCALE*	Species of Concern/ None	G2?/ S2.2?	1B/ 2-2-3	

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List of Elements and Status by Scientific Name

Scientific/Common Name	Federal/ State Status	Global/ State Rank	CNPS/ R-E-D	CDFG Status
ATRIPLEX MINUSCULA *LESSER SALTSCALE*	None/ None	G1Q/ S1.1	1B/ 3-3-3	
ATRIPLEX PERSISTENS *PERSISTENT-FRUITED SALTSCALE*	None/ None	G1/ S?	/	
BATRACHOSEPS SIMATUS *KERN CANYON SLENDER SALAMANDER*	Species of Concern/ Threatened	G2/ S2		
BATRACHOSEPS SP 4 *KERN PLATEAU SLENDER SALAMANDER*	None/ None	G2/ S2		
BIG TREE FOREST	None/ None	G3/ S3.2		
BOTRYCHIUM CRENULATUM *SCALLOPED MOONWORT*	Species of Concern/ None	G3/ S1.2	1B/ 2-1-2	
BRANCHINECTA LYNCHI *VERNAL POOL FAIRY SHRIMP*	Threatened/ None	G2G3/ S2S3		
BRODIAEA INSIGNIS *KAWEAH BRODIAEA*	Species of Concern/ Endangered	G2/ S2.2	1B/ 2-2-3	
BUTEO SWAINSONI (NESTING) *SWAINSON'S HAWK*	None/ Threatened	G4/ S2		
CALOCHORTUS STRIATUS *ALKALI MARIPOSA LILY*	Species of Concern/ None	G2/ S2.2	1B/ 2-2-2	
CALOCHORTUS WESTONII *SHIRLEY MEADOWS STAR-TULIP*	Species of Concern/ None	G1/ S1.2	1B/ 3-2-3	
CAULANTHUS CALIFORNICUS	Endangered/	G1/	1B/	

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List of Elements and Status by Scientific Name

Scientific/Common Name	Federal/ State Status	Global/ State Rank	CNPS/ R-E-D	CDFG Status
CENTRAL VALLEY DRAINAGE HARDHEAD/SQUAWFISH STREAM	None/ None	G?/ S?		
CHAMAESYCE HOOVERI *HOOVER'S SPURGE*	Threatened/ None	G2/ S2.2	1B/ 3-2-3	
CHARADRIUS ALEXANDRINUS NIVOSUS (NESTING) *WESTERN SNOWY PLOVER*	Threatened/ None	G4T2/ S2		SC
CLARKIA SPRINGVILLENSIS *SPRINGVILLE CLARKIA*	Proposed Threatened/ Endangered	G1/ S1.1	1B/ 3-2-3	
CLARKIA XANTIANA SSP PARVIFLORA *KERN CANYON CLARKIA*	None/ None	G5T1/ S1.2	1B/ 3-2-3	
CLEMMYS MARMORATA *WESTERN POND TURTLE*	Species of Concern/ None	G4/ S3		SC
CUPRESSUS ARIZONICA SSP NEVADENSIS *PIUTE CYPRESS*	None/ None	G5T2/ S2.2	1B/ 2-2-3	
CYPSELOIDES NIGER (NESTING) *BLACK SWIFT*	None/ None	G4/ S2		SC
DELPHINIUM INOPINUM *UNEXPECTED LARKSPUR*	None/ None	G3/ S3.2	1B/ 2-2-3	
DELPHINIUM RECURVATUM *RECURVED LARKSPUR*	Species of Concern/ None	G2/ S2.2	1B/ 1-2-3	
DESMOCERUS CALIFORNICUS DIMORPHUS *VALLEY ELDERBERRY LONGHORN BEETLE*	Threatened/ None	G3T2/ S2		
DIPODOMYS NITRATOIDES NITRATOIDES *TIPTON KANGAROO RAT*	Endangered/ Endangered	G3T1/ S1		

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Scientific/Common Name	Federal/ State Status	Global/ State Rank	CNPS/ R-E-D	CDFG Status
DRABA SHARSMITHII *MT. WHITNEY DRABA*	None/ None	G1/ S1.3	1B/ 3-1-3	
DUDLEYA CYMOSA SSP COSTAFOLIA *PIERPOINT SPRINGS DUDLEYA*	Species of Concern/ None	G5T2/ S2.2	1B/ 3-2-3	
EMPIDONAX TRAILLII (NESTING) *WILLOW FLYCATCHER*	None/ Endangered	G5/ S1S2		
ERIGERON AEQUIFOLIUS *HALL'S DAISY*	None/ None	G2/ S2.3	1B/ 3-1-3	
ERIGERON INORNATUS VAR KEILII *KEIL'S DAISY*	None/ None	G5T1/ S1.2	1B/ 2-2-3	
ERIGERON MULTICEPS *KERN RIVER DAISY*	Species of Concern/ None	G1/ S1.2	1B/ 3-2-3	
ERIOGONUM BREEDLOVEI VAR SHEVOCKII *THE NEEDLES BUCKWHEAT*	None/ None	G3T3/ S3.3	4/ 1-1-3	
ERIOGONUM NUDUM VAR MURINUM *MOUSE BUCKWHEAT*	Species of Concern/ None	G5T2/ S2.2	1B/ 2-2-3	
ERIOGONUM TWISSELMANNII *TWISSELMANN'S BUCKWHEAT*	Species of Concern/ Rare	G2/ S2.2	1B/ 2-2-3	
ERIOGONUM WRIGHTII VAR OLANCHENSE *OLANCHA PEAK BUCKWHEAT*	None/ None	G5T1/ S1.3	1B/ 3-1-3	
ERYNGIUM SPINOSEPALUM *SPINY-SEPALED BUTTON-CELERY*	Species of Concern/ None	G2/ S2.2	1B/ 3-2-3	
ERYTHRONIUM PUSATERII *KAWEAH FAWN LILY*	None/ None	G2/ S2.3	1B/ 3-1-3	

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Scientific/Common Name	Federal/ State Status	Global/ State Rank	CNPS/ R-E-D	CDFG Status
FRITILLARIA BRANDEGEI *GREENHORN FRITILLARY*	None/ None	G2/ S2.2	1B/ 1-2-3	
FRITILLARIA STRIATA *STRIPED ADOBE-LILY*	Proposed Threatened/ Threatened	G2/ S2.1	1B/ 3-3-3	
GAMBELIA SILA *BLUNT-NOSED LEOPARD LIZARD*	Endangered/ Endangered	G1/ S1		
GREAT VALLEY VALLEY OAK RIPARIAN FOREST	None/ None	G1/ S1.1		
GULO GULO LUTEUS *CALIFORNIA WOLVERINE*	Species of Concern/ Threatened	G4T2/ S2		
GYMNOGYPS CALIFORNIANUS *CALIFORNIA CONDOR*	Endangered/ Endangered	G1/ S1		
HACKELIA SHARSMITHII *SHARSMITH'S STICKSEED*	None/ None	G3?/ S3.3	2/ 2-1-1	
HORKELIA TULARENSIS *KERN PLATEAU HORKELIA*	Species of Concern/ None	G1/ S1.3	1B/ 3-1-3	
HYDROMANTES PLATYCEPHALUS *MOUNT LYELL SALAMANDER*	Species of Concern/ None	G3G4/ S2S3		SC
LASTHENIA GLABRATA SSP COULTERI *COULTER'S GOLDFIELDS*	Species of Concern/ None	G4T3/ S2.1	1B/ 2-3-2	
LEPIDURUS PACKARDI *VERNAL POOL TADPOLE SHRIMP*	Endangered/ None	G2G3/ S2S3		
LEWISIA DISEPALA *YOSEMITE LEWISIA*	None/ None	G2/ S2.3	1B/ 2-1-3	

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Scientific/Common Name	Federal/ State Status	Global/ State Rank	CNPS/ R-E-D	CDFG Status
LINANTHUS SERRULATUS *MADERA LINANTHUS*	None/ None	G1/ S1?	1B/ 2-2-3	
LUPINUS LEPIDUS VAR CULBERTSONII *HOCKETT MEADOWS LUPINE*	None/ None	G5T1/ S1.3	1B/ 3-1-3	
LUPINUS PADRE-CROWLEYI *FATHER CROWLEY'S LUPINE*	Species of Concern/ Rare	G1/ S1.2	1B/ 3-2-3	
LYTTA HOPPINGI *HOPPING'S BLISTER BEETLE*	Species of Concern/ None	G1G2/ S1S2		
LYTTA MOESTA *MOESTAN BLISTER BEETLE*	Species of Concern/ None	G2/ S2		
LYTTA MOLESTA *MOLESTAN BLISTER BEETLE*	Species of Concern/ None	G2/ S2		
MARTES AMERICANA *PINE MARTEN*	None/ None	G3G4/ S3S4		SC
MARTES PENNANTI PACIFICA *PACIFIC FISHER*	Species of Concern/ None	G3G4/ S2S3		SC
MASTICOPHIS FLAGELLUM RUDDOCKI *SAN JOAQUIN WHIPSNAKE*	Species of Concern/ None	G5T2?/ S2?		SC
MIMULUS NORRISII *KAWEAH MONKEYFLOWER*	None/ None	G2/ S2.3	1B/ 3-1-3	
MIMULUS PICTUS *CALICO MONKEYFLOWER*	None/ None	G2/ S2.2	1B/ 2-2-3	
MONARDELLA BENEOLENS	None/	G1/	1B/	

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Scientific/Common Name	Federal/ State Status	Global/ State Rank	CNPS/ R-E-D	CDFG Status
MONARDELLA LINOIDES SSP OBLONGA *FLAX-LIKE MONARDELLA*	Species of Concern/ None	G5T2/ S2.3	1B/ 3-1-3	
NAVARRETIA SETILOBA *PIUTE MTNS. NAVARRETIA*	Proposed Threatened/ None	G1/ S1.1	1B/ 3-3-3	
NEMACLADUS TWISSELMANNII *TWISSELMANN'S NEMACLADUS*	Species of Concern/ Rare	G1/ S1.2	1B/ 3-2-3	
NORTHERN CLAYPAN VERNAL POOL	None/ None	G1/ S1.1		
NORTHERN HARDPAN VERNAL POOL	None/ None	G3/ S3.1		
ONCORHYNCHUS MYKISS AGUABONITA *VOLCANO CREEK GOLDEN TROUT*	Species of Concern/ None	G5T1/ S1		SC
ONCORHYNCHUS MYKISS WHITEI *LITTLE KERN GOLDEN TROUT*	Threatened/ None	G5T2/ S2		
ORCUTTIA INAEQUALIS *SAN JOAQUIN VALLEY ORCUTT GRASS*	Threatened/ Endangered	G2/ S2.1	1B/ 2-3-3	
OREONANA PURPURASCENS *PURPLE MOUNTAIN-PARSLEY*	None/ None	G3/ S3.2	1B/ 2-2-3	
OVIS CANADENSIS CALIFORNIANA *CALIFORNIA BIGHORN SHEEP*	Species of Concern/ Threatened	G4T1/ S1		
PEROGNATHUS INORNATUS INORNATUS *SAN JOAQUIN POCKET MOUSE*	Species of Concern/ None	G4T2T3 / S2S3		
PHACELIA NASHIANA	Species of	G3/	1B/	

California Department of Fish and Game
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List of Elements and Status by Scientific Name

Scientific/Common Name	Federal/ State Status	Global/ State Rank	CNPS/ R-E-D	CDFG Status
PHACELIA NOVENMILLENSIS *NINE MILE CANYON PHACELIA*	Species of Concern/ None	G2/ S2.2	1B/ 3-2-3	
PSEUDOBAHIA PEIRSONII *SAN JOAQUIN ADOBE SUNBURST*	Threatened/ Endangered	G2/ S2.1	1B/ 2-3-3	
RAILLARDIOPSIS MUIRII *MUIR'S RAILLARDELLA*	None/ None	G2/ S2.3	1B/ 2-1-3	
RANA BOYLII *FOOTHILL YELLOW-LEGGED FROG*	Species of Concern/ None	G3/ S2S3		SC
RIBES TULARENSE *SEQUOIA GOOSEBERRY*	Species of Concern/ None	G2/ S2.2	1B/ 3-1-3	
SCAPHIOPUS HAMMONDII *WESTERN SPADEFOOT*	Species of Concern/ None	G3?/ S3?		SC
SIDALCEA KECKII *KECK'S CHECKERBLOOM*	Proposed Endangered/ None	G1/ S1.1	1B/ 3-3-3	
SOUTHERN INTERIOR CYPRESS FOREST	None/ None	G2/ S2.1		
SPHENOPHOLIS OBTUSATA *PRAIRIE WEDGE GRASS*	None/ None	G5/ S1.2	2/ 2-1-1	
STRIX NEBULOSA (NESTING) *GREAT GRAY OWL*	None/ Endangered	G5/ S1		
SYCAMORE ALLUVIAL WOODLAND	None/ None	G1/ S1.1		
TRIFOLIUM MACILENTUM VAR DEDECKERAE *DEDECKER'S CLOVER*	None/ None	G?T2/ S2.3	1B/ 3-1-3	

California Department of Fish and Game
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List of Elements and Status by Scientific Name

Scientific/Common Name	Federal/ State Status	Global/ State Rank	CNPS/ R-E-D	CDFG Status
TUCTORIA GREENEI *GREENE'S TUCTORIA*	Endangered/ Rare	G2/ S2.2	1B/ 2-3-3	
VALLEY SACATON GRASSLAND	None/ None	G1/ S1.1		
VALLEY SALTBUSH SCRUB	None/ None	G1/ S2.1		
VALLEY SINK SCRUB	None/ None	G1/ S1.1		
VIOLA PINETORUM SSP GRISEA *GREY-LEAVED VIOLET*	None/ None	G4G5T1 / S1.3	1B/ 3-1-3	
VULPES MACROTIS MUTICA *SAN JOAQUIN KIT FOX*	Endangered/ Threatened	G4T2T3 / S2S3		
VULPES VULPES NECATOR *SIERRA NEVADA RED FOX*	Species of Concern/ Threatened	G4T2T3 / S1		

For your brighter tomorrow

COUNTY OF TULARE
Health & Human Services Agency
Health • Human Services • Mental Health

Ronald W. Probasco
HHSA Director

ENVIRONMENTAL HEALTH SERVICES

April 8, 1999

JANET JIGGERIAN
RESOURCE MANAGEMENT AGENCY
5961 SOUTH MOONEY BLVD
VISALIA CA 93277-9394

Re: Notice of Preparation (NOP) of a Draft Environmental Impact Report - Animal Waste Management Element, Tulare County General Plan

Dear Ms. Jiggerian:

We have reviewed the references NOP, and have the following comments to offer regarding entries on the ENVIRONMENTAL IMPACTS CHECKLIST:

5. WATER

a. Rate plus amount of surface run off?

Dairies should be required to have a primary solids lagoon and secondary liquid lagoon.

h. Degrade water quality?

It is recommended that dairies install monitoring wells to assess potential groundwater contamination. Minimal requirements should be the sampling for nitrate and nitrite. The number of wells should be a minimum of one (1) up gradient from the facility and two (2) down gradient from the lagoons.

13. UTILITIES AND SERVICE SYSTEMS

f. Solid waste disposal?

Dairies should be encouraged to minimize their general solid waste stream other than the conventional solid waste generated by dairy operation. They should be mandated to increase their recycling effort by segregating their general solid waste by providing separate bins. Arrangements should be made with solid waste pick up services to make this approach feasible.

5957 S. Mooney Blvd. Visalia, CA 93277 (559) 733-6441 FAX 733-6932

14. AESTHETICS

c. Create an aesthetically offensive site open to the public view?

From the standpoint of public relations, dairies should be encouraged to be more concerned about aesthetics. Those fronting main roads and avenues should be encouraged to have screening provided, such as bushes, trees, or fencing, for those activities or specific confinement facilities which can be considered as unsightly to the general public.

Sincerely,

Jan A. Krancher
Environmental Health Specialist
Environmental Health Services Division

JAK:jp

Michael W. Alburn
Manager

Eva F. Garcia
Office Manager

DELTA VECTOR CONTROL DISTRICT

Post Office Box 310 • Visalia, California 93279-0310
1737 West Houston Avenue • Visalia, California 93291
Telephone (559) 732-8606 • FAX (559) 732-7441
E-mail: deltavcd@aol.com

Richard A. Loop
Superintendent

Yolanda M. Barriga
Biologist

April 9, 1999

Tulare County Resource Management Agency
5961 South Mooney Boulevard
Visalia, CA 93277-9394

ATTN: Janet Jiggerian

RE: Notice of Preparation of a Draft Environmental Impact Report

Ms. Jiggerian:

The Delta Vector Control District thanks you for the opportunity to assist in your preparation of a Draft EIR for the Tulare County Animal Waste Management Element. Today, Tulare County is the nation's number one milk producing county. With the industry anticipating the number of dairy cows to double over the next twenty years (Exhibit 1), the timeliness and importance of the project are understood. Residential development is increasing its encroachment in and around agricultural areas, which frequently produce huge mosquito populations. These factors will increase the Districts burden to provide necessary mosquito and fly control, to entitled individuals who live in these areas.

The District's statutory responsibility is to provide for the protection of public health, from disease and discomfort, associated with flies and mosquitoes. Responsible design review, prior to the construction of animal confinement facilities, will reduce the potential of creating permanent conditions conducive to the production of mosquito and fly populations. This will greatly assist our efforts in reducing the vector population and its opportunity to cause disease and intolerable annoyance, to the residents of Tulare County.

Failure to adequately address the problems of waste management will enlarge and make more productive the habitats of flies and mosquitoes of public health and economic importance. The consequences of improving and expanding available habitat for flies and mosquitoes will be evident in the health and vitality of the citizenry, livestock, domestic animals, real estate and recreational interests of Tulare County.

The District utilizes approximately twenty percent of its fiscal budget inspecting, contacting growers, treating, and reducing habitat for flies and mosquitoes at numerous animal confinement facilities. The greatest of these expenditures occurs in major breeding sources that are created by improperly managed manure and wastewater, on existing permitted or grandfathered facilities.

As the industry continues to grow, we do not anticipate revenues to increase proportionally. These factors will substantially compromise the Districts ability to sustain the current level of control efforts, or to implement any additional control measures as the result of growth. Based on recent estimates, the population of Tulare County is also expected to increase during the next twenty-year period of time. It is safe to project, the cost of maintaining the current level of public health protection will swell to between forty and forty-five percent of available revenues, over the next twenty years if conditions remain status quo in and around the wastewater lagoons of animal confinement facilities.

Because no mosquito or vector control district is in place to protect approximately one third of the County, the Draft EIR must address waste management practices of animal confinement facility operators with extreme scrutiny, especially with regard to vector producing activities. Not only to insure interests in that portion of the County are not jeopardized, but also to the extent possible, to reduce encroachment by flies and mosquitoes into district boundaries where tax dollars are being spent to control such.

The *Culex tarsalis* mosquito is one of the most prevalent of all the mosquitoes of California, and by instinct feeds upon wild birds and domestic fowl. In the absence of sufficient avian populations, they will feed on cattle, horses and humans. Immatures of this species do in fact breed in the wastewater lagoons of animal confinement facilities. The District has trapped this species in the adult stage (Exhibit II), at a variety of wastewater lagoons in Tulare County.

Infectious encephalitis refers to an inflammation of the brain caused by a living agent. Our concern is with the types classified as Western Equine and St. Louis virus. These viruses are almost 100% mosquito-borne and *Culex tarsalis* is the main vector.

The southern house mosquito, *Culex pipiens quinquefaciatus*, is so named because it readily enters houses and bites indoors. It thrives in urban areas and is closely associated with human activities and dwellings. The larvae of this species can tolerate extremely foul or polluted waters, and flourishes in dairy wastewater lagoons. Adult mosquitoes have been found infected with encephalitis virus in California and they are considered to play a secondary role in the transmission of St. Louis encephalitis.

Encephalitis virus exists primarily as an infection of birds, transmitted by mosquitoes. Grain and other feed available at animal confinement facilities attracts many species of birds, which may become infected. House sparrows (*Passer domesticus*), pigeons (*Columba livia*), scrub jays (*Aphelocoma coerulescens*), American goldfinches (*Carduelis tristis*), robins (*Turdus migratorius*), catbirds (*Dumetella carolinensis*), flickers (*Colaptes auratus*), mockingbirds (*Mimus polyglottos*), starlings (Sturnus vulgaris), Brewer blackbirds (Euphagus cyanocephalus), red wing blackbirds (Agelaius phoeniceus), and meadowlarks (*Sturnella neglecta*) are all potential amplifying hosts.

Improperly managed wastewater lagoons (i.e., floating vegetative masses, improper solid separation, ineffective vegetation management) are an attractant to many bird species as nesting sites and to *Culex tarsalis* and *Culex pipiens quinquefasciatus* (The Southern House Mosquito) mosquitoes as breeding sites (Exhibit III). The potential

for significant virus amplification and human exposure is available when management practices are not sufficient.

The ability to utilize an Integrated Pest Management (IPM) control effort is based on long-term prevention of disease or nuisance through a combination of techniques such as biological control, habitat manipulation, and modification of cultural practices.

The most effective management technique in controlling the mosquito population on animal confinement facilities is to first eliminate habitat conducive to mosquito breeding. If such breeding does occur, it is imperative that the ability to treat and destroy immature larval populations prior to adult emergence is available. This requires adequate access around the entire perimeter of the lagoon, an effective vegetation management plan, effective solid separation and prevention of vegetated masses on the lagoon bottom or surface floatage. With these conditions in place our ability to implement an effective IPM approach toward the control of these mosquito species is enhanced. This effectively reduces the impact on the environment by lowering the amount of chemicals used for control of immature and adult mosquitoes.

Wastewater lagoons choked with vegetation prevent natural conditions from occurring (i.e., wave action, lack of harborage from predatory insects, etc.), which are unfavorable to mosquito breeding. Inefficient solid separation promotes vegetation, by allowing highly organic materials (i.e., manure, grain, etc.) to enter wastewater lagoons. When chemical treatments become necessary, these conditions hinder effectiveness, by limiting the availability of certain chemicals and application methods, which can be utilized. This may result in chemical treatments that adversely affect beneficial, non-target organisms and the environment.

Adult mosquito control (performed with ULV equipment, fixed wing and rotary aircraft) is expensive, labor intensive, largely ineffective, and exposes the public and environment to chemicals and compounds unnecessarily. Yet this is the only method available to districts when it becomes impractical to treat immature stages, because of mismanagement of wastewater lagoons.

Domestic fly populations are yet another vital component that should be considered when addressing animal waste management. Of most concern are domestic flies, which have the potential to adversely affect the health and well being of humans. Flies can become major pests and are capable of spreading dysentery, infectious hepatitis, anthrax, and many other disease pathogens. Each fly may carry as many as 6 million bacteria on its feet.

It has long been acknowledged that fly control programs, which depend solely on adult eradication through the use of pesticides, either by public or private control agencies, are costly, impractical, and ineffective. Fly control programs which emphasize an educational, advisory approach, focused on reducing and eliminating fly sources, have proven to be most successful and long lasting.

To achieve this level of success and duration, cooperation between public agencies and private industry is paramount. Industries, which by their nature contribute to fly propagation, must assume the responsibility to effectively manage fly breeding

sources, created through the course of operation, in order to achieve optimum fly control in the region.

Sanitation, combined with proficient waste management is still the most effective method of controlling flies. Mangers and flush lanes should be scraped on a weekly basis to prevent manure accumulation. Corrals maintenance should be continuous to prevent heavy build up of moisture and organic matter in any one area. The combined concentration of manure and urine beneath calf pens should be regularly removed, in order to prevent fly population density of enormous proportions.

Insisting that owners and agents of animal confinement facilities responsibly manage animal waste, with consideration and regard to mosquito and fly production, is the only way to insure the public will continue to enjoy the quality of life free of nuisance and disease, of which it has become accustom.

It must be noted that the District does not have the authority to act prior to a nuisance being present. Abatement is available in the Health and Safety Code only after a nuisance is occurring. This process is slow and, in the midst of a potential disease threat, would prove inefficient. Further, while the District does have the ability to abate and perform the necessary work required to eliminate the conditions conducive to mosquito/fly production once a nuisance is occurring, available reserves would not be adequate beyond limited efforts.

When mosquito and fly populations are present in sufficient numbers to produce intense annoyance and distress to humans and animals it is recognized as a public health problem. Public health, more than the mere absence of disease includes the right to an environment free of mental and physical discomforts that destroy its positive values. We appreciate the opportunity to work toward protecting and enhancing the environment of our constituency.

The Delta Vector Control District is available to provide additional information, resources and consultation on this topic, to those who have concerns.

Respectfully,

Michael W. Alburn
Manager

Visalia Times-Delta, Mar 15, 1979

Prince sees prosperous dairy future

Executive cites demand for cheese, milk

Staff reports

TULARE — Land O' Lakes executive Jack Prince said that by 2020, Tulare County could have as many as 600,000 dairy cows, double the current number.

"I think this area has the propensity to grow," Prince said at the annual Tulare Farmer of the Year luncheon Wednesday. "I think we have an extremely good future ahead of us."

Prince, senior vice president of dairy foods for the western region of Land O' Lakes, said the industry has little on the horizon to cause any setbacks.

He told the gathering of civic leaders and farmers that within 20 years, California dairy production would amount to 34 percent of the U.S. total.

Today, Tulare County is the nation's leading dairy county, with more than 300,000 cows providing 21 percent of the milk produced in the state.

Prince said that in the future there will be fewer dairies, but they will be larger.

"We've seen that over the past few years, and we expect to see that trend continue," he said. By 2020, he said, the United States will need 8 million cows to keep up with demand.

Jack Prince

Prince said the trend toward larger but fewer cooperatives will mean dairymen will have to be more educated as to which of them offers the best service. And, he said, cooperatives will have to become more market-driven.

"In a year, I see just three major cooperatives in California," he predicted.

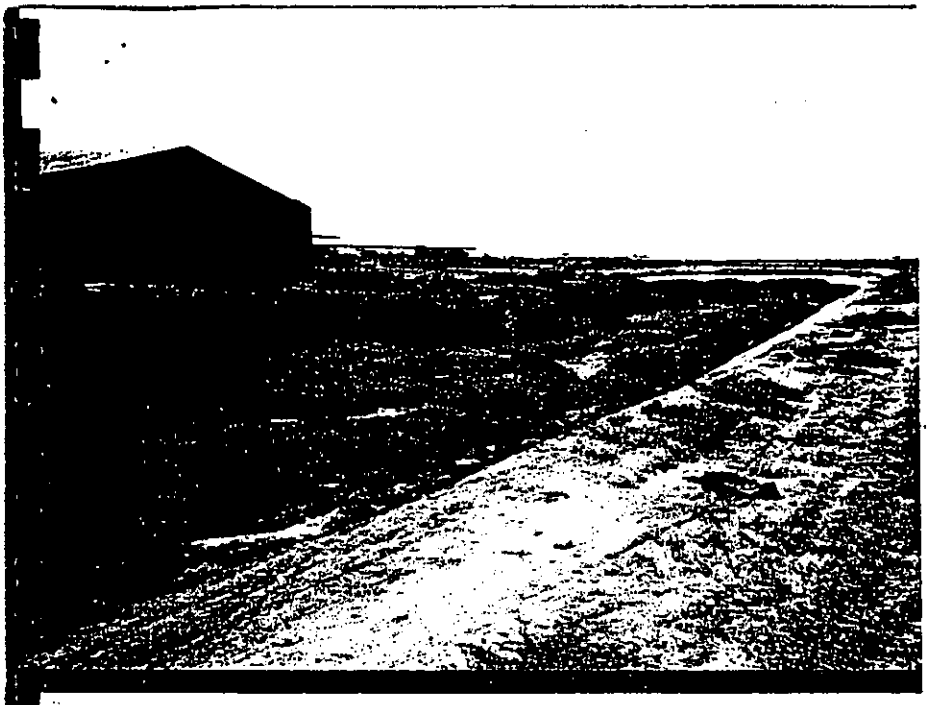
Fueling the demand for milk products is a growing taste for cheese, Prince said.

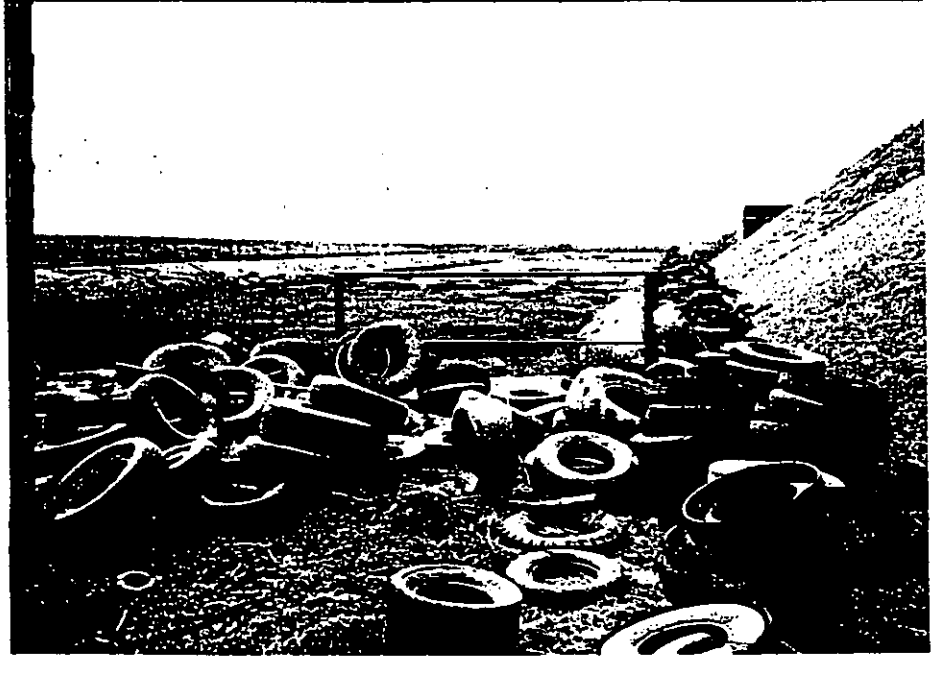
Exhibit II

HISTORIC DAIRY SITE CO_2 TRAP CAPTURE DATA
1994 THROUGH 1998

DATE	LOCATION	MOSQUITO SPECIES	# MOSQUITOES
10/13/98	Shirk Dairy	Culex quinquefaciatus	357
9/29/98	Sweeney Dairy	Culex quinquefaciatus	100
		Culex tarsalis	14
9/23/97	Gerben Leyendekker Dairy	Culex quinquefaciatus	29
		Culex tarsalis	11
10/15/96	Gerben Leyendekker Dairy (3 trap sights)	Culex tarsalis	5493
		Culex quinquefaciatus	71
10/15/96	Nick Leyendekker Dairy (AKA Holstein Farms)	Culex tarsalis	609
		Culex quinquefaciatus	10
9/17/96	Gerben Leyendekker Dairy	Culex tarsalis	143
		Culex quinquefaciatus	32
9/17/96	Periera Dairy	Culex quinquefaciatus	119
10/10/95	Jacobus DeGroot Dairy	Culex quinquefaciatus	248
10/10/95	Frank Bosman Dairy	Culex quinquefaciatus	125
10/10/95	Diepersloot Dairy (currently B & D Dairy)	Culex quinquefaciatus	51
10/3/94	Vanderham Dairy	Culex quinquefaciatus	429
		Culex tarsalis	36
10/3/94	Gerben Leyendekker Dairy	Culex tarsalis	95
		Cules quinquefaciatus	64
10/3/94	Red Rose Dairy	Culex quinquefaciatus	101
		Culex tarsalis	3
9/12/94	Gerben Leyendekker Dairy	Culex tarsalis	84
		Cules quinquefaciatus	24
9/12/94	Frank Leyendekker Dairy	Culex tarsalis	15
		Culex quinquefaciatus	5

Exhibit III





Tulare Mosquito Abatement District
District Headquarters: Mefford Field - Tulare
P.O. Box 1476 - Tulare CA 93275 -1476
PH (559) 686 - 6628 - FAX (559) 686 - 2013

MANAGER
Marshall Norgaard

March 18, 1999

ATTN: JANET JIGGARIAN
5961 SOUTH MOONEY BLVD
VISALIA CA 93277-9394

SUBJECT: Review "Notice of Preparation of a Draft Environmental Impact Report"

The enclosed comments are being forwarded following our review of the, Notice of Preparation of a Draft Environmental Impact Report, you sent to our District on March 8, 1999.

It is our understanding these comments will be used to formulate Phase I of the Animal Waste Management Element of the Tulare County General Plan. From your request for review we understand Phase I is to incorporate an Annual Compliance Report for all dairy operations County wide and an Ordinance would be adopted to specify the criteria required for compliance.

Our District is looking forward to a program that would elicit improved operations County wide of Dairy Waste Water Facilities. We are well aware of the increasing role the California Water Quality Control Board has taken in dealing with waste water discharge from dairies. Phase I will serve to support their effort in dealing with this problem in a consistent manner.

Our District's ability to control mosquitoes would benefit from any effort to improve waste water handling in bovine animal confinement facilities in Tulare County. The District's objective to minimize disease and nuisance problems associated with mosquitoes depends on a comprehensive program to deal with dairymen and other agencies concerned with dairy waste water in our District.

Marshall Norgaard, Manager

Enclosures - Review, Preparation of a Draft Environmental Impact Report

Map showing Tulare Mosquito Abatement District boundaries

Tulare Mosquito Abatement District

Review: Preparation of a Draft Environmental Impact Report

ENVIRONMENTAL IMPACTS CHECKLIST

10. a. c.

Our primary concern in creating an effective "Annual Compliance Report" for Dairy / Animal Confinement Facilities is operational management of waste water associated with these confinement facilities. Dairy waste water is a prime breeding source for the "*Culex*" mosquito, a common carrier of the Encephalitis virus. Dairy waste water facilities that are left unkempt with heavy weed growth and solid build up induce unacceptable mosquito breeding and therefore introduce greater chances of Encephalitis outbreaks and nuisance problems associated with adult mosquitoes.

Our District incurs heavy cost in attempting to adequately control mosquitoes when dairy waste water facilities are poorly managed at any given Dairy / Animal Confinement Facility. Poorly maintained facilities result in higher counts of mosquito larva collected from these sites and higher adult mosquito counts from light traps maintained by the District located near the breeding sites. This is also confirmed by citizen complaints of adult mosquitoes as a nuisance factor.

We would recommend the following requirements be incorporated into the Ordinance which establishes criteria for Dairy / Animal Confinement operations in accordance with the proposed Annual Compliance Report.

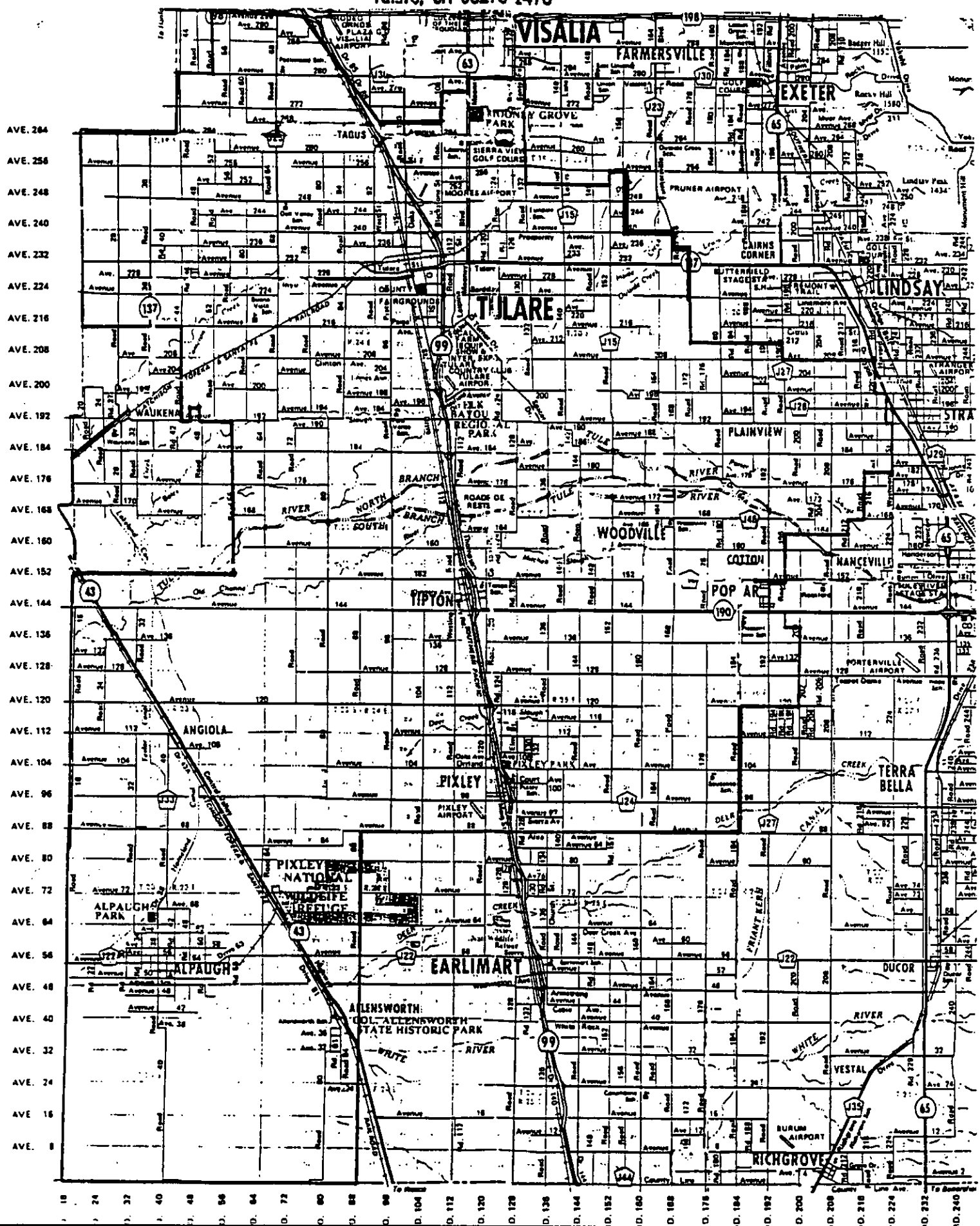
1) A proper access road around dairy waste water holding ponds is available for spray treatment vehicles.

2) Banks around dairy waste water holding ponds and access road are maintained weed-free to prevent blockage of spray material.

3) Main dairy waste water pond is free of excessive floatage to prevent blockage of spray material.

Incorporation of this criteria will mitigate potential mosquito control problems associated with waste water from Dairy / Animal Confinement Facilities. If the criteria is not met health, nuisance problems and increased cost to provide mosquito control will occur.

Tulare Mosquito Abatement Dist.
P. O. Box 1476
Tulare, CA 93275-1476



Kings
Mosquito Abatement District

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Hanford, California
93232

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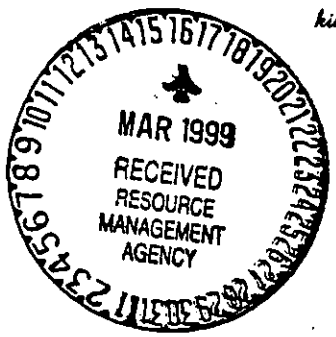
March 15, 1999



Tulare County Resource Management Agency
5961 South Mooney Boulevard
Visalia, CA 93277-9394

Dear Ms. Jiggerian:

RE: Adoption of Phase I of the Animal Waste Management Element of the Tulare County General Plan.

The Kings Mosquito Abatement District appreciates the opportunity to comment on the above mentioned report. It is our District's responsibility to provide the residents of Kings County, and a portion of Tulare County, with an environment free of nuisance or the disease risks associated with mosquitoes. Currently, our agency encompasses over 550 square miles which includes approximately 32 square miles in Tulare County. As you are aware, the dairy industry is a prominent sector within our agency's jurisdiction.

While our agency believes that a properly designed and maintained dairy would benefit any community; an improperly designed and poorly maintained dairy has the potential to create nuisance and health hazards for the surrounding residents. Therefore it is imperative that Tulare County include measures in this report that will mitigate the health hazards and in the long-term benefit both the dairy industry and the local community.

As long as dairies have operated in the San Joaquin Valley the wastewater produced by the operations have presented many challenges for mosquito control agencies such as ours. Of specific concern are the wastewater lagoons which store the manure water until used for irrigation, or recycled to flush barn and corral lanes. It is critical that management of wastewater be done in accordance with the principles that prevent mosquito breeding. The following recommendations will address the essential elements of wastewater management.

First, all dairy wastewater systems should be required to include a solids separation system that will keep suspended matter from the primary storage lagoon. This is essential in order to eliminate floating mats which provide shelter for mosquito larvae, from the primary lagoon. Secondly, access lanes must be provided to allow accessibility for maintenance and vector control equipment to all areas of both separator and primary lagoons. Also, no fence is to be permitted between the lagoons and access lane. Third, all areas of the primary lagoons and separator ponds are to be kept weed-free. This includes access lanes, interior lagoon walls, lagoon floor and surface. Any vegetation at the lagoons will provide larvae shelter in which to breed and make it more difficult to get pesticide applications into the target area. Finally, any wastewater used for irrigation should not be allowed to stagnate for more than four days. This will eliminate field breeding sites.

Should Tulare County include the preceding recommendations in the report, and implement a compliance monitoring program, there would be two direct benefits. First, the mosquito-borne health risks associated with dairy wastewater would be practically eliminated. Second, the amount of pesticides required to control mosquitoes and other vectors at the dairy sites would be dramatically reduced.

I have included a copy of the dairy wastewater requirements which we presently use here in Kings County for your review. Please call my office if you have any questions or concerns, or if I may be of any other assistance.

Sincerely,

Gary Byde, Assistant Manager

Enclosure

DAIRY WASTEWATER REQUIREMENTS

1. Wastewater holding ponds shall not exceed 150' in width.

2. All dairy wastewater holding and solid separator ponds shall be surrounded by lanes at least twenty feet in width and nothing (i.e., calf pens, utility lines, hay stacks, silage, tires, ag equipment, etc.) shall be placed in the area of the holding ponds which would prevent passage or use of vector control equipment.

3. Any fencing placed around the wastewater and solids ponds shall be placed on the outside of the twenty foot lanes and gates provided for access.

4. All interior banks of holding and separation ponds shall be graded 1:1 or steeper for the first ten feet, soil type permitting, but not greater than 1:2.

5. All wastewater designs shall include a solids separation system. If separator ponds are the exclusive means of solids removal, two or more separator ponds are required. These ponds shall not be more than sixty feet in width.

6. No drainage lines shall by-pass the separator ponds, except those which provide for normal corral run-off. All such drain inlets must be sufficiently graded to prevent solids accumulation in the holding ponds.

7. Floatage of any solid substance which could provide harborage for immature mosquito stages shall be kept out of all wastewater holding ponds.

8. The owner shall be responsible for keeping vegetative growth from all areas of the wastewater and solids separation ponds. This includes access lanes, interior pond embankments, and any weed growth that might become established on the pond surface.

9. Dairy wastewater discharged for irrigation purposes shall be managed so it does not stand for more than four days.

10. Any deviations desired from these requirements must be submitted to the District for prior review and approval.

California Milk Producers

A MILK MARKETING COOPERATIVE

April 7, 1999

Tulare County Resource Management Agency
5961 South Mooney Boulevard
Visalia, CA 93277-9394
ATTN: Janet Jiggerian

Dear Ms. Jiggerian

I am responding on behalf of California Milk Producers regarding your notice dated March 8, 1999 on the adoption of Phase I of the Animal Waste Management Element of the Tulare County General Plan.

After reviewing the eight (8) point policy outlined in "Attachment 1" (AWME), we take exception to point 3 where you establish a maximum density of four animal units per gross acre within a one-mile radius from the perimeter of another dairy facility.

We suggest that you eliminate this proposal and allow the facility to be self-contained in accordance with the (nutrient loading capacity) provisions of point 2.

Our association will be monitoring your progress and may provide other recommendations before the implementation process is complete.

Larry Collar, Producer Quality Assurance, will be our contact representative. He can be reached at his office (752- 5216) or cellular (737-0817). Our fax number is 752-5201.

Sincerely,

Ed Galvan

Ed Galvan
Executive Vice President
Producer Relations

MAIN OFFICE: 11709 East Artesia Blvd. □ Artesia, California 90701 □ (562) 865-1291
MAILING ADDRESS: P.O. Box 6210 □ Artesia, California 90702 □ FAX (562) 860-8633
TIPTON OFFICE: 11894 Avenue 120 □ Tipton, California 93272-0837 □ (209) 752-5200
MAILING ADDRESS: P.O. Box 837 □ Tipton, California 93272-0837 □ FAX (209) 752-5201

Department of Community Development & Services

Michael R. Unser
Director
(209) 782-7460

March 12, 1999

Tulare County Resource Management Agency
5961 South Mooney Boulevard
Visalia CA 93277-9394

Attention: Janet Jiggerian

Re: NOP/DEIR - Phase I Animal Waste Mgt. Element

Dear Ms. Jiggerian:

The City of Porterville Planning Division has reviewed the Environmental Initial Study/Checklist prepared for the proposed Animal Waste Management Element. Review of the proposed policies associated with the Element indicates future implementation of the policies will be generally mitigatory in nature. City Staff concurs with the proposed policy prohibiting location of new dairies, or other animal confinement facilities, within one mile of the city's Urban Development Boundary ((Item #4 of "Attachment 1") (AWME)).

The only comment City Staff has to offer is a suggestion to show Items c and d of Category 14 (AESTHETICS) of the Environmental Checklist as "Potentially Significant" impacts (3 points). The reasoning behind this suggestion lies in the fact that new dairies and animal confinement facilities are commonly developed with bright security lighting and said facilities may not be considered aesthetically pleasing by the general population.

Sincerely,

Ronald J. Mauck, AICP
City Planner

RJM:gs

Memorandum

DATE: March 9, 1999

TO: Jennifer Munn, RMA Planning

FROM: Mike Whitlock, RMA Engineering

RE: Animal Waste Management Element, NOP

CC: Janet Jiggerian, Contract Planner

Thank you for the opportunity to review the Notice of Preparation (NOP) of a Draft Environmental Impact for the adoption of Phase I of the Animal Waste Management Element (AWME) of the Tulare County General Plan. As stated in the NOP, the AWME will establish policies and standards for the development and operation of dairies and other bovine animal confinement facilities sited in the County.

The Initial Study/Environmental Impacts Checklist identified potentially significant impacts related to the accelerated deterioration of public roads and as a result the inability of government services to adequately provide for necessary road maintenance. We certainly concur with this assessment and encourage the AWME to consider policies which when implemented will alleviate the impacts of project related road damage.

However, in your discussion of environmental impacts, namely #7.a,b,h (Transportation/Traffic) you appeared to elude to the special use permit process as being a vehicle in place to adequately address project related road impacts. Past experience in processing special use permits for dairy facilities indicates that these project related road impacts have in fact not been alleviated. Therefore, we encourage through the preparation of the AWME that policies and standards be established to adequately address project related road impacts.

Should you require additional information, please contact me at extension 4381. Thank you for your attention to this matter as we look forward to working with you in finding solutions to this problem.

cc: Richard Brogan, Road Commissioner

DEPARTMENT OF JUSTICE
State of California
Attorney General

BILL LOCKYER

1515 CLAY STREET, 20TH FLOOR
OAKLAND, CA 94612-1413

Public: 510-622-2100

Facsimile: 510 622-2270
510 622-2137

April 6, 1999

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

Roberto Brady, Project Planner
Tulare County Resource Management Agency
5961 S. Mooney Blvd.
Visalia, CA 93277

DeLicia Wynn
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

RE: (Proposed Dairies and Feedlot Expansion in Tulare County)
SCH ##

Dear Mr. Brady and Ms. Wynn:

This letter contains the comments of the Attorney General of the State of California regarding the proposed 3,600.8 animal unit Airosa Dairy Establishment (PSP 98-055/SCH # 98101013), the 5,000 animal unit Costa/Gemmer Dairy Establishment (PSP 97-068/SCH # 99021086), the 4,398 animal unit Van Der Poel Feedlot Expansion (PSP 98-081/SCH # 99021003), the 5,910 animal unit Minaberry Dairy Establishment (PSP 98-112/SCH # 99021007), the 2,107 animal unit Boertje Dairy Expansion (PSP 98-115/SCH # 99021043), and the 3,800 animal unit De Boer Dairy Establishment (PSP 98-118/SCH # 99021076), each located in Tulare County. The Tulare County Resource Management Agency ("TCRMA") has approved the first three projects pursuant to Negative Declarations.

The Attorney General submits these comments pursuant to his independent constitutional, common-law, and statutory authority to represent the public interest. Along with other State agencies, the Attorney General has the power to protect the natural resources of the State from pollution, impairment, or destruction. (See Cal. Const., art. V, § 13; Cal. Gov. Code, §§ 12511, 12600-12; *D'Amico v. Board of Medical Examiners* (1974) 11 Cal.3d 1, 14-15.) These comments are made on behalf of the Attorney General and not on behalf of any other California agency or office.

This letter focuses on major concepts and concerns and is not an exhaustive discussion of all issues.

COMMENTS

The Legislature enacted the California Environmental Quality Act ("CEQA"), Public Resources Code sections 21000 et seq., to "[e]nsure that the long-term protection of the environment shall be the guiding criterion in public decisions," (Pub. Res. Code, § 21001(d)), and intended CEQA "to be interpreted in such a manner as to afford the fullest possible protection to the environment . . . ." (*No Oil, Inc. v. City of Los Angeles* (1974) 13 Cal.3d 68, 83, quoting *Friends of Mammoth v. Board of Supervisors* (1972) 8 Cal.3d 247, 259.) The Environmental Impact Report or "EIR" is the "heart of CEQA . . . ." (Cal. Code of Regs., tit. 14, § 15003(a);[1] *City of Carmel-by-the Sea v. Board of Supervisors* (1976) 183 Cal.App.3d 229, 241.) Most importantly, the purpose of the EIR is to "demonstrate to an apprehensive citizenry that the agency has in fact analyzed and considered the ecological implications of its actions." (*No Oil, supra,* 13 Cal.3d at p. 86; see also *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376.)

Under CEQA, the agency must determine through the Initial Study whether the project " may cause a significant effect on the environment." (Cal. Code. Regs., tit. 14, § 15063(b)(1)(A), (B) (emphasis added).) "[W]henever it can be fairly argued on the basis of substantial evidence that the project may have a significant environmental impact, (*No Oil, Inc., supra,* 13 Cal.3d at p. 75), then a negative declaration is inappropriate and the law requires an EIR. (*Friends of "B" street, supra,* 106 Cal.App.3d at p. 1002.)

Because of the importance of the EIR for public education and input, the need to gather and present information relevant to a project's possible environmental effects, the proper consideration of those effects, and where feasible, the mitigation of adverse impacts, the threshold for required preparation of an EIR is low. (*Friends of "B" Street v. City of Hayward* (1980) 106 Cal.App.3d 988; see Pub. Res. Code, §§ 21002, 21002.1(b), 21081(a).)[2] In fact, even

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[1]The CEQA Guidelines are published in title 14 of the California Code of Regulations, sections 15000 et seq. and are binding on all state and local agencies.

[2]For example, in *Friends of "B" Street, supra,* 106 Cal.App.3d at p. 1003, the court found that an EIR was necessary as a matter of law where a proposed street improvement project would generally disrupt the area during construction, cause the removal of 153 trees, and increase traffic and congestion.

if the record contains substantial evidence that the project will not have a significant environmental impact, an EIR must be prepared if it can also be fairly argued that the project may have a significant environmental impact. (*Heninger v. Board of Supervisors* (1986) 186 Cal.App.3d 601, 605-606.) Thus, an agency must determine whether the evidence supports a claim of a projects significant environmental effect regardless of any evidence denying such an effect.

CEQA requires consideration of possible environmental effects. Of course, any project must agree to abide by all permitting requirements and health and environmental regulations, even in the absence of CEQA. Accordingly, "[a] condition requiring compliance with environmental regulations is a common and reasonable mitigating measure." (*Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 308.) The agency cannot, however, assume that such a condition will render recognized and otherwise possibly significant environmental impacts insignificant. Such a rule would make CEQA irrelevant and redundant. Rather, the lead agency must review the applicant's specific plans and independently determine whether or not the applicant's plans will lead to compliance. (*Sundstrom, supra,* 202 Cal.App.3d at pp. 308-309.) To make this assessment, the lead agency must have "meaningful information reasonably justifying an expectation of compliance." (*Sundstrom, supra,* 202 Cal.App.3d at p. 308.) Environmental compliance must be more than "likely"; it must be expected. (See *Azusa Land Reclamation Company v. Main San Gabriel Basin Watermaster* (2nd Dist. 1997) 52 Cal.App.4th 1165, 1204 (finding by lead agency that proposed mitigation measures "would likely" achieve compliance with governing water quality standards not sufficient.))

CEQA is not merely a double check of the project proponent's ability to meet other legal obligations. For example, even if the State Water Resources Control Board requires a permit for the project, CEQA requires a discussion of the potential impacts of the permitted discharges, particularly, as here, where the discharges could result in cumulative impacts in association with existing, proposed, and projected projects in the local area. With or without the permit, the project has the potential to create ground and surface water problems. Such effects must be identified and discussed before the decision-makers and the public can fully assess the potential environmental impact.

The determination of non-significance set forth in the initial studies for many of the potential impacts of the proposed dairy projects apparently rely on compliance with non-CEQA requirements. In fact, that reliance is primarily only implied, as the negative declarations state that no mitigation is required at all. CEQA review requires more. Without consideration of

environmental effects of the potential impacts, CEQA review is incomplete. Some of the potentially significant impacts are briefly discussed below.

Environmental Impacts

The potential of dairy and feedlot waste to harm the environment, particularly through contamination of soil and water, is well recognized. (See, e.g., *Barthelemy v. Chino Water Basin Municipal Water District* (4th Dist. 1995) 38 Cal.App.4th 1609, 1613 (discussing contamination of Chino basin groundwater caused by stockpiling and application of manure to land.)) Waste from dairy and cattle feedlot operations "is not merely an annoyance to olfactory sensibilities, but a serious threat to the quality of the water ...." (See *Barthelemy, supra,* 38 Cal.App.4th at p. 1612.) In addition, these particular projects have the potential to harm endangered and threatened species, and to have significant cumulative environmental effects, as set forth below.

Surface Water and Groundwater Contamination:

1. Waste Spreading. "Reclaimed" dairy wastewater and/or dry animal wastes will be applied to surrounding agricultural land. The draft negative declarations for Airosa Dairy Establishment, the Costa/Gemmer Dairy Establishment, and the Van Der Poel Feedlot Expansion clearly recognize the potential for pollution that such spreading of dairy wastes creates. The sections of the negative declarations that address Geophysical and Water effects state: "Excessive application of dry or liquified animal wastes on fields may result in high concentrations of salts, nitrates, phosphorus, potassium, and biologically toxic elements" in the soil and groundwater.

TCRMA has determined that the potential for contamination of soil and groundwater through application of animal waste to the ground is not significant because total on-site animal density would be under the maximum prescribed by the Tulare County Dairy/Animal Confinement Facility Policies, and because the projects will be required to employ proper management techniques for waste disposal in accordance with the same Policies and California Code of Regulations, title 27, sections 22560-22565, "Confined Animal Facilities Regulations," as administered by the California Regional Water Quality Control Board. No other mitigation measures are specified, nor is there any demonstration that compliance with the regulations cited is expected and that compliance will actually prevent the pollution that the projects may cause.[3]

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[3]That requiring compliance with environmental regulations and/or policies will not necessarily satisfy the requirements of CEQA is demonstrated by examination of the application

2. Runoff and Flooding. Each project also may contaminate surface water through facility runoff caused by rain. Again, the negative declarations acknowledge this possible pollution: "If the site is not properly leveled or contoured, rain may cause runoff of manure-polluted water" into surface waters, adjacent properties, and onto County roads, and could result in large puddles of contaminated water developing on the dry lot portions of the facilities."

TCRMA has determined that "[t]his effect is not significant because of Regional Water Quality Control Board Regulations which require that the facility contain all operational wastewater and precipitation runoff which comes into contact with feed and manured area except that resulting from a storm exceeding a 25-year, 24-hour frequency. Discharge resulting from a greater storm is required to be controlled and not impact beneficial uses of the receiving waters." There is no showing that the projects will actually comply with this requirement. The negative declaration contains no discussion of how much of which particular types of waste will actually be generated, no discussion of what specific measures will be undertaken to ensure compliance with the policies and regulations at issue to ensure water quality, and no finding of an expectation that such measures will lead to compliance.

Further, floods may be an issue for certain of the projects. For both the Costa/Gemmer Dairy Establishment and the Van Der Poel Feedlot Expansion, a portion of projects' respective waste disposal properties are located in an area subject to 100 year flood events. The possibility that floods might wash the material being treated out of the lagoons and into surface waters is not specifically discussed in the negative declarations.

3. Watercourses on Project Sites. Contamination of surface water may be even more likely for certain of the projects, given their proximity to surface watercourses. In the proposed Van Der Poel Feedlot Expansion, the acreage to be irrigated with reclaimed dairy waste water

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of the Tulare County Dairy/Animal Confinement Facility Policies. As applied in the Airosa Dairy Establishment Negative Declaration, the Policies do not require consideration of projects proposed after the date that the application for the proposed project was submitted, non-operating animal facilities, or facilities outside of a one-mile radius from the proposed project. Under the "cumulative impacts" analysis required by CEQA, however, the effects of all past, present, and probable future projects must be examined, and no arbitrary "cut-off" radius is applicable. (See Cal. Code Regs., tit. 14, § 15064(i)(1).)

and used for spreading manure borders on Bates Slough and, in addition, the water table is relatively high (30-40 feet in 1985). Deer Creek runs through the site of the proposed Costa/Gemmer Dairy Establishment and the proposed De Boer Dairy Establishment; according to a comment letter from the United States Department of Agriculture, Deer Creek breached its levee in 1996. Cottonwood Creek borders the southern edge of the proposed Boertje Dairy Expansion. The presence of nearby watercourses and the resulting higher probability of contamination to surface water is not discussed in the negative declarations.

4. Treatment Lagoons. All six projects will include waste water treatment lagoons. In a letter from the United States Department of Agriculture commenting on the Costa/Gemmer Dairy Establishment, the Department notes that soil surveys of the Deer Creek floodplain indicate soil properties and inclusion that can speed the leaching of nutrients and pesticides into the groundwater. Seepage is also recognized as a possibility for other projects as well. For example, the Airosa Dairy Establishment Negative Declaration notes that two of the three soil types that exist at the project site have "moderate" and "severe" limitations for sewage lagoons because of the possibility of seepage. The draft negative declarations fail to discuss the possible of contamination of groundwater by operation of the proposed waste water treatment lagoons.

Water Supply and Land Use.

The negative declarations contain no discussion of water use by the proposed projects and the relation of water use to water availability in the region. It is impossible to know whether sufficient water is available to service the projects, or what effect on water supply in the area the projects will have. It is our understanding that dairies use large quantities of water, and it is a truism that water supply in the Central Valley is insufficient to meet the many needs for it for agricultural and residential use. The approval of six new sources in a relatively small area that all may use large quantities of water raises potentially significant issues of water supply. In addition, the negative declarations do not discuss the effects of the loss of prime agricultural land to dairy and/or feedlot operations. These issues should be addressed for all six projects.

Biological Resources.

The sites of the Airosa Dairy Establishment, the Van Der Poel Feedlot Expansion, and the Costa/Gemmer Dairy Establishment are all within the historical habitat of the blunt-nosed leopard lizard and the San Joaquin kit fox. Both of these animals are federal and state-listed endangered species. TCRMA has found that the impacts on these species would be less than significant, apparently because "[m]ost of the site and the surrounding area have been heavily disturbed by agricultural activities for some time and little or no habitat exists." In other words, TCRMA argues that the damage has already been done, and therefore additional damage would

not be significant.

We believe that the County does not have sufficient information to make such a finding, and in fact has reason to find that the proposed project may do significant harm to endangered or threatened species. First, the scope of TCRMA's review of biological effects was artificially limited to only two endangered species, blunt-nosed leopard lizard and the San Joaquin kit fox. The record itself indicates that other sensitive species may exist in the project areas. For example, according to the Department of Fish and Game's comment letter, the threatened Swainson's Hawk is known to occur in the area of the proposed Van Der Poel Dairy Expansion, and the Tipton kangaroo rat and the burrowing owl, both sensitive species, are known to occur in the area of the proposed Costa/Gemmer Dairy Establishment. The possible effects of those projects on these species are not discussed at all in the negative declarations.

Further, for all sites except the proposed Costa/Gemmer Dairy Establishment,[4] there is no indication of the factual basis for the assertion that no habitat for the relevant endangered or threatened species exists on the project sites. It does not appear that assessments of these project sites were done to identify either habitat (e.g., native pasture or rangeland, vernal pools, wetlands, or riparian habitat) or the actual presence of any species of concern. This lack of data does not justify a finding of no impact. (See *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 311 (agency "should not be allowed to hide behind its own failure to gather relevant data.")) Before a finding of no impact on endangered or threatened species, species of concern, the habitats or such species, or other sensitive habitats can made for any proposed project, a biological assessment of the site must be performed. TCRMA has not done that here.

Loss or degradation of habitat located on the project sites themselves is, in any event, only one of many potential impacts on wildlife to be considered. As the Department of Fish and Game has noted in comment letters, additional potential impacts include injury and/or mortality to sensitive species from project-related construction, increased traffic, and increased occurrence of domestic animals in the vicinity of the project; loss of foraging habitat for sensitive species and other wildlife; disturbance of night-active species; loss or degradation of area creeks from project development and wastewater disposal; loss of annual grassland and associated wildlife by conversion to cultivated agriculture for the purpose of wastewater disposal; and interference with

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[4] A biological reconnaissance survey was done of the site of the proposed Costa/Gemmer Dairy Establishment. The negative declaration states without discussion that "no signs of species of concern or their habitats were found on the subject site." It is not clear that such "reconnaissance" is sufficient even for this one site, and it certainly does not indicate that the species or their habitat are not present on the sites that were not surveyed.

animal movement and dispersion patterns. None of these possible effects is discussed in the negative declarations.

Solid Waste.

In several of the projects, some or all of the solid waste generated will be taken off-site. This is no discussion of how much solid waste will be generated, where such waste will be disposed of, or the possible off-site effects of such disposal.

Cumulative Impacts.

CEQA requires that projects not be assessed in a vacuum; they must be considered cumulatively with the existing projects of the same general type, and with proposed projects whose construction is reasonably anticipated, since the small effects of many similar projects may add up to a major cumulative effect on the environment. Each of the negative declarations at issue here makes a finding that its particular project does not have environmental effects which are individually limited but cumulatively considerable, but there is no discussion or analysis to support this finding.

From the limited documentation for the six projects of which we have notice, it appears that there are a great number of large dairies, cattle feedlots, and contained animal production facilities that existed, currently exist, and are proposed for Tulare County. For example, draft negative declarations indicate that there are four existing dairies, one proposed dairy, and one defunct poultry facility within a one-mile radius of the proposed Airosa Dairy Establishment and six existing dairies within a one-mile radius of the proposed Van Der Poel Feedlot Expansion. For the other projects, no information on nearby dairies, cattle feedlots, and other similar concentrated animal production facilities is provided, and for none of the projects is information concerning operations outside the one-mile project radius provided.

Under the CEQA regulations, the County must make a mandatory finding of significant environmental effect (thereby requiring an EIR) when "[t]he project has possible environmental effects which are individually limited but cumulatively considerable." (Cal. Code Regs., tit. 14, § 15065(c).)

> "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

(Cal. Code Regs., tit. 14, § 15064(i)(1).) "One of the most important environmental lessons evident from past experience is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant, assuming threatening dimensions only when considered in light of the other sources with which they interact. . . . CEQA has responded to this problem of incremental environmental degradation by requiring analysis of cumulative impacts." (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692 (citation omitted).)

Viewed individually, each of the six proposed projects has numerous potentially significant effects. Viewed cumulatively, the effects of past, current, and future projects are that much more considerable and in need of analysis. In addition, several other potential impacts not discussed, e.g., the creations of dust, odor, noise, flies, and mosquitoes, and the impact on area roads and traffic circulation, are likely to be significant if viewed cumulatively.

CONCLUSION

The above-listed projects involve numerous potentially significant environmental effects. We believe that these unmitigated potential effects meet the low threshold trigger for requiring an EIR as a matter of law, and, at the very least, require substantially more discussion. We urge the County to perform full environmental review for the projects.

Thank you for the opportunity to comment. We would be happy to discuss any of our concerns with you. If you wish to do so, please contact the undersigned at the number listed above.

Sincerely,

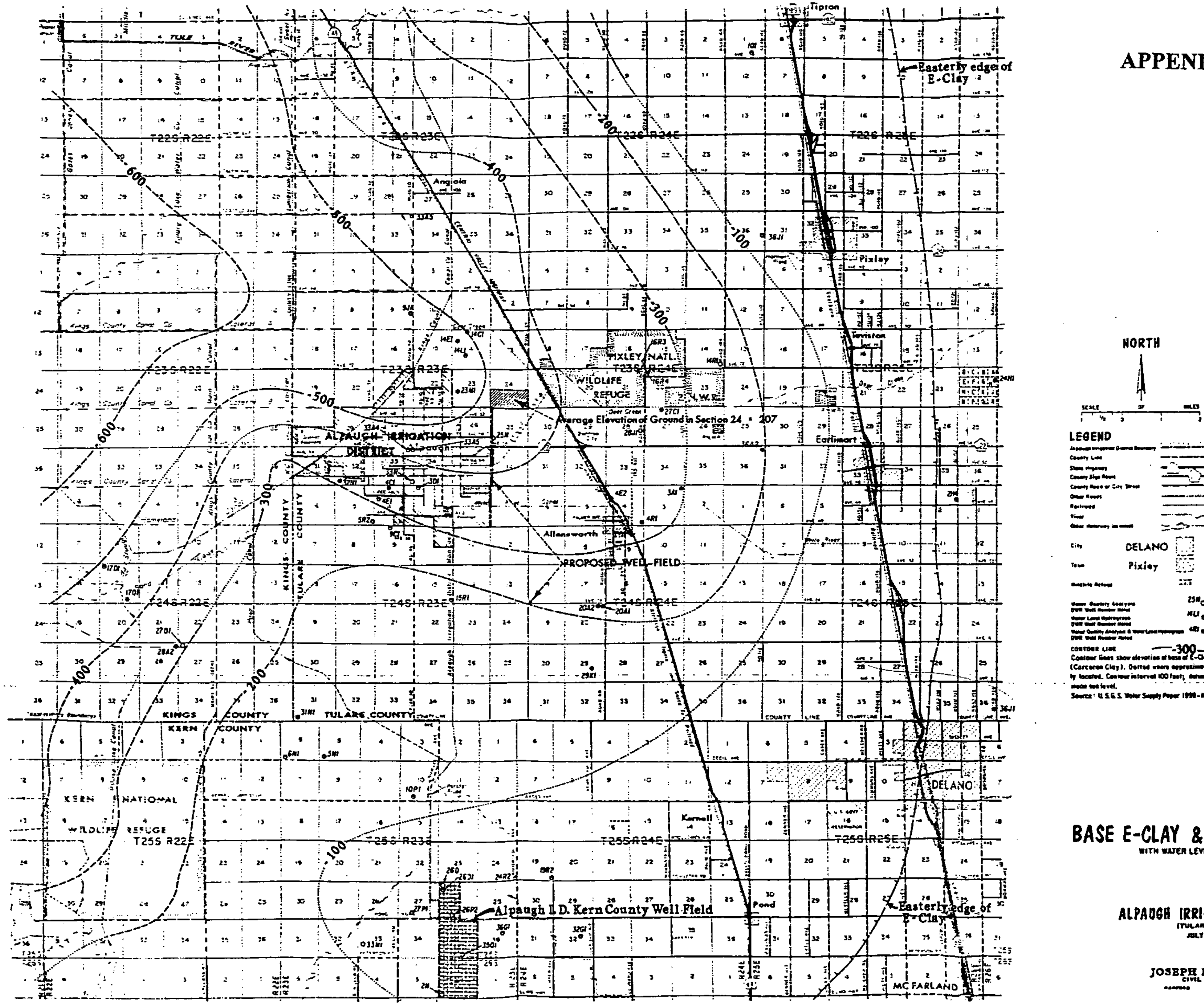
—DRAFT—

KEN ALEX
Supervising Deputy Attorney General
JANILL RICHARDS
Deputy Attorney General

For BILL LOCKYER
Attorney General

APPENDIX G

APPENDIX G



Tipton
Easterly edge of E-Clay
T22S R22E
T22S R23E
T22S R24E
T22S R25E
Angiola
Pixley
Tevision
T23S R22E
T23S R23E
PIXLEY NATL.
WILDLIFE REFUGE
T23S R24E
T23S R25E
Average Elevation of Ground in Section 24 = 207
Earlimart
ALPAUGH IRRIGATION DISTRICT
Alpaugh
Allensworth
PROPOSED WELL FIELD
T24S R22E
T24S R23E
T24S R24E
T24S R25E
KINGS COUNTY
TULARE COUNTY
KERN COUNTY
COUNTY LINE
DELANO
KERN NATIONAL WILDLIFE REFUGE
T25S R22E
T25S R23E
T25S R24E
T25S R25E
Kernell
Alpaugh I. D. Kern County Well Field
Pond
Easterly edge of E-Clay
MC FARLAND
600
500
400
300
200
100
NORTH
SCALE
MILES
LEGEND
City
DELANO
Town
Pixley
CONTOUR LINE
-300
Contour lines show elevation of base of E-Clay (Corcoran Clay). Dotted where approximately located. Contour interval 100 feet; datum mean sea level.
Source: U.S.G.S. Water Supply Paper 1999-H.

BASE E-CLAY & WELL LOCATIONS

WITH WATER LEVEL AND QUALITY DATA

ALPAUGH IRRIGATION DISTRICT

(TULARE COUNTY)

JULY 1975

JOSEPH B. SUMMERS

CIVIL ENGINEER

APPENDIX H

DRAFT

TULARE COUNTY COMPREHENSIVE NUTRIENT MANAGEMENT PLAN

NAME OF FACILITY: _____

ADDRESS OF FACILITY: _____

CONTACT PERSON: _____ TELEPHONE: _____

NAME OF LEGAL OWNER OF FACILITY: _____

ADDRESS OF LEGAL OWNER: _____

CONTACT PERSON: _____ TELEPHONE: _____

CERTIFICATION

I HEREBY CERTIFY UNDER PENALTY OF PERJURY THAT THE ADDITIONAL INFORMATION PROVIDED IN THIS COMPREHENSIVE NUTRIENT MANAGEMENT PLAN AND IN ANY ATTACHMENTS IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE.

_____

SIGNATURE OF **OWNER** OF FACILITY

_____

SIGNATURE OF **OPERATOR** OF FACILITY

SUMMARY

Dairy Name: _____

Location: _____

1. Number of milk cows _____
2. Number of other cows _____
3. Total animal units _____

4. Total N available dry _____
5. Total N available liquid _____
6. Total N available _____
   Total N required for crops _____
7. Total acres for dry manure application _____
8. Total acres for liquid manure application _____
9. Total acres for waste application _____
10. Is the disposal area adequate for liquid waste? Yes_____ No_____
11. Lagoon capacity _____
12. Does the lagoon have 120 day capacity? Yes _____ No_____
13. Breed of cow _____

COMPREHENSIVE NUTRIENT MANAGEMENT PLAN

Determination of Animal Units

1. Enter the number of animals (if any) which are kept in freestalls with flush system, typically 80 **percent of this waste is handled as a liquid, 20 percent is handled dry.**

	No. of Head		Table #1	AU
Milk Cows	_____	x	_____	_____
Dry Cows	_____	x	_____	_____
Bred Heifers	_____	x	_____	_____
Heifers (1 year to Breeding	_____	x	_____	_____
Calves (3 months to 1 year)	_____	x	_____	_____
Baby Calves	_____	x	_____	_____
			Milk cows only AU	_____ (1a)
			Non-milk cows AU	_____ (1b)
			Total AU	_____ (1c)

2. Enter the number of animals (if any) which are kept in corrals with flushed alleys, typically 60 **percent of this waste is handled as a liquid, 40 percent is handled dry.**

	No. of Head		Table #1	AU
Milk Cows	_____	x	_____	_____
Dry Cows	_____	x	_____	_____
Bred Heifers	_____	x	_____	_____
Heifers (1 year to Breeding)	_____	x	_____	_____
Calves (3 months to 1 year)	_____	x	_____	_____
Baby Calves	_____	x	_____	_____
			Milk cows only AU	_____ (2a)
			Non-milk cows AU	_____ (2b)
			Total AU	_____ (2c)

3. Enter the number of animals (if any) which are kept in dry lot situations (with no flush system). **100 percent of this waste is generally handled dry.** (If all dairy animals are in dry corrals or at facilities where alleys or freestalls are scraped, use only section 9 for waste load calculations).

	No. of Head		Table #1	AU
Milk Cows	_____	x	_____	_____
Dry Cows	_____	x	_____	_____
Bred Heifers	_____	x	_____	_____
Heifers (1 year to Breeding)	_____	x	_____	_____
Calves (3 months to 1 year)	_____	x	_____	_____
Baby Calves	_____	x	_____	_____
			Milk cows only AU	_____ (3a)
			Non-milk cows AU	_____ (3b)
			Total AU	_____ (3c)

4. **Total Animal Units at the Facility.**
Add AU totals from steps 1c, 2c, & 3c _____

Dairy Nutrient Load Calculations

5. Calculating nitrogen loading from liquid waste (except for milk cows)

	lbs N/year
___ AU (step 1b) x .45 lbs N/AU/day (table 2) x .80 x__ %N retention (table 3) x 365 =	
___ AU (step 2b) x .45 lbs N/AU/day (table 2) x .60 x __ %N retention (table 3) x 365 =	
Subtotal:	
Subtract amount exported (if any):	
Total N available in liquid waste:	

6. Calculating nitrogen loading from dry waste (except for milk cows)

	lbs N/year
___ AU (step 1b) x .45 lbs N/AU/day x .20 x 25 % N retention x 365=	
___ AU (step 2b) x .45 lbs N/AU/day x .40 x 25 % N retention x 365 =	
___ AU (step 3b) x .45 lbs N/AU/day x 25% N retention x 365 =	
Subtotal:	
Subtract amount exported (if any):	
Total N available in dry waste:	

7. Calculating nitrogen loading from liquid waste (milk cows)

	lbs N/year
___ AU (step 1a) x .56 lbs N/AU/day (table 2) x .80 x__ %N retention (table 3) x 365 =	
___ AU (step 2a) x .56 lbs N/AU/day (table 2) x .60 x __ %N retention (table 3) x 365 =	
Subtotal:	
Subtract amount exported (if any):	
Total N available in liquid waste:	

8. Calculating nitrogen loading from dry waste (milk cows)

	lbs N/year
_____AU (step 1a) x .56 lbs N/AU/day x .20 x 25 % N retention x 365=	
_____AU (step 2a) x .56 lbs N/AU/day x .40 x 25 % N retention x 365 =	
_____AU (step 3a) x .56 lbs N/AU/day x 25% N retention x 365 =	
Subtotal:	_____
Subtract amount exported (if any):	_____
Total N available in dry waste:	_____

Totals from Step 5 + Step 7= **Total N available in liquid waste:** _____(8a)
Totals from Step 6 + Step 8= **Total N available in dry waste:** _____(8b)
Total N available _____(8c)

9. **Use this section only for dairies where all animals are in dry corrals or where alleys or freestalls are scraped.** Typically 10% of the waste from the milk cows is carried in the wastewater.

	No. of Head		Table #1		AU	
Milk Cows	_____	x	_____	AU	=	**AU(9)**

Calculate nitrogen loading from liquid waste. ___ AU (milk cows only) x .56 lbs N/AU/day x .1 x ___ N retention (table 3) x 365 = lbs N/year	**(9a)**
Calculate nitrogen loading from dry waste. ___ AU (milk cows only) x .56 lbs N/AU day x .9 x 25 % N retention x 365 = lbs N/Year	**(9b)**

Dry Stock Only	No. of Head		Table #1	AU
Dry Cows	_____	x	_____	_____
Bred Heifers	_____	x	_____	_____
Heifers (1 year to Breeding)	_____	x	_____	_____
Calves (3 months to 1 year)	_____	x	_____	_____
Baby Calves	_____	x	_____	_____
				_____AU **9c**

Total Animal Units (9 + 9c) =_____(9d)

Calculate nitrogen loading (dry waste only)(dry stock) ___ AU x .45 lbs N/AU/day x 25% N retention x 365 =	_____N lbs/yr **(9e)**

Total N available in dry waste: Add 9b + 9e = _____lbs **(9f)**

Total N available in liquid waste: 9a only = _____lbs **(9g)**

Total N output for the dairy: Add 9a + 9b +9e = _____lbs **(9h)**

10. For land under the same management as the dairy or where there is a written agreement to receive dairy waste, calculate crop nitrogen requirement: (Attach wastewater application agreements, if required).

Name	Crop	APN*	Acres	Crop N Requirements Table #6	Total N (lbs) Per/Crop/Yr
				x	=
				x	=
				x	=
				x	=
				x	=
				x	=
				x	=
				x	=
				x	=
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				x	=
				x	=

Total Waste Application Acres: _____

Total acres for dry manure: _____

Total acres for wastewater: _____

Total N needed: _____

Total N available dry: _____ (8b or 9f)

Total N available liquid: _____ (8a or 9g)

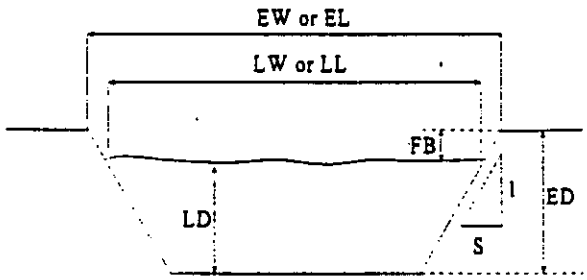
Total N available: _____ (8c or 9h)

Is the disposal area adequate for the Total N available? Yes ____ No ____

*Assessors Parcel Number

11. LAGOON/SETTLING BASIN

A. Do you have a lagoon? If yes, the following formulas can be used to determine the capacity of an existing or new square or rectangular lagoon (minimum 120 day storage).



Unit Abbreviations:

LW = liquid width, ft EW = earth basin width, ft FB = freeboard, ft S =sideslope, ft = amount of run for 1 foot fall LL = liquid length, ft EL = earth basin length, ft LD = liquid depth ED = earth basin depth, ft	LW = EW-2 x FBxS LL = EL -2 x FBxS LD = ED - FB Volume (ft^3) = (LW x LL x LD) - [(S x LD^2) x (LW+ LL)] + (4 x S^2 x LD^3 ÷ 3)
S = LW = LL = LD =	
Storage Volume (ft^3)=(LWxLLxLD)-[(SxLD^2)x(LW÷LL)] ÷(4xS^2xLD^3 ÷3) Storage Volume (ft^3)=	

B. Do you have a solids separator system? _____Yes_____No

1. ___Mechanical 2. ___ Settling Basin

3. Size of settling basin (L x W x D) _____

C. If yes, how often are the solids removed and where are the solids spread?

_____

_____

_____

D. Does the lagoon lining have____ or will have____ at least 10% clay in the bottom and sides? (State Requirement)

E. Are any natural water ways on or adjacent to the dairy or adjacent to lands that will receive liquid or solid waste? YES_____ NO_____

F. If a tailwater system is to be used, how will it be designed to ensure that no tailwater enters natural waterways (elevated berms, set back distances, etc.)

_____

_____

_____

_____

G. How often is a lagoon pumped down?

Spring:_____ Summer:_____ Fall:_____ Winter:_____

H. How often are solids removed from the lagoon? _____

I. Is lagoon water recycled? Yes_____ No_____

I. WASTE WATER PRODUCTION

(Total AU)* (Manure Produced, ft³/AU)(7.48 gal/ft³)

(_____)(1.37 ft³/day/AU)(7.48 gal/ft³)= _____ gal/day

(_____ gal/day)(120 days) = _____ gal

*Annual units generating waste to lagoon

Does the Waste Management System include a solids separator? Yes_____ No_____

1. If yes, then the mechanical separator removes 10% of the daily waste (by volume).

(_____ gal)(0.90) = _____ **gal (a)**

2. If yes, then the settling basin removes 40% of the daily waste (by volume).

(_____ gal)(0.60) = _____ **gal (a)**

J. RAINFALL

Month	Westside Merced County	Eastside Merced County
December	1.32 in.	1.64 in.
January	1.56 in.	2.08 in.
February	1.62 in.	1.88 in.
March	1.37 in.	1.83 in.
Subtotal	**5.87 in**	**7.43 in.**
25 yr. - 24 hr. storm	2.30 in	2.25 in.
Total Rainfall	**8.17 in.**	**9.68 in.**

Areas of Water Runoff	Total Area (ft²)	Percentage Into Lagoon	Area Into Lagoon (ft²)
Concrete Lanes	_____	_____	_____
Roof Area	_____	_____	_____
Lagoon area	_____	_____	_____
Corrals and Yard	_____	_____	_____
Other	_____	_____	_____ **Totals**

TOTAL RAINFALL INTO LAGOON

$$\frac{(\text{Area Into Lagoon, ft}^2)(\text{Total Rainfall, in.})(7.48\ \text{gal/ft}^3)}{(12\ \text{in./ft.})}$$

$$\frac{(\_\_\_\_\_)(\_\_\_\_\_)(7.48)}{(12)} = \_\_\_\_\_\ \textbf{gal (b)}$$

K. BARN WATER USED (INCLUDES WASH WATER, FLUSH WATER, ETC.) (Complete 1-9)

1. Number of milkings (per day) _____
2. Bulk tank wash volume (gallons per day) _____
3. Pipeline wash volume (gallons per day) _____
4. Miscellaneous equipment wash (gallons per day) _____
5. Milkhouse and parlor floor wash (gallons per day) _____
6. Cow prep wash (gallons per day) _____
7. Holding pen sprinklers (gallons per day) _____
8. **Total gallons of Barn Water used per day (add #2 thru #7)** _____
9. **Total gallons of Barn Water used per day (#8 x 120 days)** _____ **gal (c)**

L. FLUSH WATER

1. Fresh water used in manure flush system = (a)_____ gal/day
2. Total flush water (120 x (a)_____) = _____ **gals(d)**

M. EVAPORATION

Average Evaporation (for both Westside and Eastside) = 0.05 in/day

(0.05 in/day) (120 days) = 6.0 in.

$$\frac{(6.0 \text{ in. Evaporation})(\text{Area of Lagoon, ft}^2)\ 7.48\ \text{gal/ft}^3)}{(12\ \text{in/ft})}$$

$$\frac{(6.0)\ (\quad\quad)(7.48)}{(12)} = \quad\quad \textbf{gal (e)}$$

N. TOTAL STORAGE REQUIREMENT

Waste Production	_____	gal (a page 9)
Rainfall	_____	gal (b page 9)
Barn Water Used	_____	gal (c page 10)
Flush Water	_____	gal (d page 10)
Evaporation	_____	gal (e page 10)

(Waste Production) + (Barn Water Used) + (Rainfall) + (flush water) - (Evaporation)

( ) + ( ) + ( ) + ( ) - ( ) =

Total Gallons _____

Total Cubic Feet

$$\frac{\text{(Total Gallons)}}{(7.48\ \text{gal/ft}^3)} = \frac{(\quad\quad)}{7.48} = \quad\quad \text{ft}^3$$

12. GROUNDWATER/FERTILIZERS

A. Depth to groundwater?		ft.
B. Are other forms of nitrogen fertilizer utilized? (i.e., chemical fertilizers)	YES	NO
C. Is groundwater monitoring required by the Regional Board?	YES	NO

13. IRRIGATION/DRAINAGE

A. Is lagoon water blended with surface water?	YES	NO
B. Is lagoon water blended with groundwater?	YES	NO
C. Has the groundwater used for irrigation been tested for NO_3 mg/l? If Yes - What were the results? _____	YES	NO
D. Have soil samples been taken for nitrogen analysis? If Yes - What were the results? _____	YES	NO
E. Does the facility have a tailwater return system?	YES	NO
F. Is the dairy facility outside the 100 year floodplain? (corrals, milk barns and lagoon)	YES	NO
G. Is all the wastewater applied to land owned by the producer? (If the answer is NO, written agreements must be submitted with this plan indicating acceptance of wastewater.)	YES	NO

H. Describe how rainwater is managed in the corral area:

_____

_____

_____

14. MANURE (solids only)

A. How often are the corral areas scraped and where are the solids stored?

_____ Once a year

_____ Twice a year

_____ Other frequency (specify)_____

Storage area _____

B. Where does the drainage water from the corral areas flow?

_____

_____

C. Is all dry manure applied to land owned by the producer?	YES	NO
D. Are the corrals sloped to prevent pooling of corral water?	YES	NO

15. **SOIL**

A. What is/are the soil type(s) for the waste application areas?

_____

_____

_____

16. **VECTOR CONTROL (flies, rodents, etc.)**

A. How are dead animals disposed?

B. Describe vector control measures:

_____

_____

_____

17. Are feed storage areas well drained and effluent kept on-site? Yes_____ No_____

18. Explain how wastewater, stormwater and irrigation water containing manure is prevented from leaving property under control of the operator.

19. Outline measures to be implemented to bring the dairy facility and/or farm into compliance with State regulations, in the event wastes leave the property or migrates into ground water, while under control of the operator.

20. **ATTACH A FACILITY MAP THAT INCLUDES:** (8.5" x 11" or 11" x 17", with "N" arrow)

A. Buildings, corrals, lanes, lagoons, ditches, pipelines, silage storage and disposal areas.

B. On-site and off-site wastewater and manure application areas.

C. Surface waterways on or near the facility, such as rivers, canals, sloughs, and intermittent streams.

D. The location of on-site & adjacent wells, within 100 feet of property.

E. Slope of land.

F. Location and size of lagoon.

G. USGS and Assessor's parcel maps. (Environmental Health to provide)

H. A list of all points from which wastewater, stormwater runoff and irrigation runoff can leave the property under control of the owner.

OTHER COMMENTS

APPENDIX I

July 6, 1995

POLICY

DEVELOPMENT IMPACTS TO THE COUNTY ROAD SYSTEM

DRAFT

INTRODUCTION

This policy is intended for consideration in the approval of proposed development projects which generate a net increase in truck traffic and which are required to be issued a special use permit under the Tulare County Zoning Ordinance or for which a development agreement is requested pursuant to Section 7134 et. seq. of the Tulare County Ordinance Code. This policy is to be used as a general guideline as it is anticipated that the policy statements set forth herein will be applicable to most projects. Special consideration is warranted when the application of the policies to specific development projects result in unusual and unreasonable hardships.

The Legislature of the State of California has declared that in enacting zoning enabling laws it is the State's intention to provide only a minimum of control over local zoning matters (Government Code Section 65800). The Tulare County Zoning Ordinance (Ordinance No. 352, as amended) provides that permits for special uses may be granted only when the establishment, maintenance and operation of use of building or land will not, under the circumstances of particular cases, be detrimental to the health, safety, peace, morals, comfort and general welfare of persons residing or working in the neighborhood or for the general welfare of the County. The Zoning Ordinance authorizes the imposition of conditions of approval for special use permits that will insure compliance with these standards (Section 16.IIB, Ordinance No. 3252, as amended). The only limitation on this authority is found in Government Code Section 65909 wherein unreasonable permit conditions are prohibited. The limitation specifies that no local governmental body may condition the issuance of any building or use permit or variance on any of the following:

a. The dedication of land for any purpose not reasonably related to the use of the property for which the variance, building or use permit is requested.

b. The posting of a bond to guarantee installation of public improvements not reasonably related to the use of the property for which the variance, building or use permit is requested.

Finally, Section 66000 et seq. of the Government Code authorizes cities and counties to impose impact fees as a condition of approval of development projects provided there is a reasonable relationship between the amount of the fee and the cost of the public improvement or a portion of the public facility attributable to the development on which the fee is imposed.

DEFINITIONS

County Road System: Those public roads which have been dedicated to and accepted for maintenance by the County pursuant to the California Road system Mapping for Tulare County as certified by the Board of Supervisors.

Minor Roads: This category includes the following:

a. Minor Collectors: Through roads with relatively low traffic volumes providing access and connection to a Select system road.

b. Local and/or Land Use Roads: Roads whose primary function is to provide access to adjacent land and which carry traffic to other minor roads and in some instances select system roads. These roads generally are less than two miles in length and tee into through roads.

Select System Roads: This category includes the following:

a. Arterial Roads: Roads that carry high volumes of through traffic which interconnect between and/or connect to State Highways or other arterials.

b. Collectors: Roads that serve to collect traffic from minor roads and carry it to arterial roads.

Truck: A motor vehicle designed, used, or maintained primarily for the transportation of property.

BACKGROUND

Minor roads for the most part have not been constructed to an engineered standard and therefore are structurally inadequate to support truck traffic associated with agricultural (including but not limited to, dairies and cold storage facilities), commercial and industrial developments. These roads are relatively narrow in width, have no base material beneath the pavement, and no provisions for adequate drainage of the roadway have been made.

The minor roads evolved over time and were considered adequate for the minimal traffic and agricultural equipment associated with seasonal planting and harvesting activities. However, truck traffic associated with current development proposals carry heavier loads and are daily in nature and thus much more destructive to the roads.

Due to inadequate funding for maintenance of the County Road System, minor roads are not being maintained on a routine basis. Given the structural inadequacies of minor roads coupled with the lack of maintenance, proposed developments utilizing these roads are expected to degrade and ultimately destroy the roadway at an accelerated rate compared to historic traffic conditions.

POLICY

To mitigate potential structural impacts caused by a net increase in truck traffic to minor roads in the County Road System, a proposed development shall be required to comply with one of the following:

1. As a condition of project approval, the applicant shall be required to construct all impacted minor roads to an engineered standard established by the Public Works Department from the development access point(s) to a Select System road. Construction of the required improvements shall be completed prior to approval of final occupancy associated with a building permit or prior to commencement of the permitted use, whichever occurs first. The applicant's cost to construct the required road improvements shall not exceed a 1995 cost of $165,000 per mile, with this cost being adjusted annually based on the construction cost index published in the Engineering News Record. Construction of the required improvements may be accomplished in one of the following manners.

   a. The applicant shall submit improvement plans, prepared by a Registered Civil Engineer, detailing construction of the required road improvements to the Public Works Department for approval and then upon issuance of an encroachment permit by the Department the applicant shall cause the improvements to be constructed.

   b. The applicant shall provide security in a form authorized by Section 7080.6 (b) or (e) of the Tulare County Ordinance Code to the Public Works Department, in an amount based on the estimated cost of required road construction improvements as approved by the Public Works Director. County forces would then construct or cause to be constructed within a one year period, the required road improvements.

2. As a condition of project approval which utilizes a road previously required to be improved by a prior project(s) pursuant to this policy, the applicant shall make a payment to the County based on an equitable portion of the relative impact of the proposed project as determined by the Planning Commission. The amount required to be paid to the County, shall be reimbursed to the prior project applicant(s) or current property owner(s). However, no reimbursement will be made for the cost of that portion of a half-road required to be constructed immediately adjacent to the prior project site.

Should funding other than that which is available to the County at this time to provide for road maintenance and construction activities become available to the County in the future, these monies may be used to offset road improvement construction costs incurred by the applicant.

APPENDIX J

APPENDIX J
AIR POLLUTANT PROPERTIES, EFFECTS AND SOURCES

The following describes the pollutants of greatest importance in the San Joaquin Valley. (Source: San Joaquin Valley Unified Air Pollution Control District, Guide for Assessing and Mitigating Air Quality Impacts, Technical Document, August 1998)

Ozone:

Description and Physical Properties: Ozone is what is known as a photochemical pollutant. It is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between reactive organic gases (ROG), NOx, and sunlight. ROG and NOx are emitted from automobiles, solvents, and fuel combustion, the sources of which are widespread throughout the SJV. In order to reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors. Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. Ozone is a regional air pollutant. It is generated over a large area and is transported and spread by wind. The worst ozone concentrations tend to be found downwind from emission sources in SJV metropolitan areas, though the results of the San Joaquin Valley Air Study indicated that "high ozone concentrations in the Valley were due to varying combinations of local and transported pollutants".

Effects: While ozone in the upper atmosphere protects the earth from harmful ultraviolet radiation, high concentrations of ground level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems such as forests and foothill communities, and damages agricultural crops and some man-made materials, such as rubber, paint, and plastics.

Reactive Organic Gases (ROG):

Description and Physical Properties: Reactive organic gases, also known as volatile organic compounds, are photochemically reactive hydrocarbons that are important for ozone formation. This definition excludes methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonates, methylene chloride, methyl chloroform and various chlorofluorocabons (CFCs).

Effects: There are no health standards for ROG separately. The main concern with ROG is its role in photochemical ozone formation. In addition, some compounds that make up ROG are also toxic. An example is benzene, which is a carcinogen.

Sources: The primary sources of ROG are mobile sources, solvents and other area sources, and oil & gas production. The following table shows the 1995 ROG inventory for the entire SJV, based on data from the Emission Inventory for 1995, published by the California Air Resources Board (CARB).

1995 ROG Emissions (SJVAB)		
Category	**Tons/day**	**% of Total**
Fuel Combustion	9.3	1.6
Waste Disposal	6.7	1.2
Surface Coating	30	5.2
Oil & Gas Production	60	10.5
Petroleum Processing	9.7	1.7
Other Industrial	15	2.6
Solvent Evaporation	110	19.2
Other Area Sources	99	17.3
Mobile Sources	230	40.1
Natural Sources	3.8	0.7

Oxides of Nitrogen (NOx):

Description and Physical Properties: NOx is a family of gaseous nitrogen compounds and are precursors to ozone formation. The major component of NOx, nitrogen dioxide (NO_2), is a reddish-brown gas that is toxic at high concentrations. NOx results primarily from the combustion of fossil fuels under high temperature and pressure.

Effects: Health effects associated with NOx are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. NOx can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne NOx can also impair visibility. NOx is a major component of acid disposition in California.

Sources: On-road motor vehicles and fuel combustion are the major sources of this air pollutant, and they emit approximately 47% and 32%, respectively, of the total NOx released in the SJV. The following table shows the 1995 NOx inventory for the entire SJV, based on data from the Emission Inventory for 1995, published by the California Air Resources Board (CARB).

1995 NOx Emissions (SJVAB)		
Category	**Tons/day**	**% of Total**
Industrial Processes	23.2	4.3
Fuel Combustion	170	31.7
Area Wide Sources	12	2.2
On-road Mobile Sources	250	46.6
Other Mobile Sources	80	14.9
Natural Sources	0.9	0.2

Carbon Monoxide (CO):

Description and Physical Properties: CO is an odorless, colorless gas that is highly toxic. It is formed by the incomplete combustion of fuels and is emitted directly into the air (unlike ozone). Under most conditions, CO does not persist in the atmosphere and is rapidly dispersed. CO exceedances are most likely to occur in the winter, when relatively low inversion levels trap pollutants near the ground and concentrate the CO. Since CO is somewhat soluble in water, normal winter conditions of rainfall and fog can suppress CO concentrations.

Effects: Carbon monoxide binds strongly to hemoglobin, the oxygen-carrying protein in blood, and thus reduces the blood's capacity for carrying oxygen to the heart, brain, and other parts of the body. At high concentrations, CO can cause heart difficulties in people with chronic diseases, can impair mental abilities, and can even cause death.

Sources: The main source of CO in the SJV is on-road motor vehicles. Motor vehicles contribute approximately 71% of total CO emissions. Other CO sources in the SJV include other mobile sources and waste burning. Because most of these CO sources are the indirect result of urban development, most emissions and unhealthful CO levels occur in major urban areas. The following table shows the 1995 CO inventory for the entire SJV, based on data from the Emission Inventory for 1995, published by the California Air Resources Board (CARB).

1995 CO Emissions (SJVAB)		
Category	**Tons/day**	**% of Total**
Fuel Combustion	61	2.4
Industrial Processes	3.0	0.2
Waste Burning & Disposal	190	7.4
Other Area Sources	130	5.1
Light-duty Passenger	930	36.4
Light-duty & Medium Trucks	708	27.7
Heavy-duty Trucks	132.4	5.2
Other On-road Vehicles	6.1	0.2
Other Mobile Sources	330	12.9
Natural Sources	62	2.4

Particulate Matter (PM-10 and PM-2.5):

Description and Physical Properties: Suspended particulate matter (airborne dust) consists of particles small enough to remain suspended in the air for long periods. Respirable particular matter (PM-10 and PM-2.5) includes particulates of 10 microns or less in diameter, those which are small enough to be inhaled, pass through the respiratory system, and lodge in the lungs, with resultant health effects.

Sulfates: Sulfates are particulate products of combustion of sulfur-containing fossil fuels. When SO or SO_2 come in contact with oxygen it precipitates out into sulfates (SO_3 or SO_4). Data collected in the SJVAB demonstrate levels of sulfates significantly less than the health standards.

Lead: Lead is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment so it essentially persists forever. Lead was used until recently to increase the octane rating in auto fuel. Since gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels and the use of leaded fuel has been mostly phased out, the ambient concentrations of lead have dropped dramatically. In fact, the SJVUAPCD no longer even monitors lead in the ambient air of the SJVAB.

Hydrogen Sulfide: Hydrogen sulfide (H_2S) is primarily associated with geothermal activity. H_2S is not monitored in the SJVAB because no geothermal sites exist.

Visibility Reducing Particles: This standard is a measure of visibility. The ARB does not yet have a measuring method with enough accuracy or precision to designate areas in the state attainment or nonattainment. The entire state is labeled unclassified.

APPENDIX K

APPENDIX K

Environmental documents for projects that have any significant environmental impacts must identify feasible mitigation measures or alternatives to reduce the impacts below a level of significant. If after the identification of all feasible mitigation measures, a project is still deemed to have significant environmental impacts, the Lead Agency can approve a project, but must adopt a Statement of Overriding Consideration to explain why further mitigation measures are not feasible and why approval of a project with significant unavoidable impacts is warranted. The following tables reflect mitigation measures which the SJVUAPCD considers to be feasible mitigation for potential air quality associated impacts in light of existing regulations and research.

Table 1
Regulation VIII Control Measures for Construction Emissions of PM-10

The following controls are required to be implemented at all construction sites:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.
- When materials are transported off-site, all material shall be covered, effectively wetted to limit visible dust emissions, or at least six inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or direct from adjacent public streets at least once every 24 hours when operations are occurring. *(The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)*
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.

Table 2
Enhanced and Additional Control Measures for Construction Emissions of PM-10

Enhanced Control Measures – The following measures should be implemented at construction sites when required to mitigate significant PM-10 impacts (note, these measures are to be implemented in addition to Regulation VIII requirements):
• Limit traffic speeds on unpaved roads to 15 mph; and • Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
Additional Control Measures – The following measures are strongly encouraged at construction sites that are large in area, located near sensitive receptors, or which for any other reason warrant additional emissions reductions:
• Install wheel washers for all existing trucks, or wash off all trucks and equipment leaving the site; • Install wind breaks at windward side(s) of construction areas; • Suspend excavation and grading activity when winds exceed 20 mph; and • Limit area subject to excavation, grading, and other construction activity at any one time.

Table 3
Construction Equipment Mitigation Measures

Emission Source	**Mitigation Measures**
Heavy duty equipment (scrapers, graders, trenchers, earth movers, etc.)	• Use of alternative fueled construction equipment • Minimize idling time (e.g., 10 minute maximum) • Limit the hours of operation of heavy duty equipment and/or the amount of equipment in use • Replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set) • Curtail construction during periods of high ambient pollutant concentrations; this may include ceasing of construction activity during the peak-hour of vehicular traffic on adjacent roadways • Implement activity management (e.g., rescheduling activities to reduce short-term impacts

Table 4
Mitigation Measures by Project Type

Project	Impact	Mitigation
General plan updates, large specific plans, new towns	Regional ozone impact, PM-10 impact, CO hot spots, toxic air emissions, odors	• Adopt air quality element/general plan air quality policies/specific plan policies • Adopt Air Quality Mitigation Fee Program • Fund TCM program: transit, bicycle, pedestrian, traffic flow improvements, transportation system, management, rideshare, telecommuting, video-conferencing, etc. • Adopt air quality enhancing design guidelines/standards • Designate pedestrian/transit oriented development areas on general plan/specific plan/planned development land use maps • Adopt ordinance limiting woodburning appliances, fireplace installations • Fugitive dust regulation enforcement coordinated with SJVUAPCD • Energy efficiency incentive programs • Local alternative fuels programs • Coordinate location of land uses to separate odor generators and sensitive receptors
General plan amendments & small specific plans and some zone changes	Potential regional ozone impact, cumulative impacts, CO hot spots, toxic air emissions, odors	• Apply general plan policies, local ordinances and programs from above to the project site or adopt similar site specific programs • Provide pedestrian/transit oriented project design • Contribute to Air Quality Mitigation Fee Fund • Contribute toward TCM implementation programs • Commit to on-site improvements: bikeways, transit infrastructure, pedestrian enhancements • Provide traffic flow improvements for areas impacted by the project

Tentative maps, site plans, conditional use permits	Cumulative ozone impacts, CO, toxic air emissions, odors	• Apply general plan policies and local ordinances and programs from above to the project site • Pedestrian/Transit oriented site design • Provide on-site improvements: bikeways, transit infrastructure, pedestrian enhancements • Contribute to Air Quality Mitigation Fee Fund • Contribute to TCM implementation • Energy conservation measures above and beyond requirements • Pay for fleet vehicle conversions to alternative fuels

APPENDIX L

APPENDIX L
Descriptions of Biological Resources of Concern

ACCIPITER COOPERII (NESTING)

COOPER'S HAWK

Breeds from digger pine-oak up to ponderosa pine and black oak woodland zone; prefers dense stands of live oaks of riparian sites. Apparently frequents edge situations. In winter, found in variety of wooded habitats. (Source: California Wildlife and Their Habitats: Western Sierra Nevada: General Technical Report PSW-37; Forest Service. 1980, page 124)

AMBYSTOMA CALIFORNIENSE

CALIFORNIA TIGER SALAMANDER

Found in vernal pools and permanent ponds in valley grassland and foothill woodland up to 1,054 meters in elevation. (Source: Amphibian and Reptile Species of Special Concern in California. 1994. Department of Fish and Game, page 12)

ARDEA HERODIAS

GREAT BLUE HERON

Found in all successional stages from annual grasslands through lodgepole pine. Regularly moves upslope after breeding, rarely up to treeline. Some nonbreeding individuals present year-round up to 4,000'; habitat includes ponds, lakes, streams, rivers, marshes, or wet meadows. (Source: California Wildlife and Their Habitats: Western Sierra Nevada. General Technical Report PSW – 37, Forest Service. 1980, page 96)

ATHENE CUNICULARIA (BURROW SITES)

BURROWING OWL

Found in non-native grassland alkali sink scrub and saltbrush scrub on valley floor. (Source: Focused Biological Surveys for Eight Target Species in Tulare County. Woodward-Clyde Consultants, 1992, page 4-24) Prefer open dry grasslands, bare open areas and low elevation hills. They will nest in early stage alkali shrub sagebrush up to pinyon-juniper and ponderosa pine woodlands. (Source: Endangered Species Alert Program Manual. 1991, Southern California Edison, E-34)

ATRIPLEX CORDULATA

HEARTSCALE

Found in saline or alkaline soils below 200 meters in elevation. (Source: 1993 Jepson Manual, page 503)

ATRIPLEX MINUSCULA

LESSER SALTSCALE

Found in sandy, alkaline soils below 200 meters in elevation. (Source: Jepson Manual, 1993, page 504)

ATRIPLEX PERSISTENS

PERSISTENT-FRUITED SALTSCALE

Mapped at the TNC Pixley Vernal Pool Preserve within T. 22 S., R. 26 E., Section 30. (Source: NDDB Report. Department of Fish and Game)

BRANCHINECTA LYNCHI

VERNAL POOL FAIRY SHRIMP

Found in northern claypan and northern hardpan vernal pool natural communities. (Source: Figure 301 in Focused Biological Surveys for Eight Target Species in Tulare County, 1992, Woodward-Clyde Consultants and Figure 3-1 in Focused Biological Surveys for Vernal Pool Fairy Shrimp in Tulare County, 1993, Woodward-Clyde Consultants)

BRODIAEA INSIGNIS

KAWEAH BRODIAEA

Found in valley and foothill grassland, cismontane woodland, granitic substrates in deep, clayey soils on south-southwest facing slopes, 500 – 4500 feet in elevation. (Source: Endangered, Threatened, Rare and Special Plants, Tulare County, California, University of California Cooperative Extension, Tulare County.

BUTEO SWAINSONI (NESTING)

SWAINSON'S HAWK

In the Central Valley, nests are often within one mile of a riparian zone. (Source: Endangered Species Alert Program Manual. 1991, Southern California Edison)

CAULANTHUS CALIFORNICUS

CALIFORNIA JEWELFLOWER

Found in flat, gentle slopes, generally in non-alkaline grassland, open juniper woodland, 70-1,000 meters in elevation. No populations of C. Californicus are currently known to exist in Tulare County. (Source: Focused Biological Surveys for Eight Target Species in Tulare County. 1992. Woodward-Clyde Consultants, page 4-9)

CHAMAESYCE HOOVERI

HOOVER'S SPURGE

Found in vernal pools below 250 meters in elevation. (Source: 1993 Jepson Manual, page 571)

CHARADRIUS ALEXANDRINUS NIVOSUS (NESTING)

WESTERN SNOWY PLOVER

Nesting occurs on the ground in alkali ponds from April through August. (Source: Biological Assessment for the Proposed Friant Division Contract Renewals, Central Valley Project, 1991, U.S. Bureau of Reclamation, page 19)

CLEMMYS MARMORATAA

WESTERN POND TURTLE

Found in aquatic riparian areas up to 1,430 meters in elevation. (Source: Amphibian and Reptile Species of Special Concern in California, 1994, Department of Fish and Game, page 98)

CYPSELOIDES NIGER (NESTING)

BLACK SWIFT

Black Swifts nest in steep canyons and cliffs along water courses in mountainous regions and travel daily to the valley floor to feed on flying insects. (Source: Focused Biological Surveys for Eight Target Species in Tulare County, 1992, Woodward-Clyde Consultants, page 4-24)

DELPHINIUM RECURVATUM

RECURVED LARKSPUR

Found in poorly drained, fine alkaline soils in grasslands, atriplex scrub, 30-600 meters in elevation. (Source: 1993 Jepson Manual, page 920)

DESMOCERUS CALIFORNICUS DIMORPHUS

VALLEY ELDERBERRY LONGHORN BEETLE

Inhabits only elderberry plants in riparian forests and adjacent grasslands from the calley floor to 2,200 feet in elevation. (Source: The distribution Habitat and Status of the Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus), 1991, U.S. Fish and Wildlife Service, page 5)

DIPODOMYS NITRATOIDES NITRATOIDES

TIPTON KANGAROO RAT

Limited to arid-land communities on valley floor (i.e., valley sink scrub). (Source: Recovery Plan for Upland Species of the San Joaquin Valley, California, 1998, U.S. Fish and Wildlife Service, page 106)

ERYNGIUM SPINOSEPALUM

SPINY-SEPALED BUTTON-CELERY

Found in vernal pools and depressions along the eastern valley floor, 100-200 meters in elevation. (Source: 1993 Jepson Manual, page 147)

GAMBELIA SILA

BLUNT-NOSED LEOPARD LIZARD

Occurs on nonnative grassland and valley sink scrub communities. (Source: Recovery Plan for Upland Species of the San Joaquin Valley, California, 1998, U.S. Fish and Wildlife Service, page 113)

GREAT VALLEY OAK RIPARIAN FOREST

Site Factors: Restricted to the highest parts of floodplains. Ristribution: Formerly extensive on low-gradient depositional reaches of major streams of Sacramento and northern San Joaquin valleys. More scattered in the San Joaquin watershed and on the

floodplains of the Kings and Kaweah rivers. (Source: Focused Biological Surveys for Eight Target Species in Tulare County, 1992, Woodward-Clyde Consultants, page 3-4)

LEPIDURUS PACKARDI

VERNAL POOL TADPOLE SHRIMP

Found in vernal pools in non-native annual grasslands. (Source: NDDB Report – Department of Fish and Game)

LYTTA HOPPINGI

HOPPING'S BLISTER BEETLE

Found in valley saltbush scrub and blue oak-foothill pine woodland. (Source: Biological Resources Survey Resource Conservation Element Update Kings County General Plan, 1993, Hansen's Biological Consulting – Rob Hansen, page 29)

LYTTA MOESTA

MOESTAN BLISTER BEETLE

Found in valley saltbush scrub and blue oak-foothill pine woodland. (Source: Biological Resources Survey Resource Conservation Element Update Kings County General Plan, 1993, Hansen's Biological Consulting – Rob Hansen, page 29)

LYTTA MOLESTA

MOLESTAN BLISTER BETTLE

Found in valley saltbush scrub and blue oak-foothill pine woodland. (Source: Biological Resources Survey Resource Conservation Element Update Kings County General Plan, 1993, Hansen's Biological Consulting – Rob Hansen, page 29)

MASTICOPHIS FLAGELLUM RUDDOCKI

SAN JOAQUIN WHIPSNAKE

Extirpated from Tulare County. (Source: Amphibian and Reptile species of Special Concern in California, 1994, California Department of Fish and Game, page 163)

MIMULUS PICTUS

CALICO MONKEYFLOWER

Found in bare, sunny areas around shrubs, rock outcrops on granitic soils, 100-1,300 meters in elevation. (Source: 1993 Jepson Manual, page 1044)

NORTHERN CLAYPAN VERNAL POOL

See Figure 3-1 in Focused Biological Surveys for Eight Target Species in Tulare County, 1992, Woodward-Clyde Consultants)

NORTHERN HARDPAN VERNAL POOL

See Figure 3-1 in Focused Biological Surveys for Eight Target Species in Tulare County, 1992, Woodward-Clyde Consultants)

ORCUTTIA INAEQUALIS

SAN JOAQUIN VALLEY ORCUTT GRASS

Found in vernal pools below 200 meters in elevation. (Source: 1993 Jepson Manual, page 1277) The plant has been completely extirpated from Tulare County. (Source: Annual Report on the Status of California State Listed Threatened and Endangered Animals and Plants, 1992, Department of Fish and Game, page 155)

PEROGNATHUS INORNATUS INORNATUS

SAN JOAQUIN POCKET MOUSE

Occurs up to 1,500 feet in elevation in grassland and blue oak savanna. (Source: Endangered Species Alert Program Manual, 1991, Southern California Edison, N-34)

PSEUDOBAHIA PEIRSONII

SAN JOAQUIN ADSOBE SUNBURST

Found in grassland, bare dark clay, 100-800 meters in elevation. (Source: 1993 Jepson Manual, page 328) See Figure 4-1 in Focused Biological Surveys for Eight Target Species in Tulare County, 1992, Woodward-Clyde Consultants, for occurrences of species.

RANA BOYLII

FOOTHILL YELLOW-LEGGED FROG

Occurs up to 1,940 meters in elevation in small to moderate-sized streams. Extirpated from Tulare County. (Source: Amphibian and Reptile Species of Special Concern in California, 1994, Department of Fish and Game, page 66)

SCAPHIOPUS HAMMONDII

WESTERN SPADEFOOT

Occurs up to 1,363 meters in elevation; requires temporary rainpools to reproduce and meto-morphose. (Source: Amphibian and Reptile Species of Special Concern in California, 1994, Department of Fish and Game, page 94)

SYCAMORE ALLUVIAN WOODLAND

Found in foothills and alluvial fans of depositional streams along the eastern and western margins of the San Joaquin Valley. (Source: Riparian and Wetland Habitats: Descriptions, Human Impacts, and Recommended Setbacks for Impact-Management, Draft Regional Report, Department of Fish and Game, Region 4, 1995, page 21)

TUCTORIA GREENEI

GREENE'S TUCTORIA

Found in vernal pools below 200 meters in elevation. (Source: 1993 Jepson Manual, page 1300)

VALLEY SACATON GRASSLAND

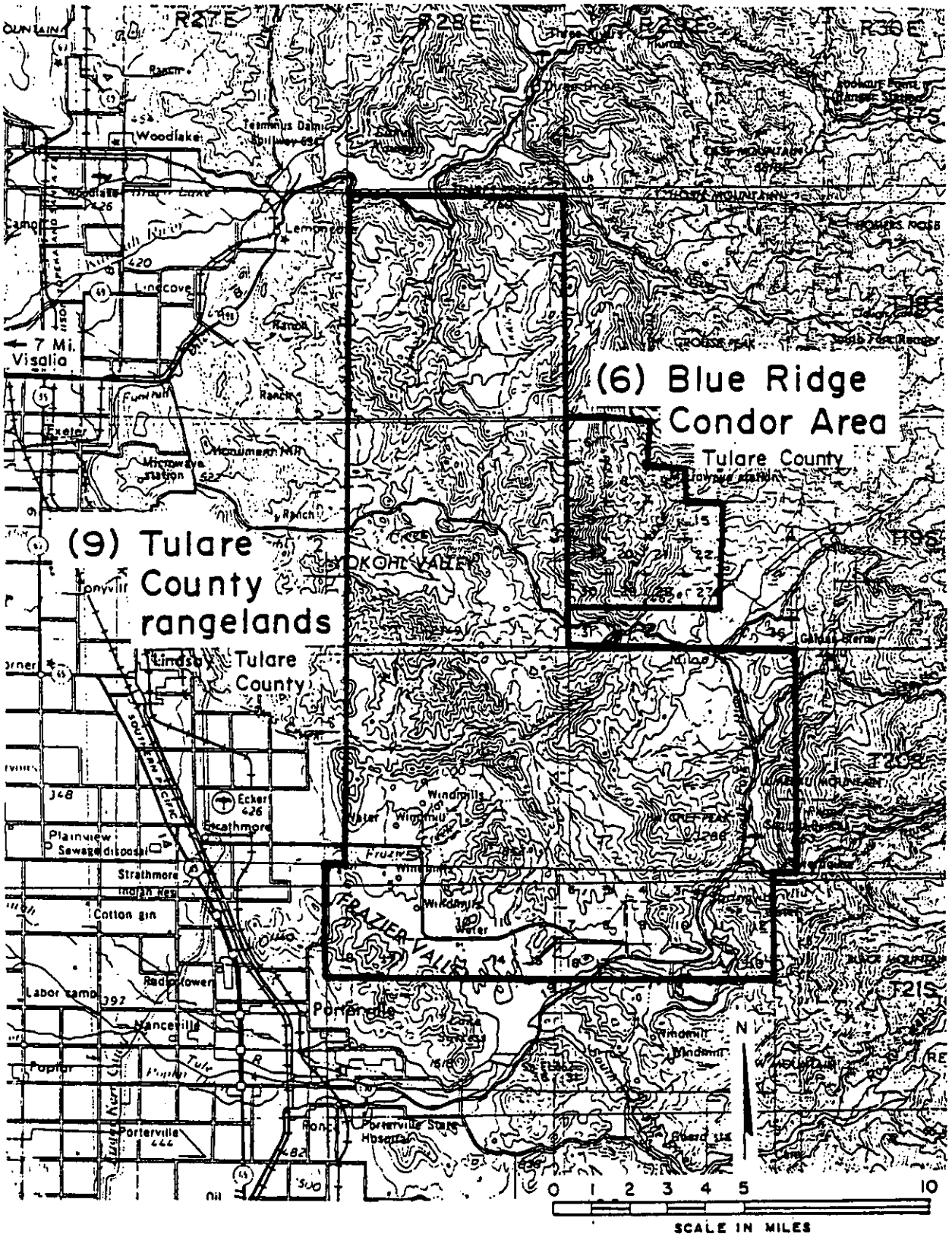
Native alkali vegetation.

VALLEY SALTBUSH SCRUB
Native alkali vegetation.

VALLEY SINK SCRUB
Native alkali vegetation.

VULPES MACROTIS MUTICA
SAN JOAQUIN KIT FOX
See attachment "D" for distribution. (Source: Recovery Plan for Upland Species of the San Joaquin Valley, California, 1998, U.S. Fish and Wildlife Service, page 125)

Attachment "A"



Mt. Diablo Meridian

DETERMINATION OF CRITICAL HABITAT
FOR
CALIFORNIA CONDOR

Reference: Federal Register, Vol. 41, No. 187, Sep. 24, 1976

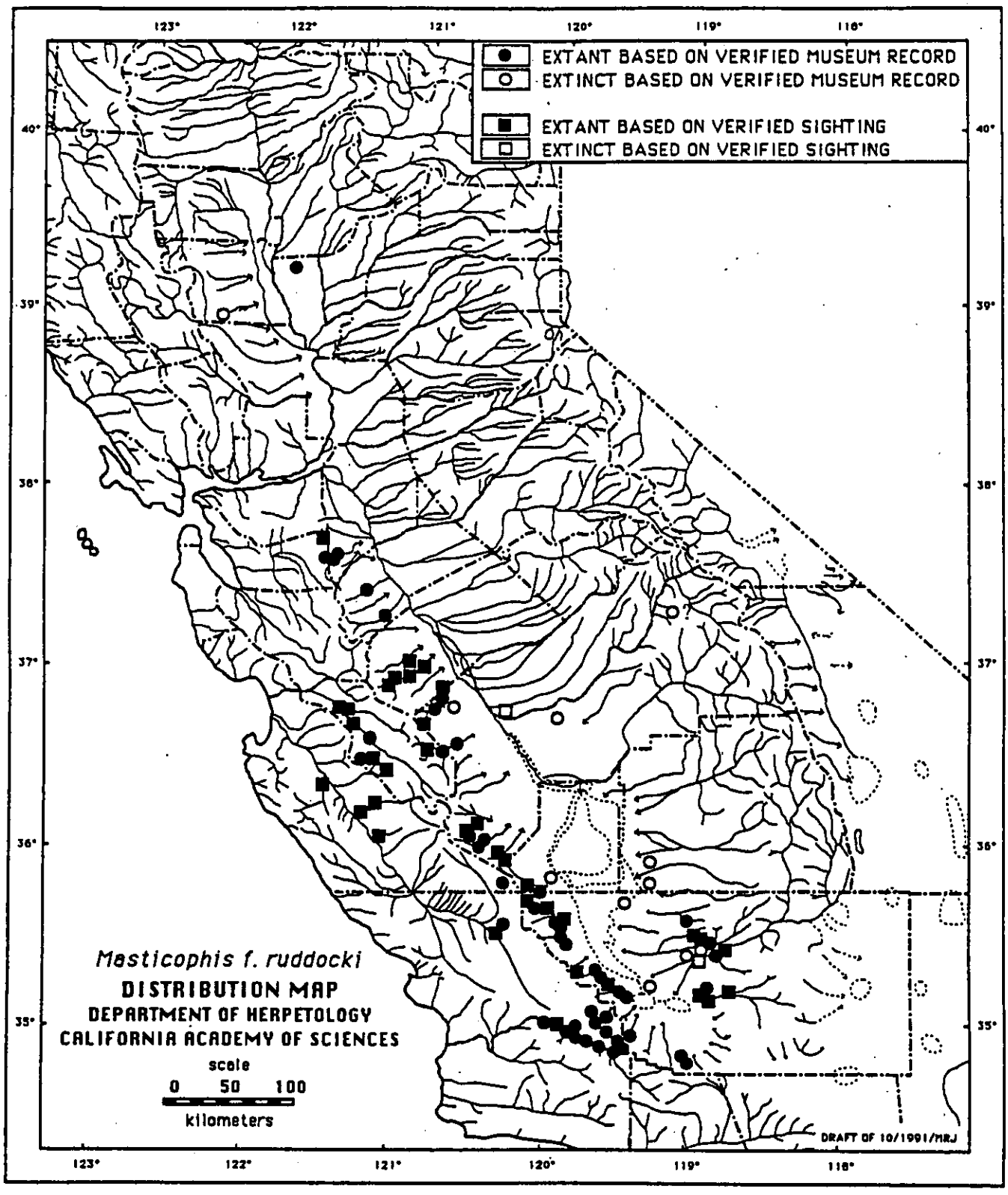


Figure 45. Historic and current distribution of the San Joaquin coachwhip (*Masticophis flagellum ruddocki*) in central and northern California based on 186 locations from 102 museum records and 98 records from other sources.

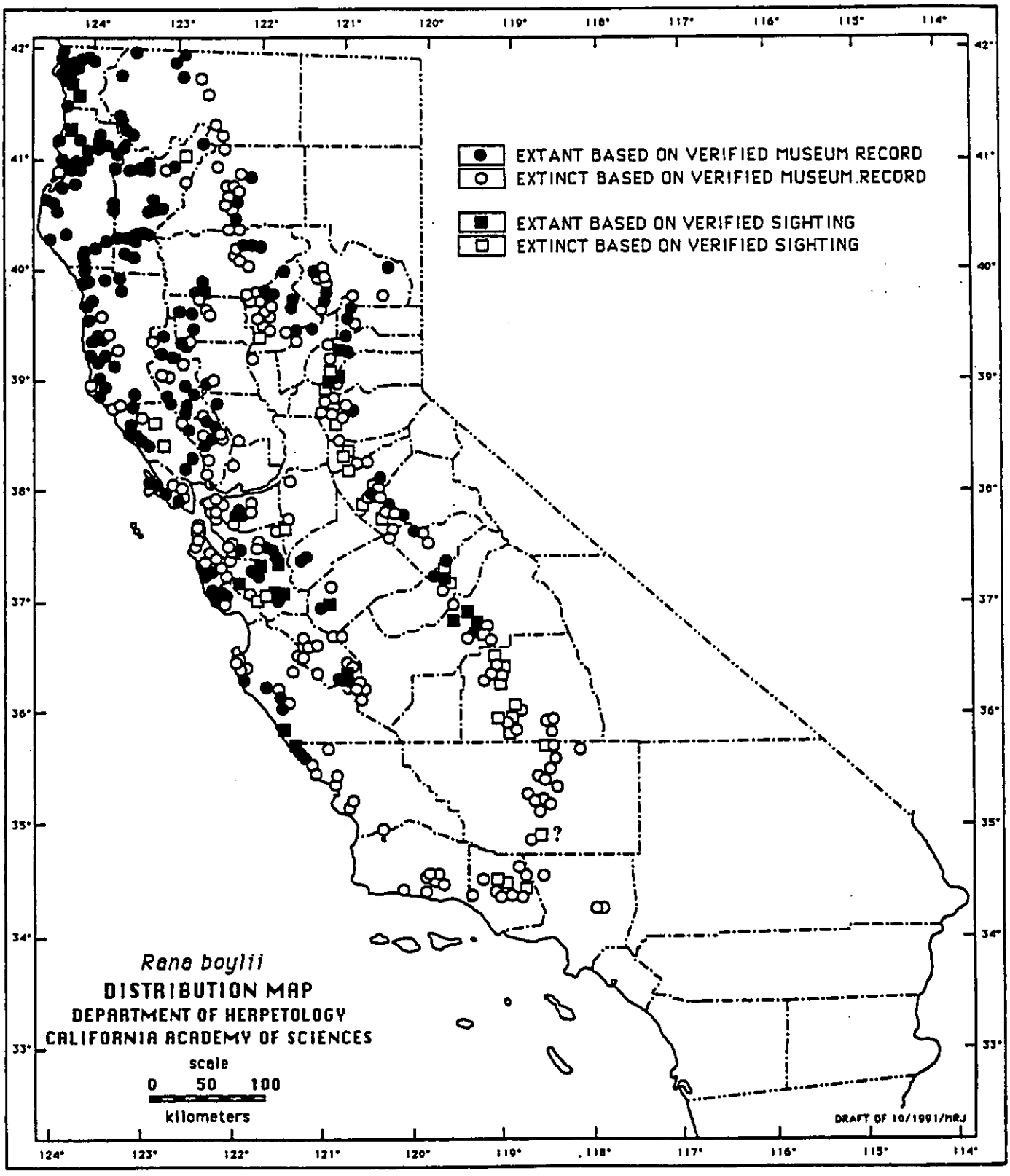


Figure 18. Historic and current distribution of the foothill yellow-legged frog (*Rana boylii*) in California based on 937 locations from 3195 museum records and 164 records from other sources.

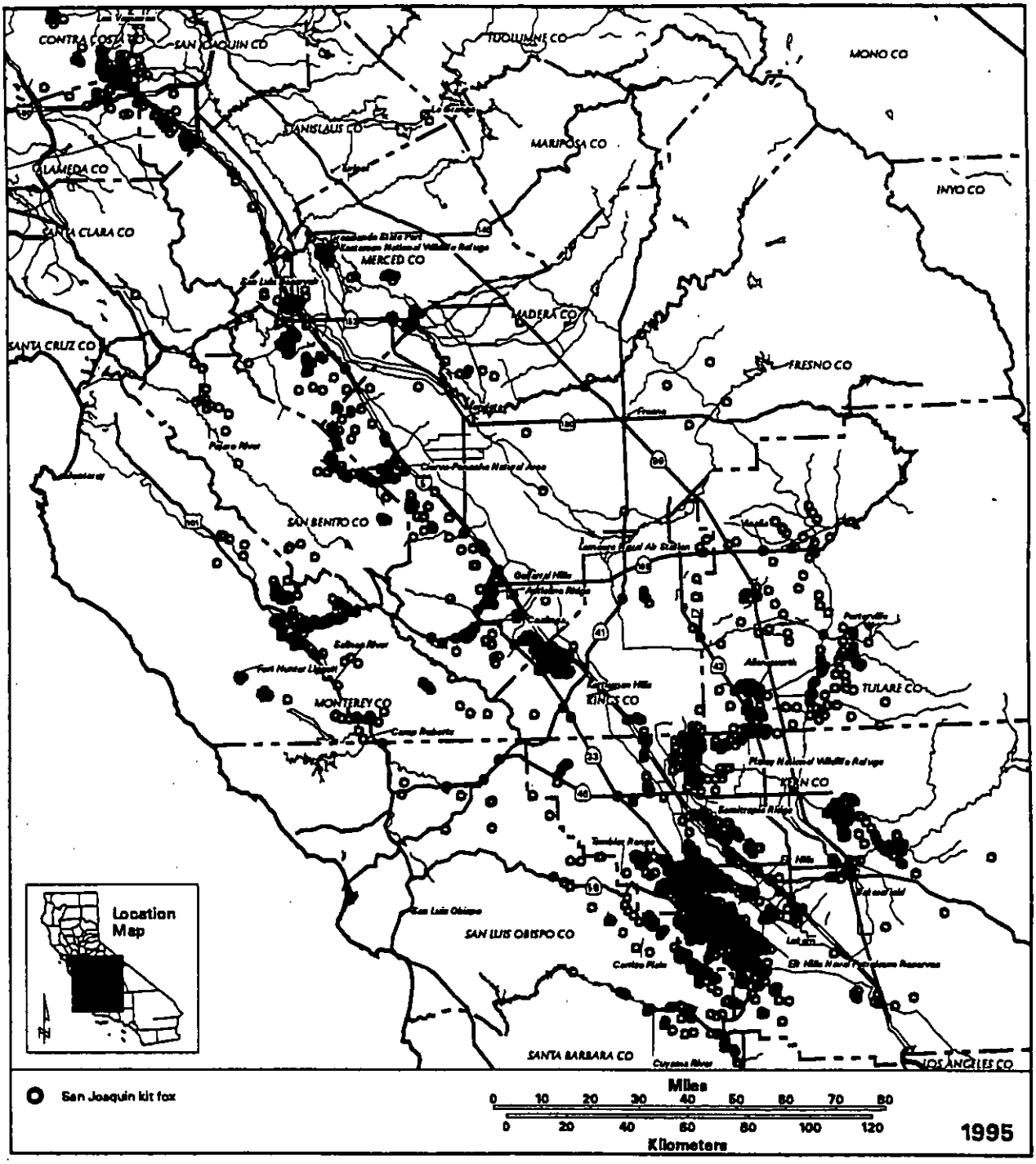
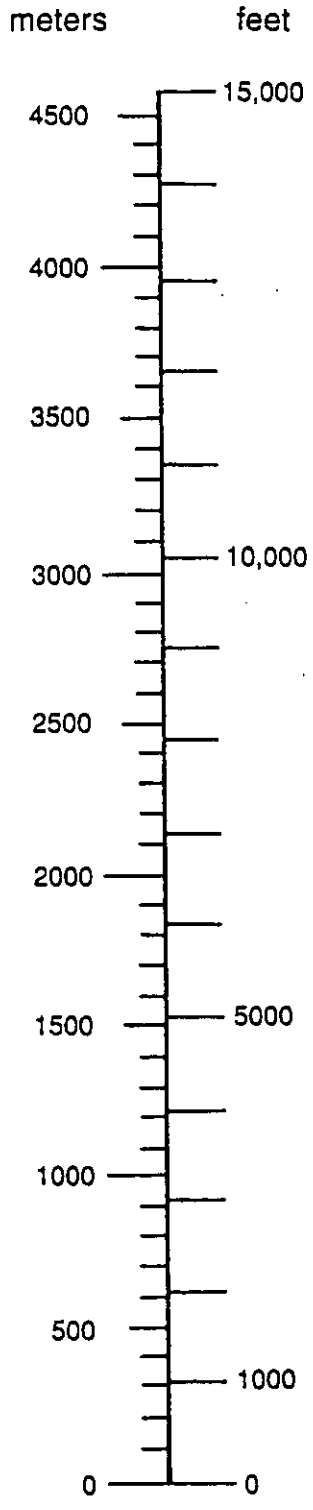


Figure 51. Map of distributional records for the San Joaquin kit fox *(Vulpes macrotis mutica).*



600' = 200 meters

APPENDIX M

Tulare Mosquito Abatement District
District Headquarters: Mefford Field - Tulare
P.O. Box 1476 Tulare CA 93275-1476
PH (559) 686-6628 FAX (559) 686-2013

DAIRY WASTE WATER MANAGEMENT FOR MOSQUITO CONTROL

Introduction

In the Southern San Joaquin Valley, improperly designed or managed dairy waste water systems are major sources of mosquito species which are both severe public health pests and potential vectors of St. Louis encephalitis and Western equine encephalomyelitis. These very serious viral diseases (commonly referred to as "sleeping sickness") occur, principally, in valley wild bird populations. Mosquitoes feeding upon infected birds may, in subsequent blood meals, transfer the disease to humans. Suppression of these mosquito species is critical to the prevention of epidemics.

Since these mosquito species (Culex tarsalis and Culex quinquefasiatus) breed prolifically in polluted and semi-polluted water, particularly when provided harborage from wind action and predators by weed growth or solid accumulation, inspection and control of dairy waste water impoundment's, are essential. The District, therefore, solicits your cooperation with the following requirements so that significant mosquito production will not occur. These include accessibility to the pond for District equipment, weed control and solid separation to prevent harborage and to enable effective larval spraying. District personnel will make inspections, treat as required and recommend to the owner steps to minimize any subsequent potential or existing vector problems.

Requirements of State Heath and Safety Code

The owner of any property who creates a nuisance by producing mosquitoes or other insects of public health importance may be cited before the District's Board of Trustee, which can issue an abatement order or levy civil penalties (of up to $500 per day) as provided in Section 2270, and following, of the State Health and Safety Code.

Continued

Requirements for Construction and Management of Dairy Waste Water Facilities to Accomplish Mosquito Control

1. All dairy waste water holding and solids separator ponds shall be surrounded by lanes at least twenty feet in width and nothing (i.e., calf pens, utility lines, hay stacks, silage, tires, ag-equipment, etc.) shall be placed in the area of the holding ponds which would prevent passage or use of vector control equipment.

2. Fencing around the waste water and solids ponds shall be placed on the outside of the twenty foot lane and gates provided for easy access.

3. All four interior banks of holding and separation ponds shall be graded 1:1 or steeper for the first ten feet, soil type permitting, but no greater than 1:2.

4. Two or more solids separator ponds are required. These ponds shall not be more than sixty feet in width.

5. No drainage lines shall by pass the separator ponds, except those which provide for normal corral run-off. All such drain inlets must be sufficiently grated to prevent solids accumulation in the holding ponds.

6. Floatage of solid substance which could provide harborage for immature mosquito stages shall be kept out of all waste water holding ponds. Mechanical agitators may be very helpful in this regard.

7. The owner shall be responsible for keeping vegetative growth from all areas of the waste water and solids separation ponds. This includes access lanes, interior pond embankments and any weed growth which might become established on pond surfaces.

8. Dairy waste water discharged for irrigation purposes shall be managed so that it does not stand for more than four days. Discharges which do stand for more than four days could cause severe mosquito emergence.

9. Any deviations desired from these requirements must be submitted to the District for its prior review and approval.

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Manager

Eva F. Garcia
Office Manager

DELTA VECTOR CONTROL DISTRICT

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1737 West Houston Avenue • Visalia, California 93291
Telephone (559) 732-8606 • FAX (559) 732-7441
E-mail: deltavcd@aol.com

Rick Loop
Superintendent

Yolanda M. Lourenco
Biologist

REQUIREMENTS FOR CONSTRUCTION AND MANAGEMENT OF DAIRY WASTE WATER SYSTEMS

August 19, 1999

1. Wastewater holding ponds shall not exceed 100 feet in width.

2. All dairy wastewater holding and solids separator ponds shall be surrounded by lanes at least twenty feet in width and nothing (i.e., calf pens, utility poles, hay stacks, silage, tires, ag-equipment, etc.) shall be placed in the area of the holding ponds which would prevent passage or use of vector control equipment.

3. Fencing around the wastewater and solids ponds shall be placed on the outside of the twenty-foot lanes and gates provided for easy access.

4. All four interior banks of holding and separation ponds shall be graded 1:1 or steeper for the first ten feet, soil type permitting, but no greater than 1:2.

5. Two or more solids separator ponds are required. These ponds shall not be more than sixty-feet in width.

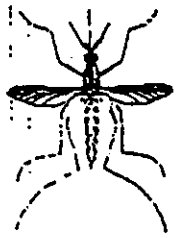
6. No drainage lines shall by-pass the separator ponds, except those, which provide for normal corral run-off. All such drain inlets must be sufficiently grated to prevent solids accumulation in the holding ponds.

7. Floatage of any solid substance, which could provide harborage for immature mosquito stages should be, kept out of all wastewater holding ponds. Mechanical agitators may be very helpful in this regard.

8. The owner shall be responsible for keeping vegetative growth from all areas of the wastewater and solids separation ponds. This includes access lanes, interior pond embankments and any weed growth, which might become established on pond surfaces. Weed control within the Delta Vector Control District can be achieved by cooperating in the District's weed control program.

9. Dairy wastewater discharge for irrigation purposes shall be managed so that it does not stand for more than four days. Discharges which do stand for more than four days could cause severe mosquito emergence.

10. Any deviations desired from these requirements must be submitted to the District for its review and approval prior to construction.



DELANO
MOSQUITO ABATEMENT DISTRICT

DISTRICT OFFICE - 11261 Garzoli Ave.
Mail Address: P.O. Box 220
DELANO CALIFORNIA 93216
Telephone (805) 725-3114 - Fax (805) 725-3179

RALPH T. ALLS, Ph. D.
Manager - Biologist

1. Wastewater holding ponds shall not exceed 100' in width. This width size facilitates chemical treatments when and if they become necessary.

2. All dairy wastewater holding and solids separator ponds shall be surrounded by lanes at least 20' in width and nothing (i.e. calf pens, utility lines, hay stacks, silage, tires, ag-equipment, etc.) shall be placed in the area of the holding ponds which would prevent the passage or use of Vector Control equipment.

3. Fencing around the wastewater and solids ponds shall be placed on the outside of the 20 foot lanes and gates shall be provided for easy access.

4. All four interior banks of the holding and separation ponds shall be graded 1:1 or steeper for the first 10', soil type permitting, but no greater than 1:2.

5. Two or more solids separator ponds are required. These ponds shall not be more than 60' in width.

6. No drainage lines shall by-pass the separator ponds, except those which provide for normal corral run-off. All such drain inlets must be sufficiently grated to prevent solids accumulation in the holding ponds.

7. Floatage of any solid substance which could provide harborage for immature mosquito stages shall be kept out of all wastewater holding ponds.

8. The owner shall be responsible for keeping vegetative growth from all areas of the wastewater and solids separation ponds. This includes access lanes, interior pond embankments and any weed growth which might become established on pond surfaces.

9. Dairy wastewater discharged for irrigation purposes shall be managed so that it does not stand for more than four days. Discharges which do stand for more than four days could cause severe mosquito emergence.

10. ANY deviations desired from these requirements must be submitted to the District for its prior review and approval.

APPENDIX N

BEFORE THE BOARD OF SUPERVISORS

COUNTY OF TULARE, STATE OF CALIFORNIA

IN THE MATTER OF A REQUEST BY THE AG ADVISORY COMMITTEE, FOR THE BOARD TO ADOPT THE AAC'S RECOMMENDED DAIRY/ANIMAL CONFINEMENT FACILITY POLICIES ON AN INTERIM BASIS	)))))	RESOLUTION NO. 98-0582

UPON MOTION OF SUPERVISOR Richmond , SECONDED BY SUPERVISOR Maples , THE FOLLOWING WAS ADOPTED BY THE BOARD OF SUPERVISORS, AT AN OFFICIAL MEETING HELD JUNE 30, 1998, BY THE FOLLOWING VOTE:

AYES: Supervisors Sanders, Richmond, Maze, Harness, Maples

NOES: None
ABSTAIN: None
ABSENT: None

RMA
g. Comm.
uditor
CAO
N 12397

6/30/98
c

BOARD OF SUPERVISORS * TULARE COUNTY, CAL. *

ATTEST: THOMAS F. CAMPANELLA
COUNTY ADMINISTRATIVE OFFICER
CLERK, BOARD OF SUPERVISORS

BY: Janice Otton
Deputy Clerk

****

Adopt the Agricultural Advisory Committee's recommended "Tulare County Dairy/Animal Confinement Facility Policies" (as per 'Exhibit A') as interim policy until the proposal is adopted as part of the Tulare County General Plan.

BEFORE THE PLANNING COMMISSION

COUNTY OF TULARE, STATE OF CALIFORNIA

IN THE MATTER OF AMENDMENT TO THE ANIMAL WASTE MANAGEMENT ELEMENT: INTERIM CRITERIA FOR APPROVAL OF NEW CONCENTRATED ANIMAL-RAISING FACILITIES	RESOLUTION NO. 7693

Resolution of the Planning Commission of the County of Tulare establishing interim locational and animal density criteria for new dairy/confined animal facilities.

WHEREAS, in 1974 this Planning Commission adopted the Animal Waste Management Element, which sets forth Guidelines for Approval of New Concentrated Animal-Raising Operations, and

WHEREAS, said Guidelines set forth six criteria, related to animal facility site location and animal density concerns, that are to be met in submitted plans before approval of special use permits for new dairy or feedlot operations can be granted, and

WHEREAS, as directed by the Board of Supervisors, the Tulare County Agricultural Advisory Committee (AAC) has adopted a set of revised Dairy/Animal Confinement Facility Policies for incorporation into the pending amendment to the County General Plan, and

WHEREAS, the AAC has recommended adoption of temporary revisions to the Guidelines, until the general plan is amended, because scientific information provided by University of California Cooperative Extension Service staff and utilized in the AAC recommendations demonstrates that dairy/animal confinement facilities with waste loading discharges which exceed those recommendations could have a serious impact on water quality in the County, and

WHEREAS, the AAC also recommends that the waste loading provisions of the Interim Policies be applied to all future extensions of time for dairies previously approved by the Planning Commission, and

WHEREAS, the purpose of the interim animal facility locational and density criteria is to assure that new dairies and animal confinement facilities considered by Tulare County in the interim until the new policies are adopted by the Board of Supervisors are in compliance with contemporary science, so as to prevent potential pollution of groundwater and soils from concentrations of animals generating waste products, and

WHEREAS, the use of the AAC's recommended Dairy/Animal Confinement Facility Policies shall only be temporary until final policies are adopted as part of the Tulare County General Plan, which will require CEQA review and public hearings, and shall only be for evaluating those new dairies and confined animal facilities applied for after June 10, 1998.

NOW, THEREFORE BE IT RESOLVED THAT:

As an interim measure, the Planning Commission of the County of Tulare hereby adopts the recommended "Tulare County Dairy/Animal Confinement Facility Policies" adopted by the Agricultural Advisory Committee on May 26, 1998, and attached hereto as 'Exhibit A', for use in place of the Planning Commission's Guidelines for Approval of New Concentrated Animal-Raising Operations contained in the Animal Waste Management Element (to apply only to those applications for new dairies and confined animal facilities that are submitted to the Tulare County Resource Management Agency after June 10, 1998).

The foregoing resolution was adopted upon motion of Commissioner Wheeler, seconded by Commissioner Kirkpatrick, at a regular meeting of the Planning Commission on the 10th day of June, 1998, by the following roll call vote:

AYES: Espino, Kirkpatrick, Millwee, Wheeler
NOES: Fernandes
ABSTAIN: None
ABSENT: Kapheim

TULARE COUNTY PLANNING COMMISSION

George E. Finney, Secretary

'Exhibit A'

TULARE COUNTY
DAIRY/ANIMAL CONFINEMENT FACILITY POLICIES

[Adopted by the Tulare County Agricultural Advisory Committee on May 26, 1998, for recommendation to the Tulare County Board of Supervisors.]

NOTE: These policies are intended for consideration of proposed operations for the raising or raising and slaughter of bovine animals, swine, sheep, goats, horses, mules, and other similar domesticated quadrupeds, when a Use Permit is required under the Tulare County Zoning Ordinance. Other types of animal facilities, such as aviaries, apiaries, the raising and/or slaughter of rabbits, etc., shall be considered on their own merits, based on historical decisions and new scientific information. Additionally, poultry-raising facilities are not covered by these policies -- refer to the (AAC's recommended) TULARE COUNTY POULTRY FACILITY LOCATIONAL POLICIES for poultry facility locational information.

Dairies and other animal confinement facilities may be located in the following zones after approval of a Special Use Permit: AE (Exclusive Agricultural), AE-20 (Exclusive Agricultural, 20 acre minimum), AE-40 (Exclusive Agricultural, 40 acre minimum), AE-80 (Exclusive Agricultural, 80 acre minimum), AF (Foothill Agricultural), and A-1 (Agricultural).

DEFINITIONS:

Animal Confinement Facility. Where used, the term "animal confinement facility" includes animal barns, corrals, or pens; feed (excluding hay barns) and manure storage and handling areas; and wastewater lagoons/sumps. When measuring setbacks and distances between animal facilities, measurements shall be taken from or between the most proximate part of the above-described facilities. Areas used for crop production or not otherwise utilized in the production of animals shall not be included for purposes of determining said setbacks and distances.

Crop Acreage. Irrigable portion of the total/gross subject parcel(s), including wastewater conveyance ditches, that is to be used for wastewater discharge and which excludes buildings, corrals and/or pens, feed and/or manure storage areas, lagoons/sumps, canals, waterways, and public road right-of-ways.

Animal Unit. A common animal denominator, based on feed consumption, whereas one mature cow (1,400 pounds) represents one animal unit, as defined by the Regional Water Quality Control Board.

POLICIES:

1. A new dairy site shall contain at least 160 acres (gross). Other new animal confinement facility sites shall contain at least 80 acres (gross).

2. The maximum density of animals on a new dairy/concentrated animal raising operation shall not exceed four (4) animal units per crop acre, unless adequate *measures* are provided to prevent the unacceptable nitrification or salt pollution of soils and the pollution of groundwater by nitrates and salts emanating from this facility. Such measures shall include plans to demonstrate that animal wastes are evenly distributed over the site's crop acres, how much of the site will be double cropped, and any plans for disposal of animal wastes off site. Ultimately, the number of animals allowed on a project site shall be based on nitrogen and salt loading rates so that onsite wastewater (including precipitation and drainage) and manure are discharged or applied to disposal fields or crop lands at rates of application that are appropriate for the crop, soil, climate, special local situations, management system, and type of waste product. The Regional Water Quality Control Board shall determine the adequacy of loading rate plans to assure the preceding.

The following table sets forth the parameters for the maximum allowable Animal Units (A.U.s) per Crop Acre for different dairy development and operating scenarios that may be utilized for individual dairies:

Animal Housing Type	Cropping Program♣	Solids Disposal Method/Location	Maximum Animal Units per Crop Acre		
			50%N♦	60%N♦	70%N♦
Open corral (all)	Double	Off site (100%)	9.71	8.13	6.71
Open corral (all)	Single	Off site (100%)	6.94	5.78	4.98
Open corral (all)	Double	On site (100%)	5.85	4.85	4.17
Open corral (all)	Single	On site (100%)	4.17	3.47	2.98
Free stall & Open corl*	Double	Off site (100%)	7.81	6.54	5.59
Free stall & Open corl*	Single	Off site (100%)	5.59	4.65	4.00
Free stall & Open corl*	Double	On site (100%)	5.85	4.85	4.17
Free stall & Open corl*	Single	On site (100%)	4.17	3.47	2.98

ASSUMPTIONS for Ratios for Scenarios between Upper and Lower Parameters:

* Free stall = 60% milk cows and Open corral = 40% support stock *

♣ Double cropping based on 350 pounds of Nitrogen utilized per acre and Single cropping based on 250 pounds of Nitrogen utilized per acre (Double crop = 1.4 x Single crop) ♣

♦ Percentage of Nitrogen remaining = function of the number of days wastewater has been in the lagoon [>60 days in lagoon = 50% N remains; 30-60 days in lagoon = 60% N remains; <30 days in lagoon = 70% N remains] ♦

However, in all cases, the maximum total animal density on the dairy site shall not exceed ten (10) animal units per crop acre, and the maximum density of cows in milk on site shall not exceed eight (8) per crop acre. For confined animal facilities other than dairies, the maximum on-site density shall not exceed ten (10) animal units per crop acre.

An "ANIMAL UNIT" is the feed equivalent of one milk cow, as follows:

Classification	Animal Units per Head
Dairy cows in milk and bulls	1.00
Dry cows and heifers more than two years of age	0.75
Heifers one year to two years (beef or dairy)	0.70
Heifers three months to one year (beef or dairy)	0.40
Calves to three months of age	0.25
Beef cows in milk and feedlot steers	0.75
Horses more than six months of age	0.75
Foals to six months of age	0.50
Sows and boars (200 pounds or more)	0.50
Feeder pigs (less than 200 pounds)	0.20
Sheep and goats	0.17
Poultry	0.02
Ostriches	0.40
Emus and rheas	0.17

3. The addition of a new dairy/concentrated animal-raising operation shall not cause the maximum density of total animals to exceed four animal units per *gross* acre in an area within a one-mile radius from the perimeter of the proposed new animal facility site and for any existing animal operation within that one-mile area.

4. A new dairy or other animal confinement facility shall not be located as follows: within any Windshed Area for incorporated and unincorporated communities or within the Windsheds for areas zoned for residential use and containing at least thirty (30) dwelling units (for which the Windshed Area shall be measured from the outermost residential zoning boundary) — a 'Windshed Area' is defined as a one-mile setback from an incorporated or unincorporated community's Urban Development Boundary or urban-type residential boundary line; within primary floodplains; within 1000 feet of the boundary of a public park or school grounds; in sink holes or areas draining into sink holes; or within one-half mile (2640 feet) of the nearest point of a dwelling structure in a concentration of ten (10) or more occupied private residences [to qualify as a 'concentration', such residences must be occupied, located within a contiguous area, and exceed a density of one dwelling unit per acre, excluding travel trailers].

5. A new dairy or other animal confinement facility shall not be located closer than the distances shown on Micro-Windshed Diagram 'A' (Residential) to an occupied dwelling owned by a property owner other than the animal confinement facility site owner/operator or employee.

   A new dairy or other animal confinement facility shall not be located closer than the distances shown on Micro-Windshed Diagram 'B' (Agricultural) to an established citrus grove, vineyard, deciduous fruit/nut orchard, or vegetable agricultural enterprise.

6. New dairy and other animal confinement facilities (animal barns, corrals, and pens; manure and feed storage areas excluding hay barns; wastewater lagoons/sumps) shall be located at least one-quarter mile (1320 feet) from the nearest dairy, swine, or other animal raising facility and at least one-half mile(2640 feet) from the nearest poultry-raising facility. These separations are required to avoid potential nuisance problems, disease transmission, and soil and groundwater contamination.

   ** In addition, buildings housing dairy animals, corrals, sump pits, and silage and haylage storage areas for a new dairy should not be located closer than 100 feet from all property lines at the perimeter of the new dairy site. [** NOTE: The aforecited 100' setback is not included in the AAC's recommended Policies; it was adopted by the Planning Commission on July 23, 1997 (by Resolution No. 7613) and is still applicable in the interim.]

7. These above regulations shall not apply to the repair, maintenance, replacement, and upgrading of a legally-existing dairy or other animal confinement facility, provided that such work does not increase the animal capacity of the facility.
   New or expansions of existing dairy or other animal confinement facilities that do not meet the above policies will be considered on a case-by-case basis, subject to the Special Use Permit.

APPENDIX O

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APPENDIX P

CONTRIBUTORS TO THE REPORT

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Jennifer Munn, Project Planner
Mike Hickey, Geographic Information System (GIS) Analyst
Mark Clark, Geographic Information System (GIS) Analyst

CONSULTANT

Janet Jiggerian

TULARE COUNTY AGRICULTURAL ADVISORY COMMITTEE

Members	Area of Representation
John Kirkpatrick	Board of Supervisor's District One
Ben Curti	Board of Supervisor's District Two
Robert Smith	Board of Supervisor's District Three
Ronald Orlopp, Chair	Board of Supervisor's District Four
Steve Drumright	Board of Supervisor's District Five
Dan Bennetts	Board of Supervisor's At-Large #1
Tony Souza	Board of supervisor's At-Large #2
David Sharp	Tulare County Farm Bureau
Ronald Bevers	Solid Waste Management Technical Advisory Comm.
Tony Salierno	Building Industry Association
Roy Pennebaker	Real Estate Industry
Arthur Cowley	Environmental Group
Phyllis Coring	Cities
Jim Sullins, Vice Chair	U.C. Cooperative Extension Service
Lenord Craft	Tulare County Agricultural Commissioner
Larry Dwoskin	Tulare County Enviromental Health Division
George Finney	Tulare County Resource Management Agency
Julia Roberts	County Counsel (non-voting member)

DAIRY SUBCOMMITTEE of the AGRICULTURAL ADVISORY COMMITTEE

Jim Sullins, University of California Cooperative Extension, Tulare County Director
Tom Shultz, University of California Cooperative Extension, Tulare County Dairy Advisor
Bruce Jensen, former Tulare County Planning Commissioner and retired College of the Sequoias Dairy Instructor
Ben Curti, Tulare County Dairyman
Tony Souza, Tulare County Dairyman

APPENDIX Q

DRAFT

SUPPLEMENTAL ENVIRONMENTAL QUESTIONNAIRE

Note: This questionnaire is to be completed pursuant to Program EIR No. GPA 99-05 (SCH #9903144) prepared for Phase 1 of the Animal Confinement Facilities Plan of the Tulare County General Plan. The purpose of this questionnaire is to determine which, if any, potential environmental impacts identified in the PEIR apply to this specific project and to incorporate appropriate mitigation measures. In completing this questionnaire, provide source documentation.

SOILS, GEOLOGY, HYDROLOGY AND WATER QUALITY:

Provide the following site-specific information for evaluation of the level of significance of potential impacts and incorporation of appropriate mitigation measures:

Type of on-site soil(s):

Soil Permeability Rating:

Soil Leaching Potential Rating:

Recent Depth to Groundwater:

Highest Recorded Depth to Groundwater:

Current Crop Use:

Proposed Crop Use: Estimated Water Usage:

Source of Water:

Flooding Potential:

IDENTIFIED POTENTIAL IMPACTS: (Refer to PEIR GPA 99-05 for complete discussion of impacts and mitigation measures.)

Impact # 4.3.1-1: *Soil contamination and degradation of groundwater quality.*

Site-Specific Discussion:

Impact # 4.3.1-2: *Degradation of surface water quality.*

Site-Specific Discussion:

Impact #4.3.1-3: ***Exposure of people or property to water related hazards such as flooding or inundation.***

Site-Specific Discussion:

Impact #4.3.1-4: Depletion of water resources.

Site-SpecificDiscussion:

MITIGATION MEASURES: (Check those Mitigation Measures that apply based on impacts identified.)

_____ **Mitigation Measure #4.3.1-1:** Application of dry or liquid nutrient matter to agricultural fields at an acceptable agronomic rate based on soil type and cropping pattern. Applies to Impacts #4.3.1-1 and #4.3.1-3.

_____ **Mitigation Measure #4.3.1-2:** Design and construction of wastewater holding ponds shall be accordance with Title 27 of the California Code of Regulations (Water Code) including, but not limited to, the requirement for the pond to be lined with, or underlain by, soils which contain at least 10 percent clay and not more than 10 percent gravel, or be lined with artificial materials of equivalent impermeability. Applies to Impact #4.3.1-1.

_____ **Mitigation Measure #4.3.1-3:** Design and construct the waste storage ponds to adequate size to hold a minimum of 120 days accumulation of waste and wash water plus the surface runoff from one 25-year, 24-hour storm while maintaining a minimum of two foot freeboard. Applies to Impact #4.3.1-2 and #4.3.1-3.

_____ **Mitigation Measure #4.3.1-4:** Application and issuance of a NPDES Permit. Applies to Impact #4.3.1-2.

_____ **Mitigation Measure #4.3.1-5:** Preparation and submittal of a Comprehensive Nutrient Management Plan (CNMP) for all existing and proposed animal confinement facilities. Applies to Impacts #4.3.1-1 and #4.3.1-2.

_____ **Mitigation Measure #4.3.1-6:** Submittal of an Annual Compliance Report for all animal confinement facilities in the county and compliance inspections for each facility at least once every five years. Applies to Impacts #4.3.1-1 and #4.3.1-2.

_____ **Mitigation Measure #4.3.1-7:** At the time of application submittal for new dairies and other animal confinement facilities, a geo/hydro report prepared by an appropriately accredited professional shall be submitted which documents the

existing soil and groundwater conditions for a project site. Applies to Impact #4.3.1-1.

_____ **Mitigation Measure #4.3.1-8:** Installation of wells to monitor nitrate and salt levels for all new dairy and other animal confinement facilities. Applies to Impact #4.3.1-1.

TRAFFIC & CIRCULATION:

Provide the following site-specific information for evaluation of the level of significance of potential impacts and incorporation of appropriate mitigation measures:

Estimated Number of Truck Trips per day:

Estimated Number of Vehicle Trips per day:

Primary Access Roads:

Existing Right-of-way Width:

Planned Ultimate Right-of-way Width:

Improvement Status of Primary Access Roads:

IDENTIFIED POTENTIAL IMPACTS: (Refer to PEIR GPA 99-05 for complete discussion of impacts and mitigation measures.)

Impact #4.3.2-1: *Increased traffic generation.*

Site-Specific Discussion:

Impact #4.3.2-2: *Accelerated physical deterioration of public and/or private roads.*

Site-Specific Discusion:

MITIGATION MEASURES: (Check those Mitigation Measures that apply based on impacts identified.)

_____ **Mitigation Measure #4.3.2-1:** Developers of new dairy and other animal confinement operations shall be responsible for constructing all impacted local rural roads to an engineered standard established by the Tulare County RMA from the development access point(s) to a Select System road. The specific mitigation will be site and project specific – individual projects will only be responsible for impacts attributed to and reasonably related to the project. It is recognized that

this measure may prove to be infeasible at the individual project level, if the proponent can demonstrate that the actual costs of road construction make the mitigation measure infeasible. An additional option would be the abandonment of public road(s) if the applicant agrees to maintain the roads to a standard that minimizes mud and dust. Applies to Impacts #4.3.2-1 and #4.3.2-2.

_____ **Mitigation Measure #4.3.2-3:** Prohibit new dairies and other animal confinement facilities in areas where the existing roads cannot handle any more traffic. Applies to Impact #4.3.2-2.

AIR QUALITY:

Provide the following site-specific information for evaluation of the level of significance of potential impacts and incorporation of appropriate mitigation measures:

Total Number of Animals (not animal units) Proposed:

Existing Agricultural Crops:

Proposed Agricultural Crops:

Cropping Patterns:

Proposed Method of Solid Manure Disposal: (e.g., composting)

Estimated Number of Truck/Vehicle Trips:

IDENTIFIED POTENTIAL IMPACTS: (Refer to PEIR GPA 99-05 for complete discussion of impacts and mitigation measures.)

Impact #4.3.3-1: *Generation of emissions from construction activities.*

Site-Specific Discussion:

Impact #4.3.3-2: *Increase in exhaust emissions (ROG, NO_x, CO) from operational equipment.*

Site-Specific Discussion:

Impact #4.3.3-3: *Increase in secondary pollutants (ROG, hydrogen sulfide, ammonia, etc.).*

Site-Specific Discussion:

Impact #4.3.3-4: *Increase in methane emissions .*

Site-Specific Discussion:

Impact #4.3.3-5: *Increase in fugitive dust emissions from dairy operations.*

Site-Specific Discussion:

Impact #4.3.3-6: *Exposure of sensitive receptors to substantial pollutant concentrations.*

Site-Specific Discussion:

Impact #4.3.3-7: *Creation of objectionable odors affecting a substantial number of people.*

Site-Specific Discussion:

MITIGATION MEASURES: (Check those Mitigation Measures that apply based on impacts identified.)

_____ **Mitigation Measure #4.3.3-1:** Implementation of dust control measures as outlined in SJVUAPCD Regulation VIII and Enhanced and Additional Control Measures. Applies to Impacts #4.3.3-1, #4.3.3-2 and #4.3.3-3.

BIOLOGY:

Provide the following site-specific information for evaluation of the level of significance of potential impacts and incorporation of appropriate mitigation measures:

Land Use and/or Cropping Patterns for Past 5 Years:

Location of Waterways traversing or Adjacent to the Site:

Proximity of Site to Pasture or Range land:

Location (within one mile radius) from Established Refuge/Preserve/Reserve or Native/Naturalized Areas:

Previous Biological Surveys:

IDENTIFIED POTENTIAL IMPACTS: (Refer to PEIR GPA 99-05 for complete discussion of impacts and mitigation measures.)

Impact #4.3.4-1: *Loss and/or degradation of habitat.*

Site-Specific Discussion:

Impact #4.3.4-2: *Loss and/or degradation of vernal pools and other wetlands.*

Site-Specific Discussion:

Impact #4.3.4-3: *Loss and/or degradation of riparian habitat.*

Site-Specific Discussion:

Impact #4.3.4-4: *Injury or mortality to listed species.*

Site-Specific Discussion:

Impact #4.3.4-5: *Interference with the activities of night-active wildlife.*

Site-Specific Discussion:

MITIGATION MEASURES: (Check those Mitigation Measures that apply based on impacts identified.)

_____ **Mitigation Measure #4.3.4-1:** Prior to approval of a development project, biological surveys, conducted by qualified biological specialists, shall be required for properties that: contain pasture or rangeland; have waterways traversing the property; are located with a one mile radius of an established refuge/preserve/reserve, or native/naturalized areas. The surveys shall be conducted in compliance with U.S. Fish and Wildlife Service and the California Department of Fish and Game Survey Guidelines (Refer to Appendix S of this document for these Guidelines.) Based on the results of the survey, the biologist shall recommend measures to avoid or minimize impacts on identified biological resources. These measures may include, but are not limited to, setting aside habitat on-site or providing protection of habitat in another location; locating project features at least 100 feet away from stream banks, lakes and riparian habitat; providing appropriate buffers to protect any watershed into vernal pools and other wetlands; and designing dairy projects in flood prone areas so that sensitive resources on and off the site will not be inundated with dairy waste or

wastewater during flood events. Applies to Impacts #4.3.4-1, #4.3.4-2, #4.3.4-3 and #4.3.4-4.

_____ **Mitigation Measure #4.3.4-2:** Project-related lighting should be minimized and directed away from sensitive areas.

AGRICULTURE:

Provide the following site-specific information for evaluation of the level of significance of potential impacts and incorporation of appropriate mitigation measures:

Amount of Land to be taken out of Production for Improvements:

Amount of Land to be converted to Cropland (if any):

Zoning of Area to be Converted to Improvements:

Zoning of Area to be Utilized for Waste Disposal:

Williamson Act Contract:

Proximity to Permanent Crops (groves, orchards, vineyards) or Vegetable Crops:

Proximity to Residences:

Proximity to Other Animal Confinement Facilities:

IDENTIFIED POTENTIAL IMPACTS: (Refer to PEIR GPA 99-05 for complete discussion of impacts and mitigation measures.)

Impact #4.3.5-1: *Conversion of farmland.*

Site-Specific Discussion:

Impact #4.3.5-2: *Conflict with zoning regulations, Williamson Act or land use plans or policies.*

Site-Specific Discussion:

Impact #4.3.5-3: *Potential land use conflicts.*

Site-Specific Discussion:

HAZARDS:

Provide the following site-specific information for evaluation of the level of significance of potential impacts and incorporation of appropriate mitigation measures:

Mosquito Abatement District:

Proposed Method of Liquid Waste Disposal:

Proposed Method of Solid Manure Disposal:

IDENTIFIED POTENTIAL IMPACTS: (Refer to PEIR GPA 99-05 for complete discussion of impacts and mitigation measures.)

Impact #4.3.6-1: *Increase health hazard from fly and gnats..*

Site-Specific Discussion:

Impact #4.3.6-2: *Increase hazard from mosquitoes.*

Site-Specific Discussion:

MITIGATION MEASURES: (Check those Mitigation Measures that apply based on impacts identified.)

_____ **Mitigation Measure #4.3.6-1:** Implementation of management guidelines for sanitation, water management, solid manure management and wastewater management. Applies to Impact #4.3.6-1. These management guidelines include, but are not limited to, the following:

- Regular removal of accumulated manure from calf pens, loafing barns, and other areas.
- Regular cleanup of waste feeds and areas around feeders.
- Dead animals and afterbirths should be removed.
- Regularly remove weeds from around the milk barn, corrals, water troughs and fence lines.
- Damp or spilled feed should not be allowed to accumulate in or around mangers.
- Thorough cleanup of manure, rotting feeds and similar materials in the fall and early spring to minimize warm weather increases in fly populations.
- Design calf hutches to allow for proper drainage and clearing.
- Frequent bedding replacement to aid in the control of flies and fleas.
- Paved alleys and heavy traffic areas should be designed with sufficient slope for drainage and to facilitate manure collection.
- Land applied waste water should be distributed over a large enough area to minimize ponding.

- Excess manure should be stockpiled outside the corrals on hard-packed soil.
- Fresh manure should be mixed with old material to help the drying process.
- Milking barns and holding pens should be surfaced with concrete and provided with sufficient slope to facility washing and water runoff after every milking.
- Corrals and work alleys should be graded according to a master drainage plan to avoid ponding of rainwater.
- Corrals should have adequate elevation to allow manure scraping to continue without lowering the corral area below the grade of surrounding areas.
- Roof gutters can be used to divert rainwater from cattle traffic areas.
- Water troughs should be located in a convenient location for cattle access away from high traffic areas.
- Water troughs should be constructed to preclude interference with corral cleaning.
- Troughs should be surrounding by an eight-foot-wide, concrete, sloped apron.
- Floats (or other mechanisms for controlling the water level) should be maintained regularly to ensure proper function.
- Frequent raising and lowering of the waterline in ponds and lagoons.

_____ **Mitigation Measure #4.3.6-2:** Implementation of management guidelines for wastewater facilities and water use. Applies to Impact #4.3.6-2. These management guidelines include, but are not limited to, the following:

- Wastewater facilities shall be designed so that waste water flow channels the holding from self-cleaning milking parlors to ponds to minimize debris accumulation.
- Use of a solid separator (gravity or mechanical) to reduce floatage on the holding pond.
- The ponds/lagoons shall be designed with adequate surface width to allow wind action and to prevent floatage and mat formation.
- Banks of the ponds/lagoons shall be sloped to minimize breeding sites for mosquitoes.
- Removal of plant materials from pond/lagoon banks.
- Access roads shall be provided around ponds/lagoons for maintenance and vector control.
- No fencing should be permitted between the ponds/lagoons and access roads.
- All access roads, pond/lagoon walls, floors and surfaces shall be kept weed free.
- During land application of manure waters, pond/lagoon contents should be agitated to mix solids thereby minimizing mat formations during irrigation.
- Wastewater used for irrigation should not be allowed to stagnate for more than four days.

Mitigation Measure #4.3.6-3: Dairy and other animal confinement facilities which are not located within the service boundary of a mosquito abatement district shall comply with the following requirements for construction and management of wastewater facilities: Applies to Impact #4.3.6-2

- The owner/operator shall be responsible for mosquito/vector control. If acceptable arrangements can be made, the owner/operator may contract with a nearby mosquito abatement district to satisfy this requirement.

- The owner shall be responsible for keeping vegetative growth from all areas of the wastewater and solids separation ponds. This includes access lanes, interior pond embankments and any weed growth that might become established on pond surfaces.

- Dairy wastewater discharge for irrigation purposes shall be managed so that it does not stand for more than dour days. Discharges which do stand for more than four days could cause severe mosquito emergence.

- Floatage of any solid substance that could provide harborage for immature mosquito stages should be kept out of all wastewater holding ponds. Mechanical agitators may be very helpful in this regard.

- No drainage lines shall by-pass the separator ponds except those which provide for normal corral run-off. All such drain inlets must be sufficiently grated to prevent solids accumulation in the holding ponds.

- If new dairy wastewater holding and solids separator ponds are proposed, the following requirements shall also apply:

  A. All ponds shall be surrounding by lanes at least twenty feet in width and shall be kept clear for access.

  B. If fencing around the ponds is proposed, it shall be placed on the outside of the 2-foot lanes and gates provided for each access.

  C. Two or more solids separator ponds are required. These ponds shall not be more than 60 feet wide.

  D. Wastewater holding ponds shall not exceed 100 feet in width.

  E. New wastewater lagoons shall be plumbed so that wastewater going into it can be diverted back to the solids separation pits in the event of a mechanical breakdown in the mechanical separator or in the event of a power outage.

CULTURAL RESOURCES:

Provide the following site-specific information for evaluation of the level of significance of potential impacts and incorporation of appropriate mitigation measures:

Proximity to any known Historical Resource(s):

Proximity to any known Archaeological Resource(s):

Proximity to Unique Architectural Feature(s):

Previous Archaeological Surveys:

IDENTIFIED POTENTIAL IMPACTS: (Refer to PEIR GPA 99-05 for complete discussion of impacts and mitigation measures.)

Impact #4.3.7-1: *Disturbance or destruction of unidentified historical or archaeological resources.*

Site-Specific Discussion:

MITIGATION MEASURES: (Check those Mitigation Measures that apply based on impacts identified.)

_____ **Mitigation Measure #4.3.7-1:** In the event that grading, excavation, or construction associated dairies or other animal confinement facilities reveals the presence of cultural resources, the RMA shall be notified and work shall cease immediately until a qualified archaeologist can be consulted to evaluate the remains and implement appropriate mitigative treatment in accordance with Section 15064.5 of the State CEQA Guidelines.

APPENDIX R

Determining Animal Units Per Crop Acre*

(Explains how the animal density parameters set forth under Policy #2 of the "Dairy/Animal Confinement Facility Policies" were determined.)

Different classes of livestock produce nitrogen in manure at different amounts or rates, the classes of livestock used are milk cow, dry cow and heifer. Table values for nitrogen excretion is often expressed on a 1000 lb AU basis (a,d). Today's average milk cow in the southern San Joaquin Valley is better represented at a weight of 1400 lbs (b,c). With today's modern rations, higher producing cows, and intensive management systems, average nitrogen produced is estimated at 0.80 lbs/day; 0.45 lbs/day; and 0.225 lbs/day for milking cows; dry cows; and replacement heifers; respectively (b,c).

Volatilization of ammonia from manure represents a 50% loss from the point of excretion to the ground (d,e,f). Management systems result in different levels of nitrogen volatilization loss. The two standard management systems in the Southern San Joaquin Valley are Open Corral and Freestall, which have nitrogen retention coefficients of 60% and 80%, respectively (d,f).

Nitrogen losses in recycling ponds is dependent on storage duration and management with a range of losses reported from 30% to 80% (e,f). Nitrogen loss has been determined to be 30%; 40%; and 50% for storage durations of < 30 days; > 30 days < 60 days; >60 days; respectively. Recycled N removal by crops has been determined to be 250 lbs N per acre for a single crop rotation to 350 lbs N for a double crop rotation (g).

Summary Animal Units Per Crop Acre

Animal Housing Type	Cropping Program	Solids Disposal Method/Location	Maximum A.U.s per crop acre		
			50%[m]	60%[n]	70%[p]
Open corral (all)	Double	100% off site	9.71	8.13	6.71
	Single	100% off site	6.94	5.78	4.98
	Double	100% on site	5.85	4.85	4.17
	Single	100% on site	4.17	3.47	2.98
Free stall milk cows)	Double	100 % off site	7.81	6.54	5.59
Dry cows and heifers)	Single	100% off site	5.59	4.65	4.00
open corral)	Double	100% on site	5.85	4.85	4.17
	Single	100% on site	4.17	3.47	2.98

[m] Affluent in lagoon 60 days or more
[n] Affluent in lagoon 30 to 60 days
[p] Affluent in lagoon 30 days or less

Example Open Corral

1	2	3[bc]	4[de]	5[df]	6	7	8	9	10	11
Milk cows	600	x .8	x .50	x .60	x 365	= 52560				
Dry cows	102	x .45	x .50	x .60	x 365	= 5026				
Heifers	582	x .225	x .50	x .60	x 365	=14339				
						———	d,e,f			
						71925	x .70			= 50348
						71925	x	.60		= 43155
						71925	x		.50	= 35963

	50348/350[g]	= 149 acres	6.71 AU/ac
Double crop	43155/350	= 123 acres	8.13 AU/ac
Solids off site	35963/350	= 103 acres	9.71 AU/ac
	50348/250[g]	= 201 acres	4.98 AU/ac
Single Crop	43155/250	= 173 acres	5.78 AU/ac
Solids off site	35963/250	= 144 acres	6.94 AU/ac
Double crop	83913/350[g]	= 240 acres	4.17 AU/ac
Solids on site	71925/350	= 206 acres	4.85 AU/ac
	59938/350	= 171 acres	5.85 AU/ac
Single crop	83913/250[g]	= 336 acres	2.98 AU/ac
Solids on site	71925/250	= 288 acres	3.47 AU/ac
	59938/250	= 240 acres	4.17 AU/ac

Example Freestall

Milk cows free stall - dry cows & heifers open corral

1	2	3	4	5	6	7	8	9	10	11
Milk cows	600	x .80	x .50	x .80 [df]	x 365	= 70080				
Dry cows and heifers						= 19365				
						———	def			
						89445 x	.70			=62612
						89445 x		.60		=53667
						89445 x			.50	=44723

Double crop Solids off site	62612/350[g] 53667/350 44723/350	=179 acres =153 acres =128 acres	5.59 AU/ac 6.54 AU/ac 7.81 AU/ac
Single crop Solids off site	62612/250[g] 53667/250 44723/250	=250 acres =215 acres =179 acres	4.00 AU/ac 4.65 AU/ac 5.59 AU/ac
Double crop Solids on site	83913/350[g] 71925/350 59938/350	=240 acres =206 acres =171 acres	4.17 AU/ac 4.85 AU/ac 5.85 AU/ac
Single crop Solids on site	83913/250[g] 71925/250 59938/250	=336 acres =288 acres =240 acres	2.98 AU/ac 3.47 AU/ac 4.17 AU/ac

Column 1	Classification
Column 2	No. of head
Column 3	Lbs. N secreted per head per day
Column 4	% volatization in corral/feed area
Column 5	% of excretion recovered in lagoon
Column 6	days per year
Column 7	Lbs. N into lagoon
Column 8	% N left after denitrification in lagoon up to 30 days
Column 9	% N left after 30 to 60 days in lagoon
Column 10	% N left after 60 or more days in lagoon
Column 11	Lbs. N from the lagoon annually

References

a. American Society of Agricultural Engineers (ASAE). 1992. Standards, Engineering Practices and Data. 39th Edition.

b. Estimated Intake and Excretion of Dairy Cows in California. 1993. D. Bath, University of California Cooperative Extension. Unpublished data.

c. Recycling Manure Nutrients to Avoid Environmental Pollution. Chapter 65. 1992. Large Dairy Herd Management. H.H. Van Horn, C.J. Wilcox. American Dairy Society Association, Champaign, IL.

d. Animal Waste Utilization. In: Livestock Waste Facilities Handbook. 2nd ed. 1985. MWPS-18 p.102

e. Dairy Manure Can Be Used Safely. J. Meyer, R. Rauschkolb. E. Olson. Cal Agri. Nov. 1976

f. Nutrient Losses from Livestock Waste During Storage. D. Vanderholm. 1975. Managing Livestock Wastes. p. 282

g. California Fertilizer Association. 1995. Western Fertilizer Handbook, 8th ed. Interstate Publishers, Inc. Danville, IL.

*Document prepared by Tulare County Dairy Subcommittee: Jim Sullins and Tom Shultz, University of California Cooperative Extension; Bruce Jensen, Tulare County Planning Commission; Tony Souza and Ben Curti, Tulare County dairymen. April 28, 1998.

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Dairy Manure Salt Guidelines and References

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The figures and references are compiled to assist in preparing only guidelines on manure nutrient utilization. Site specific physio-chemical information of soil types and irrigation water, as well as crop production history and proposed cropping patterns, should be supplied to more accurately determine the animal unit capacity in a given dairy permit application. Regardless of which guidelines are used, the correct and accurate labeling of factors in the calculations are essential. The following information is offered to reduce misinterpretations.

ASAE Standards 1992. 39th Edition, American Society of Agricultural Engineers, St. Joseph, Missouri. D384.1

Daily elemental form of salts (atomic weight of mineral ÷ atomic weight of the compound containing the mineral i.e. potassium in potassium oxide), excluding nitrogenous fractions, equals .926 lbs./1000 lb. animal unit (AU). Nitrogenous fractions listed are 0.45 lb/1000 lb AU/day total Kjeldahl nitrogen (TKN) that includes 0.08 lb ammonia nitrogen. **(see note)**

Conversions: 0.926 x 1.4 (1400lb cow) = 1.296 lbs elemental salts (without nitrogen) and
0.45 x 1.4 = 0.63 lbs. N fraction for a 1,400 lb. dairy cow AU.

Meyer, J. et.al. 1973. Dairy Manure Utilization and Field Application Rates. UCCE Mimeo to California Regional Water Quality Board. also 1976. Dairy Manure Can Be Used Safely. Calif. Agri. 30:11:10. also 1990. Dairy Waste On Large Western Farms. Invited Paper. 85th Annual ADSA Proceedings. J. Dairy Sci. 73:1:123.

Average total potential salts/1400 lb.cow daily (excluding nitrate) for typical Chino, San Joaquin Valley and Northern California rations equaled 1.8 lbs. compound form salts and the elemental form salts (without N) equaled 1.296 lbs. Total N was listed at 0.79 lbs./1400 lb dairy cow. **(see note)**

Conversions: 1.296 ÷ 1.4 AU = 0.926 lbs. elemental form salts for 1,000 lb AU.
0.79 lbs. N/1400 lb AU ÷ 1.4 = 0.56 lb. N/1000 AU.

USDA-SCS. (now USDA-NRCS) 1992. Agricultural Waste Management Field Handbook. National Engineering Handbook. Chapter 4. Table 4-5.

Salts are given as 1.5 lbs./1,000 lb AU/day in "Fixed Solids"(600°C residue) and 0.45 lb. elemental N. Conversion factors for some individual compounds and their elements are listed in Table 4-2.

Conversions: 1.5 x 1.4 = 2.1 lb compound form salts/1,400 lb AU
0.45 x 1.4 = 0.63 lb N /1,400 lb AU

In Merced County the RWQCB uses the chemical element guidelines (ASAE)on a 1,000 lb AU basis. The RWQCB uses the mineral compound version (UCCE) on a 1,400 lb AU in Tulare and Kings Counties. The above conversions show they are essentially the same, when properly converted into an equivalent basis. However, misinterpretation can result if erroneously quoted or not correctly converted. The mineral compound, i.e. phosphate, oxide, etc., version appears more readily applicable to field situations.

RWQCB, Fresno office, guidelines for manure salts and N uptake by plants from double cropped land are 3,000 lbs. and 425 lbs. respectively/acre/year. The average used for single cropping is 2,000 lbs. compound form salts and 250 lbs. of N/acre/year. These figures are based on 1.8 lbs/1,400 AU/year of compound form salts. The figures are derived from UCCE references on salt loading data and N needs from The Western Fertilizer Handbook (1995 California Fertilizer Association. 8th Ed.).

Regardless if nutrient loading is based on ASAE and 1,000 lb AU or UCCE and 1,400 lb AU, the acres needed for recycling manure should be similar. Since N can volatilize and in large part salts do not, the first limiting factor will be salts. Subtracting volatilized N will allow two 1,400 lb AU more/acre than would salts at higher AU/crop acre densities. Higher yields and variable salt uptakes by selective plants may reduce the difference. This could be verified by appropriate tests.

Both the ASAE and NRCS publications state that whenever locally derived values for animal waste are available, this information should be given preference over the more general data in these publications. Also, including phosphorous in local manure salt guideline restrictions is questioned if adding inorganic fertilizer is needed to meet plant requirements. Proper sampling and replication of testing are needed for justification of any site specific variations. These procedures are outlined in UCCE Dairy Manure Management Series #3.

Note: The salt elements listed in the ASAE and UCCE publications include potassium, phosphorous, calcium, sulfur, chloride, sodium, zinc and other trace minerals. Trace minerals not included in these publications are cobalt and selenium. Daily dairy cattle requirements for these elements are listed in Nutrient Requirements Of Dairy Cattle 6th Revised Ed. 1988. National Research Council. National Academy Press, Washington, D.C.

APPENDIX S

United States Department of the Interior

FISH AND WILDLIFE SERVICE

April 19, 1996

IN REPLY REFER TO:

Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for the Listed Vernal Pool Branchiopods

The endangered Conservancy fairy shrimp (*Branchinecta conservatio*), longhorn fairy shrimp (*Branchinecta longiantenna*), vernal pool tadpole shrimp (*Lepidurus packardi*), and the threatened vernal pool fairy shrimp (*Branchinecta lynchi*) were listed on September 19, 1994, under the Endangered Species Act of 1973, as amended (Act) (59 Federal Register 48136). These species are endemic to vernal pools in the Central Valley, coast ranges, and a limited number of sites in the Transverse Range and Riverside County, California. The endangered Riverside fairy shrimp (*Streptocephalus woottoni*) was listed under the Act on August 3, 1993 (58 Federal Register 41391). This species inhabits Riverside, Orange and San Diego Counties, California, and northern Baja California, Mexico. These five species, hereafter referred to as vernal pool branchiopods, are fully protected under the Act. The San Diego fairy shrimp (*Branchinecta sandiegonensis*) is a proposed endangered species. Surveys for all these species should follow the methodologies described in these Interim Survey Guidelines (Guidelines). It is expected that the Guidelines will be revised in the future as additional information becomes available.

These Guidelines are issued as guidance to section 10(a)(1)(A) permittees. Because taking (killing, injuring, harming or harassing) endangered species is strictly prohibited under the Act, a section 10(a)(1)(A) recovery permit must be obtained prior to initiating any surveys or studies that might result in the take of endangered or threatened branchiopods. Failure to obtain this permit may result in violation(s) of section 9 of the Endangered Species Act. Additionally, violation(s) of a section 10(a)(1)(A) permit may result in its non-renewal, suspension or revocation.

For the purposes of these Guidelines, vernal pools and swales are defined as follows:

> Vernal pools and swales are ephemeral wetlands that form in areas of California with Mediterranean climates that have shallow depressions underlain by a substrate of hardpan, clay, or basalt near the surface that restricts the percolation of water. They may be characterized by a barrier to overland flow that causes water to collect and pond. Vernal pools/swales may occur singly, but more typically occur in vernal pool/swale complexes, due to the local hydrology, geology, and topography. Initially, the dry soil in vernal pools/swales becomes wet and starts to saturate during the fall and early winter rains. The second stage in a typical vernal pool cycle is characterized by peak rainfall and inundation of the vernal pools/swales. Vernal pools may remain

inundated until spring or early summer, sometimes filling and emptying numerous times during the wet season. The vernal pools gradually dry down during the spring, quite often forming the unique "bathtub ring" of flowers from endemic vernal pool plants blooming profusely at the pool margins. This drying down stage is typified by the production of seeds in the endemic plants and the dispersal of animals from the vernal pools. These pools eventually dry down totally, with the onset of drought conditions. During this final stage, early season and shallow-rooted plants turn brown, and the soil dries and may crack. With average rainfall patterns, vernal pools are typically characterized by a predominantly annual plant community dominated by wetland species.

Note: At this time, vernal pool-associated activities not directed toward the listed species, such as botanical surveys and wetland delineations, are not considered to require a permit. However, persons conducting such activities should minimize any potential impact on the vernal pool branchiopods or plants by reducing the amount of walking through vernal pools to the lowest extent practical. Persons conducting projects that require permits (e.g., branchiopod or amphibian surveys) should also minimize walking through the pools.

I. Survey Approval

Unless otherwise authorized by the U.S. Fish and Wildlife Service (Service) in writing, these Guidelines shall be utilized for all surveys conducted for the listed vernal pool branchiopods. Any deviations from the methods prescribed by these Guidelines must be approved by the Service before surveys are conducted. The permittee shall provide the appropriate Service Field Office (see XI, Service Contact section) with all of the following information in writing for each project site at least 10 working days prior to the anticipated start date of survey work:

a. The precise location of the project site clearly delineated on either an original or high quality copy of a U.S. Geological Survey topographic map (exact scale, 7.5 minute, 1"=2,000 ft.). The map should contain the project name, type of project by category [the categories are: development, mitigation banking, or other (specify)], the estimated area (acreage) of the project site and an estimated number or area (acreage) of pool/swales on the site, quad name, and county name;

b. Names of all vernal pool biologists and associated personnel with reference to their section 10(a)(1)(A) permit number; and

c. A written request to commence wet season or dry season sampling for each project to be surveyed for the listed vernal pool branchiopods.

II. Sampling Survey Completion

a. Once initiated, surveys conducted pursuant to these Guidelines may be suspended prior to completion if:

1. the presence of one or more of the five listed branchiopods on the subject site is determined through identification at any point within the wet season survey cycle; or

2. it is agreed that one or more of the listed vernal pool branchiopods are present on the subject site.

b. Permission to dry season survey for the listed vernal pool branchiopods requires the completion of both the full wet season survey and the dry season survey, including the complete analysis of all dry soil samples (see V).

c. A complete survey consists of sampling for either:

1. two full wet season surveys done within a 5-year period; or

2. two consecutive seasons of one full wet season survey and one dry season survey (or one dry season survey and one full wet season survey).

d. Each vernal pool/swale in a vernal pool/swale complex shall be surveyed as per these Guidelines. However, in the case of a large vernal pool/swale complex, the Service may authorize a representative portion or portions of the vernal pool/swale complex to be surveyed as per these Guidelines.

III. Notification of Presence

Should the permittee determine that any of the five listed vernal pool branchiopods are present at a site, the appropriate Service Field Office (see XI, Service Contact section) shall be notified within 10 working days by letter or telephone.

IV. Wet Season Surveys

Wet season survey sampling shall not be conducted at any project site unless the permittee receives prior permission from the Service (see I (c)).

a. Survey Initiation, Frequency, and Termination

1. Surveyors should visit sites after initial storm events to determine when

pools/swales have been inundated. A pool/swale is considered to be inundated when it holds greater than 3 cm of standing water 24 hours after a rain event.

2. Pools/swales shall be adequately sampled once every two weeks, beginning no later than two weeks after their initial inundation and continuing until they are no longer inundated, or until they have experienced 120 days of continuous inundation.

3. In cases where the pools/swales dry and then refill in the same wet season, sampling shall be reinitiated within eight days of refilling every time they meet the 3 cm of standing water criteria and shall continue until they have experienced 120 days of continuous inundation, or until they are no longer inundated.

4. If a vernal pool/swale has already experienced 120 days of continuous inundation, but then dries down and subsequently refills in the same wet season, surveys must be re-initiated in accordance with IV(a)(3) above, each time the vernal pool/swale refills and meets the 3 cm of standing water criteria.

5. Once initiated, surveys conducted pursuant to these Guidelines may be suspended prior to completion if the presence of one or more of the five listed branchiopods on the subject site is determined through identification at any point within the wet season survey cycle

b. Survey Sampling

At each wet season visit, representative portions of the pool/swale bottom, edges, and vertical water column shall be adequately sampled using a seine, dip net or aquarium net appropriate for the size of the pool or swale. Net mesh size shall not be larger than (1/8) inch. Seines shall be examined and emptied of material at least once every five linear meters.

c. Voucher Specimens

1. Voucher specimens shall be collected only once for each individual vernal pool/swale and shall be accessioned to either the California Academy of Sciences (CAS) or the Natural History Museum of Los Angeles County (LACM) (see VIII).

2. Voucher specimens of all listed vernal pool branchiopods captured shall be collected and all other specimens shall be returned in good condition to the vernal pool/swale where they were found as quickly as possible.

3. No more than 20 specimens of each species of listed vernal pool branchiopods from each pool/swale, or less than 10% of the subpopulation present in the pool/swale, whichever is the lesser amount, shall be retained and preserved as voucher specimens.

4. Only sexually mature, adult branchiopods shall be used for purposes of voucher specimens for species identification. The Service will not accept species identifications made using immature specimens.

5. The sample of 20 voucher specimens shall include no less than three specimens of either sex.

V. Dry Season Surveys

Dry season soil sampling shall not be conducted at any project site unless the permittee receives prior written permission from the Service (see I (c)).

a. Soil Collection

Soil shall be collected when it is dry to avoid damaging or destroying cysts which are more fragile when wet. A hand trowel or similar instrument shall be used to collect approximately one liter volume sample per pool/swale of the top 1-3 cm of pool sediment. Whenever possible, soil samples shall be collected in chunks. The trowel shall be used to pry up intact chunks of sediment, rather than loosening the soil by raking and shoveling which can damage cysts.

In southern California there are a number of federally listed plant species (*Orcuttia californica, Pogogyne abramsii,* and *Pogogyne nudiscula*) that often co-occur with the fairy shrimp. Removal of soil could damage populations of these plants by inadvertently removing seed. Dry sampling should be minimized or avoided within those vernal pools/swales that are known to, or may, contain these species. The permittee shall contact the Carlsbad Field Office (see XI, Service Contact section) regarding the distribution of these listed plants species prior to conducting dry sampling in Los Angeles, Orange, Riverside and other southern California counties.

b. Soil Sample Volume

Each soil sample from the 10 soil sample locations shall be labeled, stored, and analyzed individually.

1. A total of 10 soil samples of approximately 100 ml each shall be taken from each pool/swale, for a total soil sample volume of approximately one liter per pool/swale.

2 In the case of a very large playa, dry lake, or vernal pool, the Service may authorize the removal of more than one liter of soil.

3. If a pool has a diameter of less than three meters, the total soil sample taken shall not exceed ½ liter in volume per pool, and the 10 soil samples shall be approximately 50 ml each in volume.

c. Soil Sample Locations

A total of 10 soil samples shall be collected from the following locations within each pool/swale sampled:

1. Starting with one soil sample taken from the edge of the pool/swale, at least four soil samples shall be taken from equidistant points along the longest transect of the pool/swale.

2. Starting with one soil sample taken from the edge of the pool/swale, at least four soil samples shall be taken from equidistant points along the widest transect of the pool/swale.

3. If neither the longest or the widest transect encompasses the deepest part (or parts) of the pool/swale, then at least two soil samples shall be taken from the deepest part (or parts) of the pool/swale..

d. Soil Storage

1. The soil samples from each soil sample location shall be stored in separate bags, labeled with the specific location within the pool/swale from where each soil sample was taken. A sketch of the pool/swale showing the specific location of each soil sample shall be included in the 90-day report.

2. Soil samples containing any residual moisture initially shall be adequately ventilated and allowed to air dry thoroughly before storage of the sample. The bags containing the soil samples shall be kept out of direct sunlight in order to avoid excessively heating the sample.

3. All soil samples shall be retained and stored as directed in V(d)(1) and V(d)(2) above until the Service is able to provide direction in species-level identification of the cysts of all the aforementioned branchiopod species.

e. Soil Sieving

1. The soil samples shall not be ground, crushed, or otherwise manipulated in order to expedite the sieving process. A relatively short period of pre-soaking the soil sample may be helpful/necessary in order to facilitate the sieving process. Small aliquots (approximately 50 ml in volume) of soil shall be gently washed with water through a graded series of U.S. standard eight inch soil sieves ending in mesh sizes 300 micron (um), and 150 micron (um).

2. Sieves must be thoroughly rinsed and visually inspected for any cysts adhered to the sieves prior to the start of sieving. This process must be repeated for each individual soil sample location. Sieves shall also be rinsed and thoroughly inspected upon completion of sieving soil samples.

f. Soil Examination

1. Washed and sieved soil fractions from the 300 um and 150 um sieves shall be examined under a dissecting microscope for tadpole shrimp and fairy shrimp cysts. The process shall be repeated until all individual soil samples have been examined. All sieved material shall be processed and dried as quickly as possible, preferably within one hour from the initial wetting.

Note: Do not return soil to survey sampling site.

2. All fairy shrimp and tadpole shrimp cysts shall be removed from the soil, separated by cyst type into labeled vials, allowed to air-dry, and then stored dry.

g. Cyst Density

Cyst density information for each soil sample location shall be calculated by dividing the total number of cysts recovered by the total amount of soil from the individual aliquots from that soil sample location. Total cyst density information for each soil sample location shall be reported for each species in terms of: none; 1-25 cysts/100 ml soil; 26-50 cysts/100 ml soil; 51-100 cysts/100 ml soil; 101-199 cysts/100 ml soil; or more than 200 cysts/100 ml soil.

h. Cyst Identification

Each fairy shrimp and tadpole shrimp cyst type shall be identified to genus by a

qualified biologist. The Service may require an independent review by a crustacean biologist(s) of any vernal pool branchiopod or cyst identification.

There are two options when a branchiopod cyst identification is made to genus:

1. the survey, pursuant to these Guidelines, may be suspended if it is agreed one or more of the listed species are present on the project site; or

2. one subsequent complete wet season sampling survey shall be conducted to complete survey requirements.

VI. Cyst Voucher Specimens

A representative sample of each cyst type from each pool/swale shall be accessioned to either CAS or LACM (see VIII).

VII. 90-Day Reports

a. U.S. Fish & Wildlife Service

The permittee shall provide the appropriate Service Field Office (listed in the Service Contact section) with all of the following information in writing, using the appropriate Vernal Pool Data Sheet where applicable as the reporting form, no more than 90 calendar days after completing the last field visit of the season at each project site:

1. The location of the project site clearly delineated on an original or high quality copy of a U.S. Geological Survey topographic map (exact scale, 7.5 minute, 1"=2,000 ft.). The location of the listed vernal pool branchiopods is to be included on the 7.5 minute maps in as precise a manner as possible (e.g., lat/long or location within a section).

2. Five color photographic 35mm slides and/or 3" x 5" photographs of each project site taken during sampling in the wet season; this is to include two slides and/or photographs taken from standing position that portray the general landscape of the site [i.e., two photos from an opposing axis of the site (e.g., north and south compass headings)]; and three slides and/or photographs of representative vernal pools, swales, and other areas within the site sampled for the five listed vernal pool branchiopod species. The following information shall be legibly written on each slide/photograph with permanent ink: precise location of the project site, direction from which photograph was taken, date of photograph, initials of photographer, and initials of the scientific names of any of the five listed vernal

pool branchiopod species that were found at the depicted site.
Note: Slides and/or photographs only need to be submitted once per project site.

3. The estimated number of individuals of any of the listed vernal pool branchiopods observed in each pool/swale shall be reported in terms of an order of magnitude (e.g., 10's, 100's, 1000's).
(Refer to the Vernal Pool Data Sheet)

4. The number of individuals of any of the listed vernal pool branchiopods or cysts preserved from each pool/swale and the name of the institution in which they are accessioned.
(Refer to the Vernal Pool Data Sheet)

5. A qualitative description of the vernal pool/swale community. A general list of amphibian species and non-listed vernal pool crustacean species (by common and/or scientific name) encountered at the project site is desirable. For purposes of this permit a full survey for these species is not required. However, if more detailed information is collected, it shall be included in the Vernal Pool Data Sheet.
(Refer to the Vernal Pool Data Sheet)

6. Data collected during each field visit, including: date, air temperature, water temperature, weather conditions (e.g., sunny, overcast), maximum depth of each pool/swale, and size (area in square meters) of each pool/swale.
(Refer to the Vernal Pool Data Sheet).

7. (Optional) water chemistry data collected during each field visit, including: alkalinity (total: ppm or mg/l), conductivity (uMHO), dissolved oxygen (ppm or mg/l), dissolved NH_4 (ppm or mg/l), pH, salinity (ppt), total dissolved solids (TDS, ppm), and turbidity.
(Refer to the Vernal Pool Data Sheet)

b. California Department of Fish & Game

1. Permittees should consult with the California Department of Fish and Game (916/653-4875) to determine their responsibilities under the California Endangered Species Act and the California Fish and Game Code.

2. The permittee shall supply the California Department of Fish and Game (Natural

Diversity Data Base, Staff Zoologist, California Department of Fish and Game, 1416 9th Street, Sacramento, California 95814; telephone 916/322-2494) with completed California Native Species Field Survey Forms, no more than 90 calendar days after completing the last field visit of the season at each project site.

VIII. Accessioning Voucher Specimens

a. All vernal pool branchiopod voucher specimens (including individuals collected and cysts) shall be accessioned into either the California Academy of Sciences (CAS) or the Natural History Museum of Los Angeles County (LACM). All specimens shall be preserved according to the accession standards of the repository which will accession and maintain the specimens. The October 1995 CAS and September 1995 LACM standards are attached to these Interim Survey Guidelines.

b. All vernal pool branchiopod voucher specimens (including individuals collected and cysts), along with a copy of the Vernal Pool Data Sheet containing all of the items listed in VII (a), shall be permanently deposited in the CAS or LACM within 90 calendar days of the completion of the field survey and the Service shall be supplied with the CAS or LACM catalog numbers given to the specimens.

c. The permittee shall supply the CAS or LACM with a photocopy of their section 10(a)(1)(A) permit to validate that the specimens supplied to them were taken pursuant to a permit. The Service will likely consider refusal by the CAS or LACM to accession any listed branchiopod specimens to be a violation by the permittee of their section 10(a)(1)(A) permit (e.g., if due to improper preservation/storage).

California Academy of Sciences (CAS)
Department of Invertebrate Zoology and Geology, Golden Gate Park,
San Francisco, California 94118; telephone (415) 750-7082

Natural History Museum of Los Angeles County (LACM)
Crustacea Section, Invertebrate Zoology, 900 Exposition Boulevard,
Los Angeles, California 90007; telephone (213) 744-3450

IX. Additional information, limitations, and caveats with respect to these Guidelines are as follows:

a. From time to time, specific circumstances may justify or necessitate revision of these Guidelines, on a case-by-case basis. At the discretion of the Service, such a variance may be allowable under these Guidelines if:

1. the permittee explains to the Service in writing why the variance to the Guidelines is needed and justified; and

2. the Service concurs, in writing, with the variance requested by the permittee.

b. The Service reserves the right to reject vernal pool branchiopod surveys conducted under these protocols as inadequate if:

1. survey methods used are inconsistent with these Guidelines, unless prior written permission (see I, Survey Approval) has been obtained; or

2. other information indicates that the survey is inadequate as determined by the Service.

X. Permit Infractions

The Service may consider any of these actions to be a violation by the permittee of their section 10(a)(1)(A) permit:

a. falsification of any reporting or information;

b. failure to follow the stated Guidelines sampling methodologies;

c. failure to obtain prior permission to commence wet season surveys or failure to obtain written permission to commence dry season surveys (see section I (c));

d. failure to notify the Service within 10 days of a determination of presence of one or more of the listed vernal pool branchiopods on a survey site;

e. failure to accession voucher specimens or improperly accessioned voucher specimens;

f. failure to file completed 90-day reports with the Service within 90 calendar days after completing the last field visit of the season at each project site; or

g. failure to file completed Natural Diversity Data Base forms with the California Department of Fish and Game within 90 calendar days after completing the last field visit of the season at each project site.

Violation(s) of a section 10(a)(1)(A) permit may result in its non-renewal, suspension or revocation.

XI. Service Contact

For the Central Valley hydrographic basin and the coast ranges north of the Santa Cruz County line, the Sacramento Field Office (2800 Cottage Way Room E-1803, Sacramento, California 95825; telephone 916/979-2728) should be contacted regarding vernal pool branchiopod issues.

For areas from Santa Cruz County south to Ventura County, contact the Ventura Field Office (2493 Portola Road - Suite B, Ventura, California 93003; telephone 805/644-1766).

For areas from Los Angeles County south to the U.S.- Mexico border, contact the Carlsbad Field Office (2730 Loker Avenue West, Carlsbad, California 92008; telephone 619/431-9440).

U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: ____ no ____ yes

Required color slides and/or photographs for the project site are included: ____ no ____ yes

Date: ____/____/____ Time: _____ County: _____ Quad: _____

Collector(s): _____ Permit #: _____

Site/Project Name: _____ Pool #: _____

Township: _____ Range: _____ Section: _____ _____lat._____long.

Temperature: Water: _____ °C Air: _____ °C

Pool Depth:
at time of sampling: _____cm
estimated maximum: _____cm

Surface Area:
at time of sampling: _____m x _____m
estimated maximum: _____m x _____m

Habitat Condition: (circle where appropriate)

- undisturbed disturbed: tire tracks garbage discing/plowing
- ungrazed grazed: cattle horses sheep other_____
  light moderate heavy
- land use of habitat:

(Optional) Water Chemistry Data

Alkalinity (total):_____ppm or mg/l Conductivity:_____uMHO

Dissolved NH_4:_____ppt or ppm Dissolved Oxygen:_____ppm or mg/l

pH:_____ Turbidity: (secchi disc depth)_____cm or: clear to bottom _____

Salinity :_____ppt or ppm Total Dissolved Solids (TDS):_____ppm

Notes:

U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Wet Season Survey

Note: Please fill out the required information completely for each site visit.

Species Observed: state none or estimate # of individuals present in terms of an order of magnitude (e.g., 10's, 100's, 1000's)

Anostracans:
(note reproductive status)

Notostracans:
(note reproductive status)

(Optional) Species Observations:

			Insects: (adult or larvae)		
Cladocerans:	yes	no	Anisoptera:	yes	no
Conchostracans:	yes	no	Zygoptera:	yes	no
Copepods:	yes	no	Hydrophilidae:	yes	no
Ostracods	yes	no	Dytiscidae:	yes	no
Fish	yes	no	Corixidae:	yes	no
Frogs	yes	no	Notonectidae:	yes	no
Salamanders	yes	no	Belostomatidae:	yes	no
Waterfowl	yes	no			
Other (specify) _____			Other (specify) _____		

Voucher Specimens

Specimens shall be preserved according to the standards of the institution in which they will be accessioned.

Species	# Individuals	Accession/Catalog #	Pool #

U.S. Fish and Wildlife Service Vernal Pool Data Sheet
Dry Season Survey

Note: Please fill out the required information completely for each site visit.

This form is being submitted to serve as part of the 90-day report: _____ no _____ yes

Required color slides and/or photographs for the project site are included: _____ no _____ yes

Date: ___/___/___ Time: _____ County: _____ Quad: _____

Collector(s): _____ Permit #: _____

Site/Project Name: _____ Pool #: _____

Township: _____ Range: _____ Section: _____ _____lat. _____ long.

Habitat Condition: (circle where appropriate)

- undisturbed disturbed: tire tracks garbage discing/plowing

- ungrazed grazed: cattle horses sheep other_____
  light moderate heavy

- land use of habitat:

Pool Bottom Surface: (circle where appropriate)
hardpan claypan cobbly/rocky lava flow other_____

Pool Depth: _____cm (estimated maximum) Surface Area: _____m^2 (estimated maximum)

Sketch of pool and transects showing:
- scale
- indication of North
- sampling locations

U.S Fish and Wildlife Service Vernal Pool Data Sheet
Dry Season Survey
Soil Analysis

Note: Please fill out the required information completely for each site visit.

Sample ID	Sample Volume(ml)	Genus (/species)	# Cysts (or None)	Cyst Density (#/100ml)

Voucher Specimens

Cysts shall be stored dry and shall be preserved according to the standards of the institution in which they will be accessioned.

Genus (/species)	# Cysts	Catalog/Accession #	Pool #

Collection, Preservation, Handling, and Accessioning Information for Small Crustaceans

Crustacea Section, Invertebrate Zoology
The Natural History Museum of Los Angeles County
900 Exposition Boulevard
Los Angeles, California 90007

Collection Data

To the extent possible, the following data should be included. The Museum reserves the right to refuse acceptance of any specimens without a minimum of usable, legible collection data. Archival quality materials (including glass vials, permanent ink or pencil and permanent label paper, and glass outer jars with screw-top polypropylene lids) should always be used (see below). All collections should include the following information:

Taxon name: (Lowest available or known, down to species where possible)
Date: (day, month, year)
Time of Day: (if known)
Detailed Location:
Latitude and Longitude:
Specific habitat information:
Name of collector:
Collecting method(s) / device(s):
Preservative used:
Notes: (to include any observations on behavior, co-occuring species, etc.)

Preservation

Ideally, even small crustaceans should be initially fixed in 5 to 10% formalin (37% formaledhyde in solution, as commercially purchased, mixed with 90-95% water). As an alternative, 100% ethyl alcohol, although not a fixative and so not as good for long term tissue preservation, can sometimes be used (not recommended for animals longer than 20 mm total length). With either method, specimens should be transferred to 70% ethyl alcohol (ethanol) after a minimum of 8 hours of fixation. The 70% ethanol to tissue ratio should be approximately 3 to 1 for long term storage.

Storage

Archival quality materials (including glass vials, permanent ink or pencil and permanent label paper, and glass outer jars with screw-top polypropylene lids) should always be used. Specimens should be placed in small glass vials completely filled with 70% ethanol and plugged with cotton (not foam). Vials are then inverted and stored in a slightly larger outer storage jar of glass or plastic, also filled with 70% ethanol and fitted with a polypropylene-closure lid. Labels are ideally situated in the outer jar containing the vial rather than in the shell vial, never on the outside of the jar or affixed to the lid.

Shipping

Specimens should be shipped in plastic, leak-proof bottles, jars, or vials, and must be adequately cushioned by bubble-wrap, plastic peanuts, etc. to ensure their safe arrival. It is preferred that specimens that are designated types or vouchers be sent by registered or certified mail, although this is at the discretion of the sender. Use the complete address given at the top of this document.

Cost of Specimen Accessioning

Because of the rising costs of accessioning and maintaining valuable collections, the Natural History Museum reserves the right to charge on a per-sample basis for accessioning collections. This fee varies with the size of the collection, duration of the project, and availability of Museum staff at the time of deposition. The fee may be waived at the discretion of the Curator or Collections Manager of Crustacea and may fluctuate depending upon our evaluation of lots received.

Accessioning Information

The Natural History Museum of Los Angeles County will accept for permanent care and curation selected collections of Crustacea, including those from vernal pools and other ephemeral freshwater habitats and representatives of threatened or endangered taxa. The Museum is willing to act as the repository for collections acquired during USFWS or other surveys.

To be accepted for accessioning, the collections must be in reasonably good shape, meaning that the animals themselves must not be overly deteriorated and that all previously stated collecting, preserving, and labeling protocols have been followed. Furthermore, all collections must be accompanied by a detailed list of the specimens being sent.

The Museum reserves the right to charge an accessioning fee to cover the costs of accessioning any and all deposited specimens. This fee may be waived at the discretion of the curator in charge of the Museum Section that will be overseeing the accessioning and curation of the collection.

The Museum reserves the right to decide whether an incoming collection should be stored topically vs. separated and stored according to taxonomic divisions (i.e. storing all members of one family together rather than keeping all collections from one site together).

The Museum further reserves the right to decide which specimens will be kept and maitained for long term storage and which may be passed on to other institutions in exchange or as long term loans for research purposes.

For further information contact:

Dr. Gary Pettit, Collections Manager, Crustacea 213-744-3450 fax 746-2999
Dr. Joel W. Martin, Curator of Crustacea 213-744-3440 fax as above
(Or write to the address given above)

This document current as of: 25 September 1995

California Academy of Sciences
Department of Invertebrate Zoology and Geology
Golden Gate Park
San Francisco, CA 94118

October 1995

Protocols and standards for preservation and archival of vernal pool crustaceans.

Specimens of vernal pool crustaceans listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and collected during surveys permitted by the USFWS may be deposited as voucher specimens at the California Academy of Sciences, Department of Invertebrate Zoology and Geology (CASIZG). However, only those specimens which have been properly fixed, preserved and documented will be accepted for archival. The vendors listed below can supply the necessary materials for specimen storage, however these vendors are not specifically required and materials from other sources will be acceptable provided they meet the standard requirements of CASIZG. Any questions regarding these standards and protocols may be directed to Dr. Robert Van Syoc, Senior Collection Manager of invertebrates at CASIZG (415-750-7082). Visits to the collection to deposit potential voucher specimens must be at least 7 days in advance. Specimens may be shipped to CASIZG, but shipments with damaged specimens or broken containers will not be accepted. Each shipment must be accompanied by a packing list of specimens sent. CASIZG catalog numbers will be assigned by CAS staff and notification sent to you by U. S. mail. This will be done in an expeditious manner, but staffing limitations may cause delays. Therefore, allow several days for notification of CASIZG catalog numbers.

Materials required:

- 100% or 95% non-denatured ethanol
- 75% non-denatured ethanol (diluted from 100% or 95% with de-ionized or distilled water)
- 2 dram, 4 dram, 6 dram glass shell vials
- Clean cotton
- 8 oz. tall flint glass bottles, 48 mm aperture (inside diameter) or 32 oz. glass bottles, 74 mm aperture (inside diameter)
- White polypropylene screw-top closures with solid (no holes) smooth surface, 58 mm diameter (8 oz. bottles) or 85 mm diameter (32 oz. bottles), with foam or plastic liners
- Nalgene polypaper
- Dot-matrix printer and alcohol-proof ink ribbons, or technical pen with alcohol-proof ink, or #2 pencil

Standards and Protocols:

- Vernal pool crustaceans must be fixed in 100-95% non-denatured ethanol and preserved for archival in 75% non-denatured ethanol. Enough 100-95% ethanol should be used in the initial fixation to insure proper fixing of tissues. A ratio of at

least 10 parts 100-95% ethanol to 1 part tissue is required for initial fixation. A ratio of at least 3 parts 75% ethanol to 1 part tissue is required for preservation.

- All specimens must be sorted by collecting event (each locality/date/time of collection). They must be identified to species level, each species from each collecting event placed into a vial or vials in it's own 8 or 32 oz. bottle (use the smaller size if possible).

- Specimens are placed into 2 dram, 4 dram, or 6 dram glass shell vials filled with 75% ethanol. The vial or vials are plugged with clean cotton in such a manner that no air bubbles are trapped inside and placed inverted into an 8 or 32 oz. glass bottle filled with 75% ethanol (Fig. 1). If open vials with specimens are inserted upright into the larger container, then plugged with cotton, air bubbles will not be trapped in the vial. The vial may then be removed and placed back into the bottle with cotton plug down for archival. It is important to remember that the specimens should not be jammed into the vials. The purpose of placing specimens into vials is to protect them from potential damage which could be caused by contact with labels placed into the jar or during removal from the 8 or 32 oz. container. However, putting too many specimens into a vial or putting specimens into a vial which is too small will damage them. The required ratio of preservative to tissue inside the vial is at least 3 parts 75% ethanol to 1 part tissue. This may require splitting a species sample from a single collecting event into two or more vials within a bottle or even into two bottles.

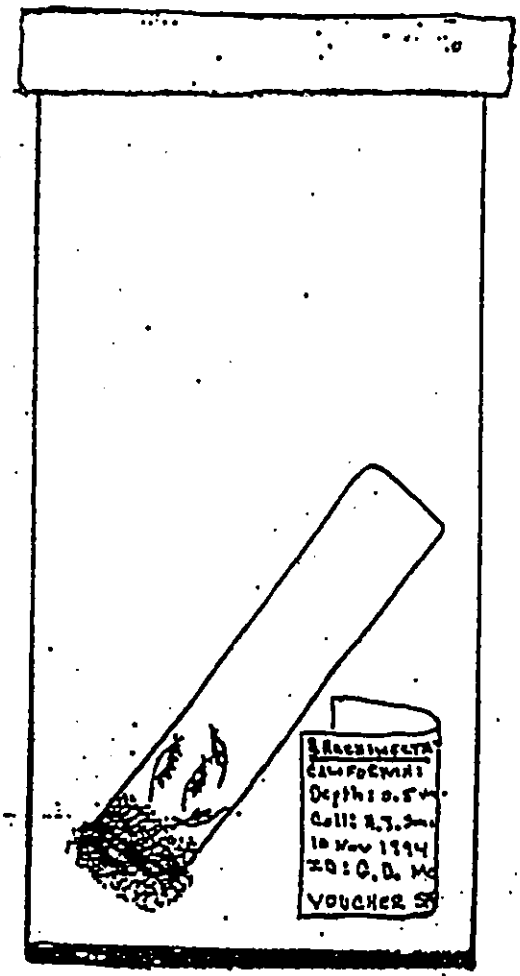
- The 8 or 32 oz. glass bottle is capped with the foam or plastic lined, screw-top polypropylene closure.

- Each 8 or 32 oz. bottle must contain a label with collecting event data on Nalgene polypaper in alcohol-proof ink or #2 pencil. Labels must be placed into the specimen bottle which contains the specimen vial(s), not directly inside the vials and not attached to the outside of the bottle. The data may be printed using a dot-matrix printer with alcohol-proof ink ribbon. Alternatively, it may be hand printed with technical pen using alcohol-proof ink or a #2 pencil. Laser printed or photocopied labels are not acceptable. All labels must be easily readable by CAS staff. If labels are not legible, specimens will not be accepted or cataloged into the CAS collection. Labels should be no larger than 3 x 5 inches and no smaller than 2 x 3 inches.

Data required for specimen labels:

- Species name
- County, city/town, and other clearly worded description of collection locality so as to enable another scientist to find the collection locality
- Latitude and longitude
- Environmental data regarding habitat (temperature, turbidity, depth and size of pool)
- Full names of collector(s) and identifier
- Dates of collection and identification, dates should clearly indicate day, month and year (e.g. 10 Jan 1995)
- The phrase "Voucher specimen: Vernal Pool Crustacean Survey"

Fig. 1: 8 oz. bottle containing inverted glass vial plugged with cotton. Note label inside jar, but not inside vial.



List of potential (not specifically required) vendors of some required materials.

Glass vials: S-930	Acme Vial and Glass 1601 Commerce Way Paso Robles, CA 93446 (805) 239-2666
Glass bottles: and polypropylene lids	California Glass 155 98th Ave. Oakland, CA 94603 (510) 635-7700
Polypropylene lids:	Berlin Packaging 7900 Edgewater Dr. Oakland, CA 94621 (510) 562-7201
Cotton: non-sterile	California Medical Supplies 3315 Broadway Oakland, CA (510) 885-5105
Nalgene Polypaper:	VWR Scientific (415) 468-7150 (800) 932-5000
Alcohol-proof ("non-bleeding"). printer ribbons:	Automated Office Products Inc. 9700-A Martin Luther King Jr. Hwy. Lanham, MD 20708
Non-denatured ethanol 190 or 200 proof (95% or 100%)	Gold Shield Chemical 3111 Depot Rd. Hayward, CA 94545 510-782-2040

Materials may be obtained from other sources, but should conform to the specific standards listed above. CASIZG will not act as a supplier of materials.

The California Natural Diversity Data Base
Commonly Asked Questions

What is the Natural Diversity Data Base (NDDB)?

The NDDB is a program within the Department of Fish and Game's Natural Heritage Division. The NDDB's mission is to track the location and condition of California's many species of rare and sensitive plants, animals, and natural communities (e.g., marshes, riparian systems, desert scrub, etc.). These species and natural communities are collectively referred to as inventory elements. The NDDB includes site records for all federally and state listed plants and animals, and all species that are candidates for listing. Also included are those species that are considered "sensitive" by government agencies and the conservation community. This is a computerized inventory and information is available for a fee in hardcopy and digital forms. As of November 1992, the NDDB contained about 20,450 locational records for 1,164 inventory elements.

How is NDDB information set up or organized?

NDDB data are organized geographically and taxonomically. Information can be retrieved by United States Geological Survey (USGS) map sheet (e.g., typically 1:24,000, 1:62,500, 1:100,000, or 1:250,000 scale), or by taxa. Most NDDB clients request information for USGS 7.5 minute quads. The approximately 49 square miles covered by a single USGS 7.5 minute quad is the smallest area for which we will perform a data retrieval. Due to the nature of our inventory, it is important that our clients consider inventory element locations on and near their project site or area of interest.

What types of information can I obtain?

Information from the NDDB is usually made available in three formats:

TEXT - Reports can be generated by 7.5' quad, 1:100,000 scale map, by county, or custom area. If the number of records for the region of interest exceed 200 (a report of about 25 pages in length), we prefer to use a digital format rather than relying on hardcopy reports. Reports vary in cost with the number of records involved. Our per record rates for our government/conservation clients is $4.00/record and $8.00/record for our commercial clients. Our experience has been that reports related to 7.5' quads usually vary between $140 and $270 each for our commercial clients.

OVERLAY - We have the ability to produce computer generated overlays for any scale base map you might have. These overlays have only the map features representing our inventory elements and a map sheet boarder for registration to your base map. Most of our clients request overlays for USGS 7.5' and 1:100,000 scale maps. Overlays cost $30.00 each.

RAREFIND - We can also make our data available via a microcomputer database application called *RAREFIND*. You can obtain our entire state wide data set or request that we customize the data set to a single county or a set of counties. *RAREFIND* is available by yearly subscription. The entire state cost is $1,250 government rate, or $2,500 commercial rate. You can call us for county pricing. A subscription includes an initial set of data with the *RAREFIND* application followed by an updated data set 6 months later. *RAREFIND* subscribers are also afforded a special rate of $20 per overlay. Costs for customized data sets will vary with the number of data base records involved. *RAREFIND* is a compiled, stand alone application that requires an IBM compatible microcomputer with adequate hard disk space (e.g., 5 to 23 MB) to run. No additional software is required.

How do I order information from the NDDB?

It is easy to request information from the NDDB. Call one of our Information Services staff at (916) 324-3812 to place your order by phone. It is most helpful to have the name or names of the 7.5' maps you want information for at hand when you call. We will tell you how many records we have in the NDDB for your area of interest and give you a cost estimate before we proceed with your request.

To what extent can information be customized to my needs?

For special requests, with adequate notification, our geographic information system allows us to customize our information products to your specific needs. For projects that affect large areas, you can send us a map showing your project boundaries. We can then enter this boundary into our system and use it to accurately determine what data we might have for your project area.

How long does it take to get information from the NDDB?

The usual turn around time for data requests is one to two weeks. We ask you to remember that this is a computerized system and it does go down from time to time. Such unforeseen, but not unexpected, events can interfere with our normal response time.

How do I pay?

You are invoiced directly from our accounting department after the products have been sent to you. You do not need to pay up front; however, delinquent accounts will be denied additional services until the balance has been paid.

NOTE: There is a 50% cancellation charge if you cancel your order after we have already processed your request and generated our products. There is a no return policy on products already delivered.

Why is there a charge for this information?

Our enabling legislation requires that we "insure cost-sharing by all who use the" NDDB, "and develop a fee structure to recover actual costs for use of the" NDDB. The Department of Finance has determined that this will include not only direct costs for generating and distributing our data, but will also include some program overhead. We recover about $225,000 per year in fees, which amount to about 25% of our program costs.

California Native Species Field Survey Form

Mail to:
Natural Diversity Data Base
California Department of Fish and Game
1416 Ninth Street, 12th Floor
Sacramento, California 95814

For office use only

Source Code _____ Quad Code _____

Elm Code _____ Occ # _____

Copy to _____ Map Index # _____

Date of field work ____ - ____ - ____
mo day year

Scientific Name:

Common Name:

Species Found? ☐ yes ☐ no _____ *If not, why?*

Total # Individuals _____ Subsequent visit? ☐ yes ☐ no

Is this an existing NDDB occurrence? _____ ☐ no ☐ unk.
Yes, Occ. #

Collection? If yes: _____ _____
number Museum/Herbarium

Reporter: _____

Address: _____

_____

Phone: ( ) _____

Plant Information

Phenology: _____ _____ _____
% vegetative % flowering % fruiting

Animal Information

Age Structure: _____ _____ _____
adults # juveniles # unknown

☐ nesting ☐ breeding ☐ foraging ☐ wintering ☐ roosting ☐ burrow site ☐ other

Location (Please also attach or draw map on back.)

County: _____ Landowner/Mgr: _____

Quad Name: _____ Elevation: _____ UTM: _____

T R ¼ of ¼ Sec T R ¼ of ¼ Sec

Habitat Description (Plant communities, dominants, associates, substrate/soils, aspects/slope)

Other rare spp.?

Site Information Overall site quality: ☐ Excellent ☐ Good ☐ Fair ☐ Poor

Current/surrounding land use:

Visible disturbances, possible threats:

Comments:

Determination: (Check one or more, fill in the blanks)

___ Keyed in a site reference: _____

___ Compared with specimen housed at: _____

___ Compared with photo/drawing in: _____

___ By another person (name): _____

___ Other: _____

Photographs: (Check one or more)	Slide	Print
Plant/animal	___	___
Habitat	___	___
Diagnostic Feature	___	___

May we obtain duplicates at our expense? ☐ Yes ☐ No

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
Sacramento Field Office
3310 El Camino Avenue, Suite 130
Sacramento, California 95821-6340

IN REPLY REFER TO:

1-1-96-I-1660

September 26, 1996

U.S.A.C.O.E.
Colonel Dorothy Klasse
District Engineer
1325 J Street
Sacramento, California 95814-2922

Subject : Guidelines for Botanical Inventories on Project Sites That May Contain Federally Listed, Proposed, Candidates, and/or Species of Concern

Dear Col. Klasse:

The U.S. Fish and Wildlife Service (Service) would like to bring to the attention of your agency the enclosed Guidelines for Conducting and Reporting Botanical Inventories. These guidelines represent minimum standards for botanical inventories conducted on proposed project sites which may support target species which include federally listed, proposed, candidate species or species of concern. Since the enactment of the Endangered Species Act (Act) of 1973, as amended, the Service has listed or proposes to list 79 plant species as endangered or threatened within the area of responsibility of the Sacramento Field Office. With this large number of plant species, some of which grow in habitats within the jurisdiction of your agency, it becomes increasingly important to establish consistent standards that the Service will use in determining whether formal consultation or conference pursuant to Section 7 of the Act is necessary. Assessments of direct and indirect project effects on listed and proposed plants must be based upon adequate botanical inventories. The careful use of these guidelines will ensure adequate documentation of findings and provide a consistent standard for information gathering and reporting of botanical resources.

We encourage the use of these guidelines for information gathering for the consultation process. We recommend that the Corps require applicants to provide documentation of adequately conducted botanical inventories according to the enclosed guidelines for projects within the range of listed or proposed plant species. The enclosed recommended botanical inventory documentation should be submitted concurrently with any survey results for any listed animals. Upon receipt of this information from the applicants, the Corps and the Service can make determinations of "no effect", "not likely to adversely affect", or "likely to adversely affect" for all listed and proposed taxa on project sites.

Key provisions of the inventory guidelines include documenting the presence or absence of federal plant target species, and reporting distribution and abundance of them, if found. Once listed or proposed species are found and documented according to these guidelines, botanical surveys do not need to be continued in subsequent years. However, changes in abundance and distribution found in subsequent years should be documented and reported as an addendum to the original survey.

The Service encourages your agency to inform project applicants of our guidelines to ensure that adequate botanical inventories are conducted. If you have any questions regarding the enclosed guidelines, please contact Jan Knight, Ken Fuller, or Diane Elam of my staff at the letterhead address or by calling (916) 979-2120.

Sincerely,

Joel A. Medlin

Joel A. Medlin
Field Supervisor

Enclosure

cc: AES-Portland, OR
FWS-VFO (T. Thomas)
FWS-CFO (F. Roberts)
FWS-ISO (E. Rey-Vizgirdas)
FWS-OSO (A. Robinson)
FWS-NSO (J. Bair)
FWS-NCVFWO (J. Smith)
FWS-KRFWO (R. Iverson)
FWS-CCFWO (B. Halstead)
California Native Plant Society (D. Tibor)
CDFG, Plant Conservation Program (S. Morey)
CPR (C. Roye)
CALTRANS (K. Wigglesworth)
CFFP (R. Wilson)

Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants

(September 19, 1996)

These guidelines describe protocols for conducting botanical inventories for federally listed, proposed and candidate plants, and describe minimum standards for reporting results. The Service will use, in part, the information outlined below in determining whether the project under consideration may affect any listed, proposed. or candidate plants, and in determining the direct, indirect, and cumulative effects.

Field inventories should be conducted in a manner that will locate listed, proposed, or candidate species (target species) that may be present. The entire project area requires a botanical inventory, except developed agricultural lands. The field investigator(s) should:

1. Conduct inventories at the appropriate times of year when target species are present and identifiable. Inventories will include all potential habitats. Multiple site visits during a field season may be necessary to make observations during the appropriate phenological stage of all target species.

2. If available, use a regional or local reference population to obtain a visual image of the target species and associated habitat(s). If access to reference populations(s) is not available, investigators should study specimens from local herbaria.

3. List every species observed and compile a comprehensive list of vascular plants for the entire project site. Vascular plants need to be identified to a taxonomic level which allows rarity to be determined.

4. Report results of botanical field inventories that include:

   a. a description of the biological setting, including plant community, topography, soils, potential habitat of target species, and an evaluation of environmental conditions, such as timing or quantity of rainfall, which may influence the performance and expression of target species

   b. a map of project location showing scale, orientation, project boundaries, parcel size, and map quadrangle name

   c. survey dates and survey methodology(ies)

   d. if a reference population is available, provide a written narrative describing the target species reference population(s) used, and date(s) when observations were made

   e. a comprehensive list of all vascular plants occurring on the project site for each habitat type

   f. current and historic land uses of the habitat(s) and degree of site alteration

   g. presence of target species off-site on adjacent parcels, if known

   h. an assessment of the biological significance or ecological quality of the project site in a local and regional context

5. If target species is(are) found, report results that additionally include:

   a. a map showing federally listed, proposed and candidate species distribution as they relate to the proposed project

   b. if target species is (are) associated with wetlands, a description of the direction and integrity of flow of surface hydrology. If target species is (are) affected by adjacent off-site hydrological influences, describe these factors.

   c. the target species phenology and microhabitat, an estimate of the number of individuals of each target species per unit area; identify areas of high, medium and low density of target species over the project site, and provide acres of occupied habitat of target species. Investigators could provide color slides, photos or color copies of photos of target species or representative habitats to support information or descriptions contained in reports.

   d. the degree of impact(s), if any, of the proposed project as it relates to the potential unoccupied habitat of target habitat.

6. Document findings of target species by completing California Native Species Field Survey Form(s) and submit form(s) to the Natural Diversity Data Base. Documentation of determinations and/or voucher specimens may be useful in cases of taxonomic ambiguities, habitat or range extensions.

7. Report as an addendum to the original survey, any change in abundance and distribution of target plants in subsequent years. Project sites with inventories older than 3 years from the current date of project proposal submission will likely need additional survey. Investigators need to assess whether an additional survey(s) is (are) needed.

8. Adverse conditions may prevent investigator(s) from determining presence or identifying some target species in potential habitat(s) of target species. Disease, drought, predation, or herbivory may preclude the presence or identification of target species in any year. An additional botanical inventory(ies) in a subsequent year(s) may be required if adverse conditions occur in a potential habitat(s). Investigator(s) may need to discuss such conditions.

9. Guidance from California Department of Fish and Game (CDFG) regarding plant and plant community surveys can be found in Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities, 1984. Please contact the CDFG Regional Office for questions regarding the CDFG guidelines and for assistance in determining any applicable State regulatory requirements.

State of California
THE RESOURCES AGENCY
Department of Fish and Game
May 4, 1984

GUIDELINES FOR ASSESSING THE EFFECTS OF PROPOSED DEVELOPMENTS ON RARE AND ENDANGERED PLANTS AND PLANT COMMUNITIES

The following recommendations are intended to help those who prepare and review environmental documents determine when a botanical survey is needed, who should be considered qualified to conduct such surveys, how field surveys should be conducted and what information should be contained in the survey report.

1. Botanical surveys that are conducted to determine the environmental effects of a proposed development should be directed to all rare and endangered plants and plant communities. Rare and endangered plants are not necessarily limited to those species which have been "listed" by state and federal agencies but should include any species that, based on all available data, can be shown to be rare and/or endangered under the following definitions.

   A species, subspecies or variety of plant is "endangered" when the prospects of its survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition or disease. A plant is "rare" when, although not presently threatened with extinction, the species, subspecies or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens.

   Rare plant communities are those communities that are of highly limited distribution. These communities may or may not contain rare or endangered species. The most current version of the California Natural Diversity Data Base's Outline of Terrestrial Communities in California may be used as a guide to the names of communities.

2. It is appropriate to conduct a botanical field survey to determine if, or the extent that, rare plants will be affected by a proposed project when:

   a. Based on an initial biological assessment, it appears that the project may damage potential rare plant habitat;

   b. Rare plants have historically been identified on the project site, but adequate information for impact assessment is lacking; or

   c. No initial biological assessment has been conducted and it is unknown whether or not rare plants or their habitat exist on the site.

3. Botanical consultants should be selected on the basis of possession of the following qualifications (in order of importance):

   a. Experience as a botanical field investigator with experience in field sampling design and field methods;

   b. Taxonomic experience and a knowledge of plant ecology;

   c. Familiarity with the plants of the area, including rare species; and

   d. Familiarity with the appropriate state and federal statutes related to rare plants and plant collecting.

4. Field surveys should be conducted in a manner that will locate any rare or endangered species that may be present. Specifically, rare or endangered plant surveys should be:

   a. Conducted at the proper time of year when rare or endangered species are both "evident" and identifiable. Field surveys should be scheduled (1) to coincide with known flowering periods, and/or (2) during periods of phenological development that are necessary to identify the plant species of concern.

b. Floristic in nature. "Predictive surveys" (which predict the occurrence of rare species based on the occurrence of habitat or other physical features rather than actual field inspection) should be reserved for ecological studies, not for impact assessment. Every species noted in the field should be identified to the extent necessary to determine whether it is rare or endangered.

c. Conducted in a manner that is consistent with conservation ethics. Collections of rare or suspected rare species (voucher specimens) should be made only when such actions would not jeopardize the continued existence of the population and in accordance with applicable state and federal permit regulations. Voucher specimens should be deposited at recognized public herbaria for future reference. Photography should be used to document plant identification and habitat whenever possible, but especially when the population cannot withstand collection of voucher specimens.

d. Conducted using systematic field techniques in all habitats of the site to ensure a reasonably thorough coverage of potential impact areas.

e. Well documented. When a rare or endangered plant (or rare plant community) is located, a California Native Species (or Community) Field Survey Form or equivalent written form should be completed and submitted to the Natural Diversity Data Base.

5. Reports of botanical field surveys should be included in or with environmental assessments, negative declarations, EIR's and EIS's, and should contain the following information:

a. Project description, including a detailed map of the project location and study area.

b. A written description of biological setting referencing the community nomenclature used and a vegetation map.

c. Detailed description of survey methodology.

d. Dates of field surveys.

e. Results of survey (including detailed maps).

f. An assessment of potential impacts.

g. Discussion of the importance of rare plant populations with consideration of nearby populations and total species distribution.

h. Recommended mitigation measures to reduce or avoid impacts.

i. List of all species identified.

j. Copies of all California Native Species Field Survey Forms or Natural Community Field Survey Forms.

k. Name of field investigator(s).

l. References cited, persons contacted, herbaria visited, and disposition of voucher specimens.

STATE OF CALIFORNIA—THE RESOURCES AGENCY

GEORGE DEUKMEJIAN, Gover

DEPARTMENT OF FISH AND GAME
GION 4
34 East Shaw Avenue
Fresno, CA 93710
(209) 222-3761

May 8, 1990

Dear Sensitive Species Surveyor

Attached are the survey methodologies for San Joaquin kit fox, blunt-nosed leopard lizard, giant kangaroo rat, Tipton kangaroo rat and San Joaquin antelope squirrel. These methodologies were developed by Region 4 of the California Department of Fish and Game with input from the United States Fish and Wildlife Service, the Bureau of Land Management and various species experts. Standardized methodologies were developed to provide consultants, local, state and federal agencies with minimum acceptable standards for surveys that are conducted to determine the presence of state-listed species. All project specific surveys conducted after June 15, 1990 should use these methodologies. We want to emphasize that these survey methods were designed to optimize the chance of detecting the presence of a listed species should it occur on a project site. They are not designed to determine the absence of a species. If a listed species presence is detected prior to conducting surveys using these techniques, no additional surveys need to be conducted until the Regional office is contacted.

When the presence of a listed species is detected, we request you notify the Region 4 office at (209) 222-3761 for further instructions on what additional information will be needed to assess the projects's potential impact on listed species. This will assist in expediting the review of the project and help control the project sponsors biological survey costs. We also suggest that the USFWS be contacted for further advice as soon as federally-listed species are detected.

Field surveyors should also be aware that both state and federal permits are required for trapping/handling of listed species. For further information regarding permits for state-listed species, please contact Mr. John Gustafson at (916) 322-1260. For additional information regarding permits for federally-listed species, please contact the USFWS at (916) 978-4866. Please remember that if you are trapping within the known range of a listed species, the possibility exists that you may capture a listed species. Absent a permit from the Department and USFWS for their capture, you could be in violation of the State and/or Federal Endangered Species Acts.

If you have any questions, comments regarding the methodologies or if you want to propose the use of alternative methodologies, please contact Ron Rempel, Associate Wildlife Biologist, at the above address or telephone number.

Sincerely,

for George D. Nokes
Regional Manager

Attachments

MINIMUM REQ

The following survey methods were developed to determine the presence of a species, not the absence. They are not designed to determine the density of the species nor the quality of the habitat based on the number of sightings. When a listed species is detected, surveys for that species may be discontinued (burrow and precinct mapping should be completed) and the agencies notified (USFWS and DFG). At that time we will discuss with the applicant and consulting biologist what additional specific studies (if any) must be conducted to determine: (1)the level of impact that a project will have on the species; (2) how the project can be modified to reduce impacts; and (3) appropriate mitigation measures.

Please remember that take (including harassment and trapping) of listed species is prohibited unless appropriate permits are obtained. As professional biologists conducting surveys, every effort should be made to accurately determine if a listed species is present. If a species is present and you fail to detect it, project proponents could encounter significant delays in their project or be placed in a situation where they may violate the State and/or Federal. endangered species acts. If you have a question or would like to propose a modification of the survey methods for a specific project, please contact the Department at (209) 222-3761 or the USFWS at (916) 978-4866.

CALIFORNIA DEPARTMENT OF FISH AND GAME
REGION 4
APPROVED SURVEY METHODOLOGIES
FOR SENSITIVE SPECIES

SAN JOAQUIN KIT FOX, Vulpes macrotis mutica

Status: CT, FE

Methods: Three methods should be used to survey for San Joaquin kit fox (SJKF): 1) night spotlighting, 2) line transects (to identify known and potential den sites), and 3) scent stations.

1) Night spotlighting should be conducted on a minimum of six nights (within a 14-day period) using 400,000+ (minimum) candle power spotlights. Surveys should be conducted using at least two observers with spotlights (one for each side of the road). For adequate visibility the observer's eye level should be a minimum of 60 inches above the road surface. This generally precludes the use of cars and small trucks for spotlight surveys. The survey vehicle should be operated at 10 m.p.h. or less. The entire project area should be surveyed, as well as approximately a two-mile area around the subject property. Vehicles should only be operated on existing roads to avoid adversely impacting endangered species or their habitat. Spotlighting should be conducted for a minimum of 3 hours each night and the routes should be varied so that specific locations are not spotlighted at the same time each survey period. Whenever eyeshine or animal movement is detected, the vehicle should be stopped and the animal identified using binoculars (minimum 7x35) or spotting scopes. Sightings of SJKF, their prey, and competing predators should be recorded for later mapping, and the time, mileage, weather, and moon phase noted. Spotlight surveys should not be conducted when visibility is less than 2 miles.

2) Daytime line transect surveys for dens, tracks, scat, etc., should be conducted by walking the property at 10-30 meter (30 to 100-foot) intervals so that the area is completely covered in a systematic manner. Transect width should be adjusted based on vegetation height, topography, etc., to facilitate the detection of dens and other sign. When a den or burrow is discovered, the observer should determine if it has the potential to be used by SJKF and if it is currently occupied (please refer to the attached USFWS SJKF den definitions). Potential burrow openings are generally round or oval in shape, 10-25 centimeters (4-10 inches) in diameter, and often have multiple openings. SJKF activities at a den site should be determined by noting a variety of factors (fresh digging, presence of prey remains, tracks, or scat near the opening). All known and potential dens should be accurately mapped. Photographs of the dens should be taken along with information on topography, vegetation, land use, den

3) Scent stations should be established at a minimum density of five scent stations per 640 acres. One scent station should be placed at the center of the project site with the other four placed 1/4 mile away (i.e. a domino 5 pattern). A minimum of 5 scent stations is required for all projects unless otherwise agreed to by CDFG and USFWS. If a linear corridor is being surveyed, five scent stations should be established per linear mile. Scent stations should not be set adjacent to heavily traveled roads to reduce the potential for kit fox/vehicle collisions. Scent stations should be operated for a minimum of six nights (within a 14-day period), and checked each morning for visitation, re-baited and tracks cleared when necessary. All tracks observed (i.e. kit fox, dogs, kangaroo rats, etc.) should be recorded on pre-formatted data sheets.

Scent stations should be situated on relatively level ground and cover a circle approximately 1 meter (39-inches) in diameter. All vegetation and debris should be cleared and a thin layer (1-2 cm) of fine-grained tracking material (diatomaceous earth, fire clay, finely sifted soil) sifted over the site. (The tracking substrate must be of a consistency to delineate the lines of a human hand when placed on the tracking medium). Smoked tracking plates are also acceptable. The scent stations should be baited with cat food placed at the center of the scent station (i.e. directly on the tracking substrate) or with "Predator Survey Disks". Because kit fox have been observed to occasionally avoid scent stations baited with predator survey disks and fish-based baits, no more than 50% of the scent stations should use these types of bait. The disks are available from Pocatello Supply Depot, 238 E. Dillon, Pocatello, ID 83201, or (208) 236-6920.

Timing: The optimum survey period is between May 1 and September 30. Surveys conducted outside of the optimum period should include a minimum ten nights of scent station operation. The period of lowest detectability is December, January and February. Survey methods for detecting kit fox during these months should be reviewed with the agencies prior to commencing field work. When presence of SJKF is confirmed, the agencies should be contacted for further instructions.

Species
Expert:

Dan Williams
CSU Stanislaus
Department of Biological Sciences
Turlock, CA 95380
(209) 667-3476 or (209) 667-3485

Sue Orloff
BioSystems Analysis Inc.
3152 Paradise Drive, Bldg. 39
Tiburon, CA 94920
(415) 435-0399

Linda Spiegel
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814
(916) 324-3230

CALIFORNIA DEPARTMENT OF FISH AND GAME
REGION 4
APPROVED SURVEY METHODOLOGIES
FOR SENSITIVE SPECIES

BLUNT-NOSED LEOPARD LIZARD, Gambelia silus

Status: CE, FE

Methods: Blunt-nosed leopard lizards (BNLL) are often difficult to detect, especially in situations where shrubs are numerous and/or the herbaceous vegetation is tall (> 30 cm). Ten to 30 meter (30 to 100 foot) wide transects should be walked at a slow pace. The surveyor should stop frequently and scan the transect for BNLL using binoculars (minimum 7x35). BNLL surveys should be conducted for six days (or until BNLL presence is detected). Two of the six BNLL surveys may be conducted cocurrently with surveys for other species while four of the surveys must be conducted strictly for BNLL. This allows the surveyor to concentrate on looking for BNLL. Surveys should be conducted between 0900 and 1400 hrs. and within the appropriate temperature criteria. Generally, transects should be walked in a north-south direction to improve visibility (e.g. to reduce sun/glare problems). Optimum BNLL activity periods occur when air temperatures (measured 1-2 cm above the ground with thermometer shaded from the sun) are between 25^{o}-35^{o} C and soil temperatures (measured 1-2 cm below the surface in the shade) are between 30^{o}-50^{o} C. Transect surveys should only be conducted when these conditions are met. These parameters should be checked at the start and end of each transect. In addition to recording the location of any BNLL observed, the presence of special habitat features (washes, playas, relative abundance of small mammal burrows) should be recorded for each transect. Burrows and open areas should be examined closely for BNLL tail drags and scat. If BNLL are observed incidental to conducting surveys for other species, specific surveys for BNLL are not required.

Timing: BNLL are active above ground from April through September, but optimum activity periods occur from April 15 to June 30. All BNLL surveys should be confined to the periods April 15 to June 30 and August 1 to September 15. Please note that BNLL surveys conducted in July are not acceptable.

CALIFORNIA DEPARTMENT OF FISH AND GAME
REGION 4
APPROVED SURVEY METHODOLOGIES
FOR SENSITIVE SPECIES

SAN JOAQUIN ANTELOPE SQUIRREL, Ammospermophilus nelsoni

Status: CT, FC2

Methods: The San Joaquin antelope squirrel (SJAS) is a vocal, diurnal species. Although burrow entrance sizes overlap with other rodents, SJAS burrows can usually be distinguished by the presence of irregularly-sized scats. Surveys for SJAS should be conducted using daytime line transects at 10-30 meter (30 to 100 foot) intervals so that the area is covered in a systematic manner. While walking the transects, the observer should scan the area (including using binoculars) looking for the species and listening for the species vocalizations. Transect surveys should be conducted only when air temperatures are between 20-30° C (68-86° F). These parameters should be checked before beginning each transect. Visual and audible observations of SJAS should be recorded and mapped along with the location of suitable burrows. Representative burrows should be photographed.

Timing: Surveys for SJAS should coincide with their most active season, April 1 to September 30. Less active times of year are associated with low temperatures. Surveys conducted outside of these parameters which confirm the presence of the species will also be accepted.

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CALIFORNIA DEPARTMENT OF FISH AND GAME
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APPROVED SURVEY METHODOLOGIES
FOR SENSITIVE SPECIES

TIPTON KANGAROO RAT, Dipodomys nitratoides nitratoides

Status: CE, FE

Methods: Live-trapping is the primary method for reliable Tipton kangaroo rat (TKR) identification (Williams, pers. comm.), but in many instances it may be possible to determine the probable presence of TKR on a site based on a variety of factors. Preliminary surveys to determine the probable presence of TKR should be based on range, presence of habitat, burrow characteristics, scat size, track measurements, and skeletal remains found in owl pellets. The locations of suitable habitat, potential burrows, and other sign should be reported to DFG and USFWS to determine if trapping will be necessary. Please note; these criteria can only be used for the determination of presence. The Department will not accept the use of these criteria to determine that the site is unoccupied by TKR.

Live-traps should be placed close to burrow entrances, along runways, and near rodent sign to increase trapping success. Flagging should be located at each tap or trap cluster with the number of traps at that location noted on the flagging to assure that all traps are checked. Traps should be baited with rolled oats, oatmeal, peanut butter or other appropriate bait. Traps should be monitored for four consecutive nights or until presence is confirmed. A minimum of 100 traps per 160 acres should be used.

Timing: TKR are active year around, but optimum activity periods occur from April 1 to June 30. If trapping studies are required by the agencies, the traps should be opened at sunset and checked and closed for the night after approximately four hours. Insulating materials may be placed in traps, but must be changed each time an animal is trapped. Species experts recommend using tightly wadded paper towels as insulating material. Dacron or similar materials should not be used in the traps.

CALIFORNIA DEPARTMENT OF FISH AND GAME
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APPROVED SURVEY METHODOLOGIES
FOR SENSITIVE SPECIES

GIANT KANGAROO RAT, Dipodomys ingens

Status: CE, FE

Methods: Surveys for giant kangaroo rats (GKR) should focus on the identification of their characteristic habitat types and burrow systems (50-55 mm in diameter). GKR inhabit individual territories (known as precincts) averaging 6 meters (20 feet) in diameter where a shallow burrow system is constructed. GKR are found in colonies consisting of two to thousands of precincts.

Daytime line transect surveys for burrow systems should be conducted by walking the property at 10-30 meter (30 to 100-foot) intervals to provide systematic coverage of the entire project area. Transect width should be adjusted based on vegetation height, topography, etc., to facilitate the detection of precincts and other sign. All known or potential GKR precincts should be accurately mapped. Photographs of the precincts should be taken, and information on topography, vegetation, land use, etc., recorded. Scat should be collected for later confirmation of species by known experts.

Since Dipodomys heermanni are also known to construct haystacks, the presence of haystacks should not be used as a diagnostic characteristic to confirm presence of GKR. In some instances, confirmation of species' presence may require trapping. Trapping should not be undertaken without prior consultation with the Department's Region 4 Threatened and Endangered Species Coordinator.

Timing: GKR are active year-around.

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