4.9 TRANSPORTATION AND CIRCULATION

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This section describes the current transportation setting for Kings County and generally assesses the impacts of future dairy development on the County's roadway system. The impact analysis is based on information obtained from the Kings County Public Works Department, the 1999 Kings County Regional Transportation Plan (RTP), the 2000 Kings County Federal Transportation Improvement Program, and Caltrans.

SETTING

The transportation system for Kings County is composed of one interstate highway, several State highways, and numerous county and city roads. More than two-thirds (69 percent) of the 1,412 miles of maintained roadways are under the jurisdiction of Kings County. The State of California Department of Transportation (Caltrans) maintains the one interstate freeway, Interstate 5, that traverses the western part of Kings County, plus portions of six State highways. The cities of Hanford, Lemoore, Corcoran, and Avenal maintain the portions of local roads within their city limits.

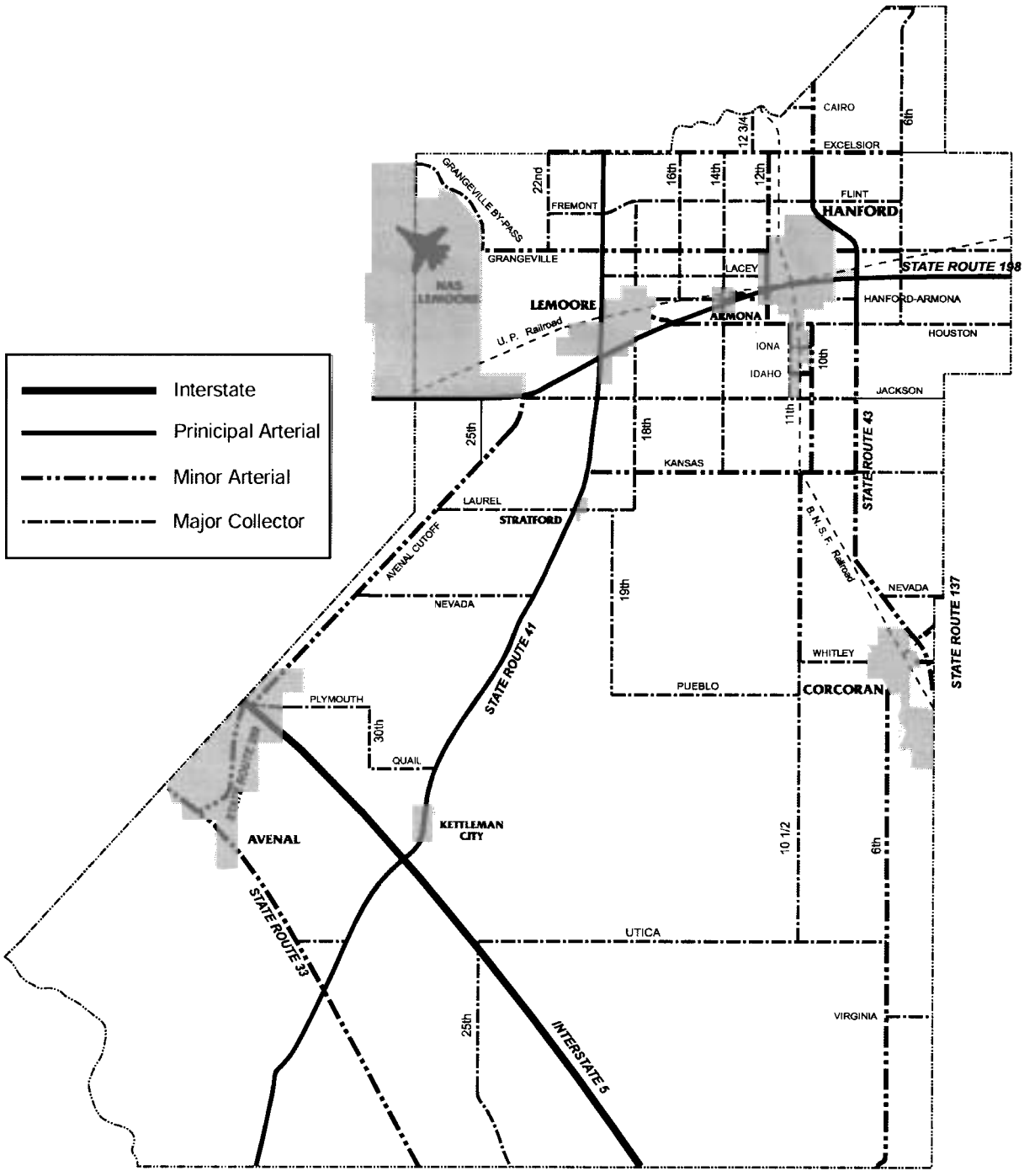
The 1999 Kings County RTP (KCAG, 1999a) identifies two sets of key transportation facilities: the Countywide Regional System of the most heavily used County and State rural roads; and Regionally Significant Roads in Urban Areas, which include busy roads that transect urban areas. The specific roadways designated under each functional category are listed in Table 4.9-1. The key routes according to circulation designation in the countywide regional system are shown on Figure 4.9-1.

The roads that make up the Countywide Regional Network are designated collectively as Routes of Regional Significance in the 1999 Kings County RTP. These roadways comprise a system whose role is to:

- serve intercounty and intra-county travel;
- link important population centers;
- join with other regional routes to form a comprehensive network; and
- provide access between agricultural areas and processing facilities and markets.

Included in this system are 157.3 miles of State-maintained regional routes, including Interstate 5. These are among the most important roads in this area because they serve most of the travel between Kings and surrounding counties, and carry a significant portion of intra-county traffic. The regionally significant, County-maintained roadway system satisfies the majority of the remaining intercounty demand.

TRAFFIC CIRCULATION DESIGNATIONS Figure 4.9-1



Source: KCGA, 1999a.

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TABLE 4.9-1: **Arterials in the Countywide Regional System**

Interstate and Other Principal Arterials Interstate 5 (Kern County to Fresno County) SR 41 (Kern County to Fresno County) SR 43 (Excelsior Ave. to Houston Ave.) SR 137 (SR 43 to Tulare County) SR 198 (Fresno County to Tulare County) Minor Arterials 6th Ave. (Ottawa Ave. to Kern County) 10th/10½ Ave. (SR 43 to Whitley Ave.) 11th Ave. (Idaho Ave. to City limits) 12th Ave. (Excelsior Ave. to City limits and Houston Ave. to City limits)	Minor Arterials - *continued* Avenal Cutoff Rd. (SR 198 to SR 33) Excelsior Avenue (6th Ave. to 22nd Ave.) Grangeville Blvd. (LNAS gate to City limits and 6th Ave. to City Limits) Houston Ave. (City limits to 10th Ave.) Idaho Ave. (10th Ave. to 11th Ave.) Kansas Ave. (SR 43 to SR 41) Whitley Ave. (SR 43 to Sweets Canal) SR 33 (Kern County to Fresno County) SR 43 (Excelsior Ave. to Fresno County and Houston Ave. to Tulare County)

Source: KCAG, 1999a.

EXISTING AND PROJECTED ROADWAY VOLUMES

Existing Levels of Service on State Routes

The existing traffic volumes on State highways in Kings County are relatively low, with many highway segments averaging less than 10,000 vehicles per day (Table 4.9-2). The only State highways that average more than 10,000 daily vehicles are the Interstate 5 freeway and a portion of State Route (SR) 198 from Hanford to the Tulare County line. All State roadways operate at acceptable conditions, i.e., levels of service (LOS) of A, B, or C (KCAG, 1999a). All County roadways are designated by Kings County as truck routes.

TABLE 4.9-2: **Level of Service Criteria, Two-Lane Roadways**

Level of Service	Volume/Capacity (V/C) Ratio
A	0.00 – 0.60
B	0.61 – 0.70
C	0.71 – 0.80
D	0.81 – 0.90
E	0.91 – 1.00
F	>1.00

Source: KCAG, 1999a.

The operating conditions experienced by motorists are described by the concept of "Levels of Service." Level of Service (LOS) is a qualitative measure of the effect of a number of factors, including speed and travel time, traffic interruptions, freedom to maneuver, driving comfort and convenience. Levels of service are designated "A" through "F," from best to worst, and cover the entire range of traffic operations that might occur. LOS A through LOS E generally represent traffic volumes at less than roadway capacity, while LOS F represents over capacity and/or forced flow conditions. Kings County uses a LOS D planning goal for minimum allowable roadway operating conditions. The Caltrans *Guide for Traffic Studies, January 2001* sets a goal of maintaining a target LOS at the transition between LOS "C" and LOS "D." Caltrans defines the volume to capacity ratios for LOS "C" and LOS "D" as 0.68 and 0.85, respectively. The daily traffic capacity of a two-lane roadway is assumed to be 15,000 vehicles per day. Thus, a two-lane roadway with 10,000

vehicles per day would be operating at a volume to capacity ratio of 0.67, which is defined as LOS B (Table 4.9-3).

Future projected traffic volumes on State highways in Kings County are also fairly low. By the year 2015, future traffic is expected to be acceptable on most regional highways. The most congested highways are projected to be the Interstate 5 freeway, the portion of SR 198 from Hanford to the Tulare County line, and the northern portion of SR 41 at Excelsior Avenue (Fresno County line). SR 198 and SR 41 would require widening from two lanes to four lanes to accommodate future volumes.

TABLE 4.9-3: **Existing and Projected Traffic Volumes on State Highways**

State Route Segment	1998 Existing Daily Volume (number)	2015 Projected Daily Volume (number)	Projected Increase (percent)
I-5			
Kern County Line to SR 41	24,600	39,900	46
SR 41 to Fresno County Line	24,300	35,200	48.1
SR 33			
Kern County Line to Avenal	1,900	2,700	42.1
North of Avenal to I-5	1,550	3,100	100
SR 41			
Kern County Line to Excelsior	5,600	7,400	32.1
Fresno County Line	7,800	17,700	126.9
SR 43			
Tulare County Line	3,950	7,200	82.3
Fresno County Line	8,300	12,300	48.2
SR 137			
Jct. SR 43 north of Jct Waukena	1,800	2,600	44.4
Tulare County Line	2,700	3,200	18.5
SR 198			
Fresno County Line to LNAS Main Gate	6,900	7,300	5.8
7th Ave. to Tulare County Line	13,500	18,400	36.3
SR 269			
Jct. SR 33	1,450	11,300	679.3
Fresno County Line	4,650	6,700	44.1

Source: KCAG, 1999a (Table 4-10).

Existing Levels of Service on Local Roads

Traffic volumes on many of the local roads are generally low in Kings County, ranging from several hundred vehicles per day to less than 10,000 vehicles. Rural roads such as Kansas Avenue and 10½ Avenue in the north-central portion of the County where many of the existing dairies are located average between 1,000 and 5,000 vehicles per day (Table 4.9-4). The only local roads that approach congested conditions are portions of Lacey Boulevard and other arterials in the Hanford city limits, which average more than 15,000 vehicles per day.

TABLE 4.9-4: **Existing Traffic Volumes on Local Roads**

Local Road Segment	Existing Daily Volume	Local Road Segment	Existing Daily Volume
Urban Area		**Minor Arterials**	
Lacey Blvd. west of Greenfield Ave.	22,323	South:	
Lacey Blvd. east of Mall Dr.	18,869	Kansas Ave. east of 20th Ave.	1,300
11th Ave. north of Lacey Blvd.	17,542	Kansas Ave. west of 10½ th Ave.	4,500
12th Ave. south of Mall Dr.	16,357	10th Ave. north of Kansas Ave.	1,100
		10½ Ave. south of Kansas Ave.	2,800
		North:	
		Grangeville west of 14th Ave.	3,660
		Excelsior west of SR 43	2,700
		12th Ave. north of Grangeville	3,650

Source: Kings County Association of Governments, Traffic Counts; BASELINE, Chamberlain Ranch Final EIR

Although average daily traffic levels are low on the roads in the rural portion of Kings County, a large portion of the traffic is composed of trucks. Table 4.9-5 identifies the percentage of total vehicular trips attributed to trucks on county roads with a high percentage of truck trips.

TABLE 4.9-5 **Truck Traffic on Roads**, **Percent**

Segment Location	Daily Truck Traffic (percent)
Nevada Ave. west of Cutoff	33.2
Grangeville bypass west of 22nd Ave.	29.7
Nevada Ave. west of SR 41	22.9
Kansas Ave. west of 14th Ave.	19.6
Kansas Ave. west of 11th Ave.	15.2
Grangeville west of 14th Ave.	3.4

Source: KCAG, 1999b.

PLANNED TRANSPORTATION IMPROVEMENTS

The various transportation and circulation improvements that are planned by Kings County are included in two documents: the Kings County RTP and the Federal Transportation Improvement Program (TIP). The RTP

is a 20-year plan for long-term improvements. The basic premise of the TIP is to provide incremental short-term implementation (three years) of the long-range RTP. The TIP serves to present information to Federal funding agencies that determine manageable annual components of a funding program for the long-range plan. The Federal TIP is a compilation of project lists from the State Transportation Improvement Program (STIP), urbanized and non-urbanized areas, and other projects using Federal funding. The TIP is composed of two parts, a priority list of projects and project segments to be carried out in each three year period following the initial adoption of the TIP. The second is a financial plan that demonstrates how the TIP can be implemented.

The major roadway improvement projects identified in the Kings County TIP are those included in the Caltrans State Transportation Improvement Program. These projects include widening of State highways, construction of one interchange, and rehabilitation of various local roads (Table 4.9-6).

Table 4.9-6 **Major Projects in the Kings County RTIP and State Transportation Improvement Program**

Location	Planned Improvement	Estimated Total Cost	Year(s) Programmed
SR 41 near Lemoore, 0.7 mile south of Route 198 to Hanford-Armona Rd.	Two-lane expanded to four-lane highway	21,201,000	Prior year RTIP
SR 198 near Hanford, 0.5 mile east of Route 43 to 0.4 mile west of Route 99	Widen to four-lane expressway	7,477,000	2000-2004
SR 198 in Lemoore at 19th Ave.	Construct interchange	1,781,000	2000-2004
Avenal Cutoff Rd. in Kings County from Laurel Ave. to Route 269	Reconstruction and widening	2,707,000	Prior year RTIP
10th Ave. in Hanford from Route 198 to Grangeville Blvd.	Wide to four lanes and construct bicycle route	4,300,000	2000-2001
Grangeville Blvd. in Hanford, SR 43 to 10th Ave.	Asphaltic concrete overlay and widen shoulders	800,000	2000-2001
7th Ave. in Avenal from SR 269 to SR 33	Reconstruct roadway	300,000	Prior year RTIP
Various locations in Hanford	Rehabilitate roadway	1,771,000	2000-2001
Various locations in Lemoore	Rehabilitate roadway	1,395,000	2000-2001
Various locations in Corcoran	Rehabilitate roadway	1,456,000	Prior year RTIP
Various locations in Avenal	Rehabilitate roadway	8395,000	2000-2001
Various locations in Kings County	Rehabilitate roadway	1,729,000	Prior year RTIP

Sources: Kings County 2000 Regional Transportation Improvement Program and State Transportation Improvement Program.

IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Traffic generated by future dairy development under the Kings County Draft Dairy Element (Element) may impact local and regional roadways in Kings County. These impacts have been assessed by comparing the anticipated traffic volumes generated by new dairies with the existing traffic volume and roadway capacity on key roadways. Effects would be considered significant if future dairy development:

- Causes an increase in traffic that is substantial in relation to the existing traffic volume and capacity of key roadways, or
- Causes levels of service (LOS) for key intersection to drop below the County's operating standard of LOS D or better, or
- Increases traffic hazards to motor vehicles, bicyclists, or pedestrians.

Impact 4.9-1

Truck and other traffic from new dairy development would be added to County roadways. This is a significant impact.

The Element proposes that approximately 257,312 additional milk cows and 285,654 head of support stock can be accommodated on land within designated Dairy Development Overlay Zones (DDOZs) and Nutrient Spreading Overlay Zones (NSOZs) in Kings County. Assuming an average dairy size of approximately 1,000 milk cows, the number of new dairies that could be accommodated is about 257 new dairies, or an increase of 72 percent from the County's existing inventory of 149 dairies. Since the theoretical dairy herd is the limiting control on dairy development, development of larger dairies would result in fewer dairies being constructed.

Average daily truck traffic due to each new 1,000-cow dairy is assumed to be approximately 26 one-way vehicle trips per day. This estimate is based on information provided by recent dairy applicants on milk delivery trucks (two trips), feed delivery trucks (four trips), dry manure trucks (four trips), and workers/visitors for large dairy facilities. It is also assumed that each new dairy would include at least one new residence (16 trips). Truck trips would account for approximately 38 percent of the total estimate additional vehicular trips generated by the new dairies.

Milk trucks that serve the new dairy facilities are expected to travel between the dairies and existing creameries and cheese plants located in Lemoore, Hanford, Tipton, Fresno, and Tulare. The milk truck trip distribution pattern would vary over time, depending on production schedules at the processing plants. Therefore, the trips would be distributed

relatively evenly over the principal and minor arterials within the County. Feed trucks are expected to travel between the new dairies and nearby farms and grain elevators. Dry manure trucks are expected to travel from the new dairy locations in the central part of Kings County to various rural locations within the County. Employee traffic is expected to be between the new dairy facility locations and the local population centers, such as Corcoran, Hanford, and Lemoore.

Construction of approximately 257 new dairy facilities would generate a total of approximately 6,682 daily trips to the local and regional roadway system, which would be distributed according to where each of the new dairies was located. The traffic added by each dairy project to any given roadway would be approximately 25 to 30 vehicle trips per day. The addition of this small amount of new dairy traffic would not exceed the capacity of the existing roadways, since many of the roadways in the County are operating at a level of service in the LOS A and B range. Caltrans has recently established criteria for determining whether a Traffic Impact Study (TIS) should be required of proposed development projects (Caltrans, 2001). In general, a TIS would not be required for projects generating less than 50 peak hour trips assigned to a State highway facility operating at LOS "C" or "D" or higher or is experiencing noticeable traffic delays. A TIS would be required under these conditions if the potential for a traffic incident is significantly increased. The only roadways in Kings County that are operating near capacity are located in urban areas, such as Hanford, where new dairy development would not be allowed. The impacts of growth to local and regional roadways in Kings County due to implementation of the Element would generally be considered less than significant.

Similarly, when truck and employee traffic from future individual dairy facilities are added to existing peak hour traffic volumes at key intersections throughout the rural part of Kings County, most of the intersections would continue to experience levels of service in the LOS A to LOS C range, which are well within the acceptable LOS range (i.e., LOS A to LOS D). Individual dairy project impacts would be assessed, but generally, the impacts of future dairy development to key intersections would be considered less-than-significant.

Each dairy site would be expected to have its own access to the adjacent local roadway. Therefore, the project's traffic will be well dispersed geographically, precluding concentrated traffic flows at any access point. All local roadways in the rural areas of Kings County that are designated for future dairy development are straight, two-lane roads in a relatively flat terrain. Visibility and sight distances are good. All of the proposed dairy sites allowed by the Element policies are currently in use for agricultural purposes, as is most of the land in the general vicinity. Therefore, each dairy project's added traffic would generally not be expected to create or exacerbate traffic safety hazards. The potential safety impacts would be considered less than significant.

Kings County does not currently impose any traffic impact policies or fees that affect new dairy applications (Lear, 2000). The traffic impacts of dairy projects are examined on a case-by-case basis. Specific transportation improvements, such as left turn lanes, are sometimes required of dairy applicants. In addition, the local Caltrans District often requests that new dairy facilities not create new driveways on certain segments of State highways. Construction of driveways or other improvements require an encroachment permit from Caltrans.

Existing General Plan policies and zoning regulations require that new developments, including agricultural operations that require a use permit, mitigate identified traffic impacts. The Element contains additional policies that give further guidance to assessing and mitigating environmental impacts of new dairy facilities. For example, **Policy DE 3.1a** of the Element requires that "traffic and road conditions" be one of the criteria that are used to "consider potential environmental effects of dairies when reviewing and evaluating proposals for new or expanded dairies." This policy is further supported by **Policy DE 3.1f**, which requires that all proposed dairy permit applications be specifically reviewed to determine if right-of-way encroachment permits or site-specific roadway improvements are required. **Policy DE 3.4a** additionally requires that all dairy buildings and structures be set back from road rights of way. The expected low vehicle trip generation, acceptable existing and future LOS, dispersed traffic pattern, limited traffic hazards, and requirement for site-specific project review indicate that the traffic impacts of implementation of the Element will not be significant. However, to further protect against localized impacts related to specific dairies, the following mitigation measure is included.

Mitigation Measure 4.9-1

The following policy shall be included in the Element:

"Policy DE 3.1g: The Technical Report for new and expanded dairies shall include a Traffic Impact Study (see Component 8 of Appendix J) prepared by a qualified traffic engineer in conformance with guidelines provided by the California Department of Transportation, which demonstrates that the project will not result in degradation of the level of service of adjacent roadways to below Level of Service (LOS) D on County roadways and LOS C on State highways. Additionally, the Traffic Impact Study shall demonstrate that the proposed dairy project will not result in significant safety hazards.

Where the Traffic Impact Study determines that the LOS will be degraded to a LOS E or lower on adjacent roadways, a conditional use permit and additional environmental review focused on traffic related environmental issues will be required before any new dairy development or expansion of an existing dairy may occur."

Following implementation of this mitigation measure, the impact of additional traffic generated by dairies developed under the Element would be reduced to a less-than-significant level.