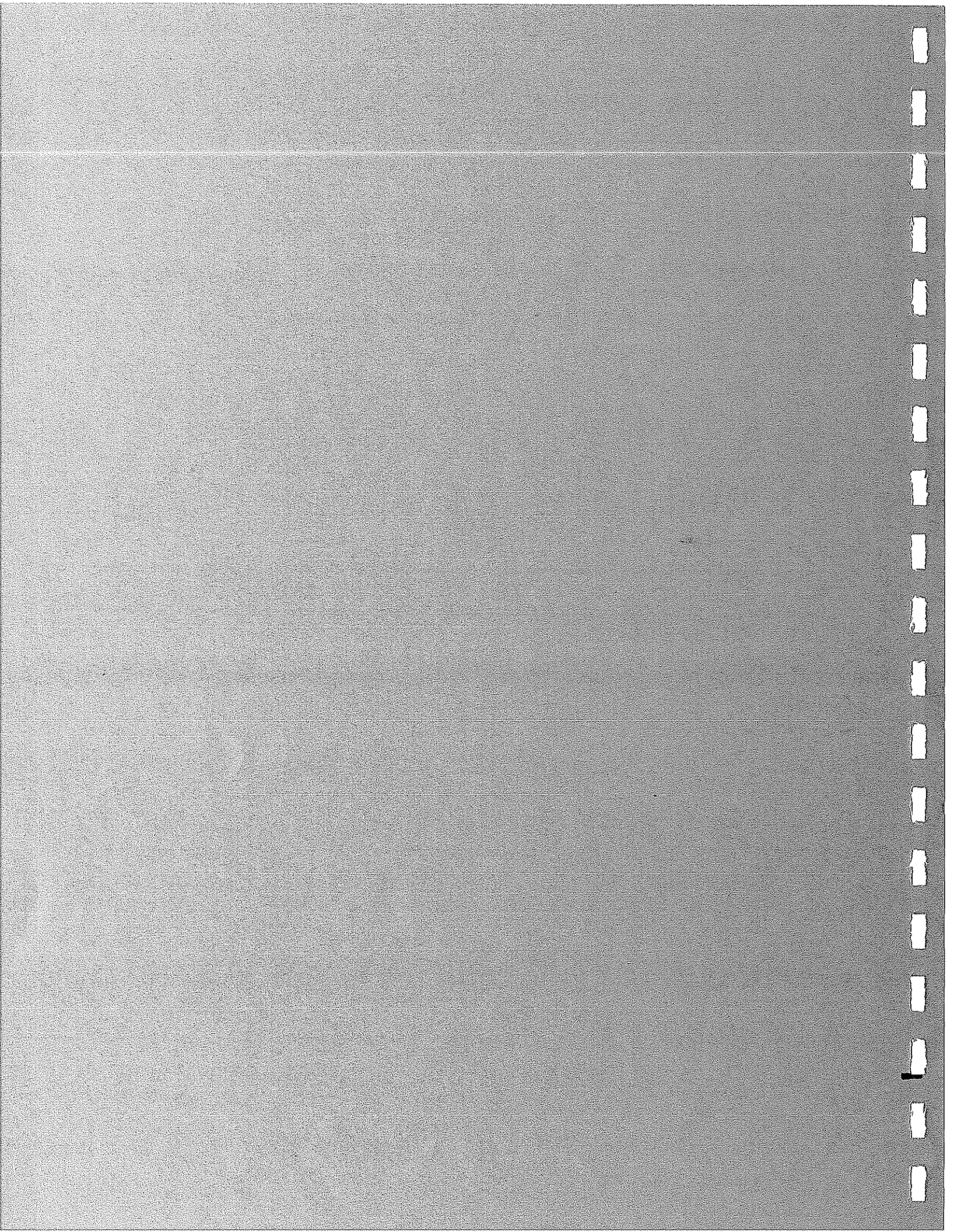


## **4.8 TRAFFIC AND CIRCULATION**



## 4.8 TRAFFIC AND CIRCULATION

### INTRODUCTION

This section contains the setting, impacts, and mitigation measures associated with the traffic and circulation aspects of the proposed project and alternatives. The project would include the actions and performance standards of the *First Draft of the Off-Channel Mining Plan (OCMP) for Lower Cache Creek*, Yolo County, October 30, 1995, the proposed Off-Channel Mining Ordinance, and the proposed changes to the Reclamation Ordinance. The County has received five off-channel applications, which when combined with other assumptions regarding Granite, Schwarzgruber, and recycling, constitute the reasonably foreseeable implementation of the OCMP over the next 30 to 50 years. Therefore, it is appropriate to examine the cumulative impacts associated with these projects as a representation of what to expect from implementation of the OCMP.

The setting describes the existing conditions of the area transportation system for each travel mode including the roadways, the transit system, bicycle and pedestrian facilities and school bus operations. Impacts and mitigation measures are identified for which proposed goals and policies act as mitigation. Potential impacts associated with implementation of the proposed goals, objectives, actions, performance standards, and regulations are also identified. Mitigation measures including added goals, objectives, actions, performance standards, regulations, and areawide programs are provided. The responses received on the Notice of Preparation relative to traffic and circulation dealt primarily with impacts to roadway pavement and the timing of required improvements. These issues are addressed in the impacts and mitigation section of this chapter.

### SETTING

#### Description of the Regional Environment

The study area is located in a rural environment characterized by agricultural uses including orchards, field crops, and open land. Residential development is limited in the area, with agricultural residences scattered throughout. Several small towns are located along SR 16, including Madison, Esparto, and Capay.

The transportation system within the study area is almost entirely dependent upon on the roadway system for the movement of goods and people. The automobile is the primary travel mode for most trips. The majority of regional travel occurs on Interstate 5, Interstate 505 and State Route 16.

## Description of the Local Environment

Transportation within the local environment includes travel on the roadway system, the transit system, the bicycle/pedestrian system and school bus operations. The following summarizes the current status of each facility within the study area.

### Existing Roadway System

The discussion of the roadway system includes a summary of the current roadway conditions and operations, intersection operations, accident history and truck traffic. It concludes with a summary of existing operational deficiencies in the road system.

### *Roadway Conditions and Operations*

With the exception of I-5, I-505 and SR 16, all study roadways in the region are two-lane County roads. Roads numbered between 80 and 100 have north-south directionality and Roads numbered between 10 and 40 have east-west directionality. In addition, a number of smaller roads are located between the primary County roads. These smaller roadways are designated with an "A" or a "B" suffix following the County Road number. Each of the study roadways that serve aggregate-related travel is described below.

Interstate 5 is a four-lane freeway that serves north-south travel throughout the entire State of California. Within the study area, it serves the eastern portion of the study area and maintains interchange access at Road 14, Road 98 and several streets within Woodland.

Interstate 505 is a four-lane, north-south freeway that connects with Interstate 80 near Vacaville and Interstate 5 near Dunnigan. Within the study area, interchanges exist at SR 16, Road 14 and Road 19.

State Route 16 is a two-lane, east-west highway that traverses Amador County, Sacramento County, Yolo County and Colusa County. Within the study area, SR 16 begins at Interstate 5 and intersects Main Street in Woodland three miles to the south. It then runs west for several miles through western Yolo County, eventually turning in a northwesterly direction into western Colusa County. SR 16 generally represents the southern boundary of the study area.

The pavement along the majority of SR 16 is considered to be in fair to good condition with two-to-four foot paved shoulders. (Refer to Table 4.8-1 for a more detailed description of pavement conditions.) Passing is permitted along western portions of SR 16 where the speed limit is 55 miles per hour.

Road 14 is an east-west rural road which forms the northern boundary of the study area. It extends east from Road 85 to I-5 and beyond and provides direct access to both I-505 and I-5 via interchanges. Passing is permitted along the majority of Road 14 and the pavement is in poor condition with no paved shoulders in most locations. A one-mile

Table 4.8-1 Roadway Segment Pavement Conditions				
Road	Roadway Segment	Lane Width (ft.)	Shoulder Width (ft.) <sup>1</sup>	Pavement Condition <sup>2</sup>
SR 16	Road 98 to Road 96	12	2-4	Fair to Good
SR 16	Road 96 to I-505	12	2-4	Fair
SR 16	I-505 to Road 87	12	2-4	Fair
SR 16	Road 87 to Road 85	12	2-4	Fair
Road 14	Road 85 to I-505	10-12	0-1	Poor
Road 19	Road 87 to I-505	10-12	0-1	Poor
Road 20	Road 96 to Road 98	12	0-1	Poor to Fair
Road 85	Cache Creek to Road 14	8-10	0-1	Poor
Road 87	SR 16 to Road 19	12	0-2	Fair
Road 89	Cache Creek to SR 16	12	0-1	Poor
Road 96	SR 16 to Road 20	12	0-2	Fair to Good
Road 98	SR 16 to I-5	12	2-4	Fair to Good
Notes:	<sup>1</sup> Observed width of paved shoulder. <sup>2</sup> Based on field observations. 'Good' pavement is defined as generally smooth surface with limited cracking. 'Fair' pavement is defined as slightly rough with some cracking. 'Poor' pavement is defined as noticeably rough with considerable cracking and some potholes.			

section of Road 14 is unpaved (i.e., gravel roadbed) directly west of I-505. This section contains several sharp turns with a posted speed limit of 25 miles per hour.

Road 19 is a two-lane, east-west road extending between Road 87 on the west and Road 94B on the east. The pavement quality is generally poor and paved shoulders are narrow and infrequent. The interchange at Road 19 and I-505 features northbound and southbound diagonal on- and off-ramps and a long, fairly steep incline over the interstate for eastbound through vehicles. A sharp horizontal curve is located west of the I-505 interchange with a 30 mile-per-hour speed limit.

Road 20 begins just west of Road 96 and extends east to Road 98 where it becomes Kentucky Avenue. The pavement is considered poor west of Road 96, and fair to poor east of Road 96. Cracks in the road are apparent in the westbound direction. There are no shoulders along the majority of the roadway, although the lanes are wide (greater than 12 feet). Passing is permitted between Road 97 and Road 96.

Road 85 extends north from the town of Capay beyond Road 14, forming the western boundary of the study area. The bridge for Road 85 across Cache Creek was washed out in 1995 and reconstruction is expected to be complete by the end of 1996. South of Road 16A, the pavement is in fair to poor condition, with narrow lanes and no paved shoulders.

North of Road 16A, the pavement appears to be in slightly better condition and the lanes are slightly wider. Passing is permitted along the majority of this roadway.

Road 87 begins at SR 16 in Esparto and heads north beyond Road 14. Passing is permitted along the majority of the roadway south of Road 19 and along portions of the roadway north of Road 19. The pavement along the majority of Road 87 appears to be in fair condition.

Road 89 is a north-south road from Road 19 south to Winters (State Route 128) that runs parallel to I-505 approximately one mile to the west. It discontinues across Cache Creek. The pavement condition between Cache Creek and SR 16 is poor and includes numerous cracks and potholes. The travel lanes and shoulders are narrow and passing is permitted along this segment.

Road 96 is a north-south road that begins at Road 24 and terminates just beyond Road 20. This road has narrow paved shoulders and passing is permitted along the entire route. The speed limit is 50 miles per hour and the pavement is in fair condition.

Road 98 is a north-south road that forms the western boundary of the City of Woodland and the eastern boundary of the study area. Road 98 begins at Interstate 80 (I-80) where it forms the I-80/Pedrick Road interchange. It continues north through the western portion of the City of Davis, to the City of Woodland where it forms the SR 16 / Road 98 / Main Street intersection. For the purposes of this study, the concurrent three-mile section of road north of this intersection, known both as SR 16 and Road 98, will be referred to as Road 98.

The operating efficiency of each existing roadway segment was evaluated based on procedures described in the *Highway Capacity Manual - Special Report 209*, Transportation Research Board, 1994. The quality of operations are described in terms of service levels, which vary qualitatively from 'A' (best) to 'F' (worst). Table 4.8-2 provides a general description of traffic operations for each service level.

Table 4.8-2 Level of Service Description	
LOS	Description
A	Represents free flow. Individual users are virtually unaffected by the presence of other vehicles in the traffic stream.
B	Stable flow, but the presence of other users in the traffic stream begins to be noticeable.
C	Stable flow, but marks the beginning of the range of flow in which operation of individual users becomes significantly affected by interactions with others in the traffic stream.
D	Represents high-density, but stable flow.
E	Represents operating conditions at or near the capacity level.
F	Represents forced or breakdown flow.
Source: <i>Highway Capacity Manual, Special Report 209</i> , Transportation Research Board. 1994.	

For the purposes of this study, roadway segments were analyzed by comparing average daily traffic volumes to the applicable capacity thresholds. The level of service (LOS) thresholds for SR 16 and County roads are displayed in Table 4.8-3.<sup>1</sup>

Roadway Segment	Average Daily Traffic Volume at				
	LOS A	LOS B	LOS C	LOS D	LOS E
State Route 16	2,100	5,000	8,500	14,200	23,700
County Roads	1,300	3,400	6,100	10,600	18,000

Source: Fehr & Peers Associates, 1995 based on the *Highway Capacity Manual, Special Report 209*, Transportation Research Board, 1994..

Daily traffic counts were conducted at each producer's main access roadway during October and November, 1995. Traffic counts were conducted over a five-day period. The daily counts include a breakdown of vehicle mix by the number of axles in order to assist in the analysis of potential truck impacts. Average daily traffic counts at other locations (see Figure 4.8-1) were also provided by Yolo County Public Works Department.<sup>2</sup>

It should be noted that the aggregate industry varies seasonally, with the highest activity levels occurring between May and November. According to representatives of the area aggregate producers, the traffic counts conducted in October and November are representative of a high level of production activity<sup>3</sup>. The agricultural industry also varies seasonally, with peak operations occurring in the summer months.<sup>4</sup> Therefore, the counts conducted for this study are considered to be a conservative representation of existing conditions.

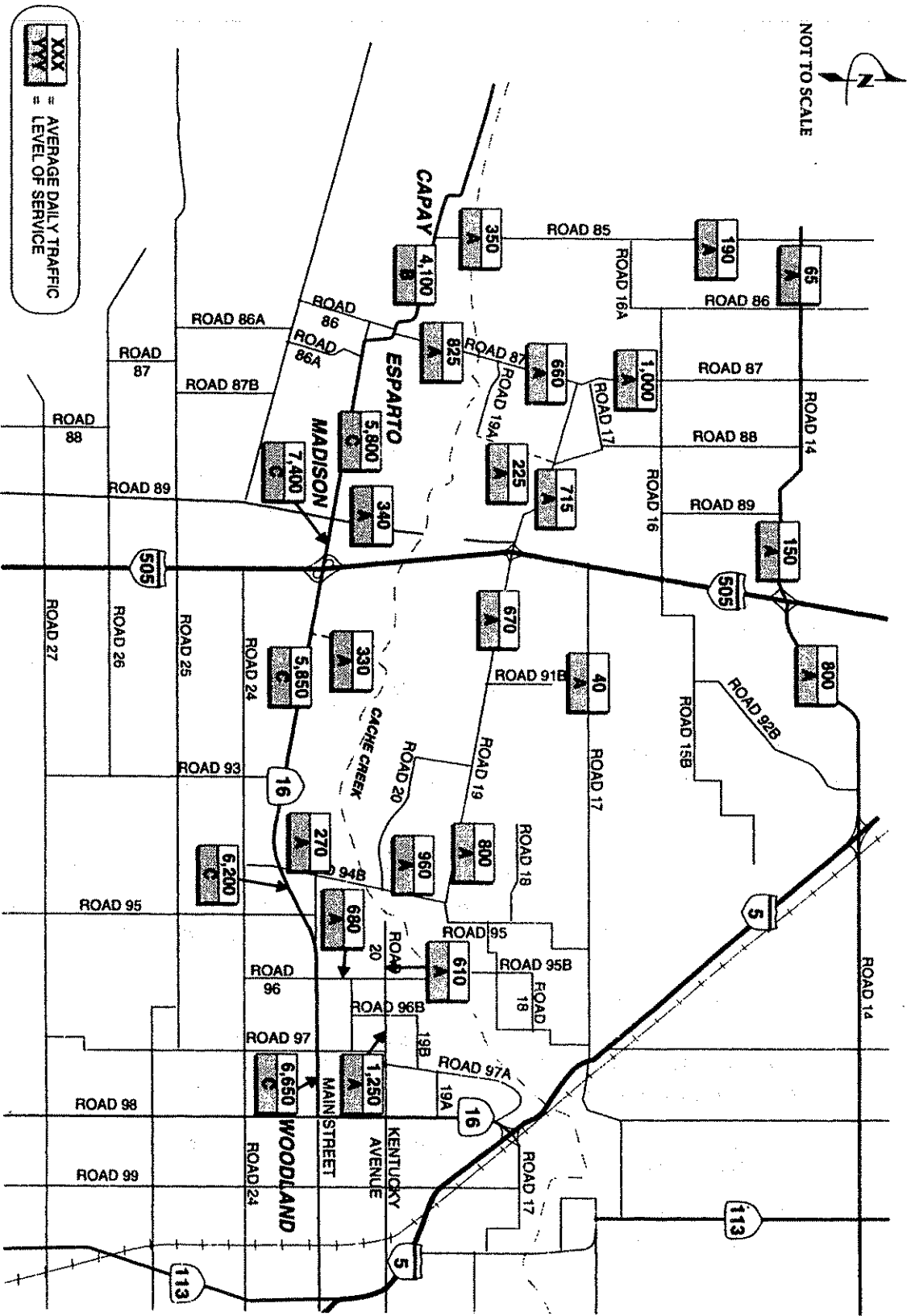
Figure 4.8-1 shows existing daily traffic volumes and corresponding levels of service on roadway segments in the study area. Figure 4.8-1 indicates that all segments of SR 16 under study currently operate at LOS B or C. All County roads currently operate at LOS A.

<sup>1</sup> Refer to the separately bound technical appendix entitled *Technical Appendix to the Long-Term Mining and Reclamation Permit Application Projects along Cache Creek in Yolo County*, Fehr & Peers Associates, February, 1996, for detailed calculations.

<sup>2</sup> Data was collected by the Yolo County Public Works Department on various days and at several locations between 1992 and 1995.

<sup>3</sup> Per telephone conversations with John Perry of Syar Industries and Lillie Noble of Teichert Aggregates in December of 1995.

<sup>4</sup> According to a representative of Mike Lowry Trucking, August and September are the peak months for hauling agricultural products in Yolo County.



**Figure 4.8-1 Existing Roadway Segment Traffic Volumes and Levels of Service**

SOURCE: FEHR & PEERS ASSOCIATES, INC.



## *Intersection Operations*

Key intersections within the OCMP study area that are analyzed in this report include:

- Road 20 / Road 96;
- Road 20 / Road 98;
- State Route 16 / Road 96;
- State Route 16 / Road 98 / Main Street;
- State Route 16 / I-505 Northbound Ramps;
- State Route 16 / I-505 Southbound Ramps;
- State Route 16 / Road 89;
- Road 19 / Road 87;
- Road 19 / I-505 Northbound Ramps;
- Road 19 / I-505 Southbound Ramps;
- Road 14 / Road 85;
- Road 14 / I-505 Northbound Ramps; and
- Road 14 / I-505 Southbound Ramps.

To evaluate existing intersection operations, peak hour intersection turning movement counts were conducted during October and November, 1995 at the 13 study intersections. Additional counts were conducted during the morning peak hour at various intersections to determine the number of aggregate trucks in relation to the total number of trucks. Based on the peak hours of plant operations, as well as school traffic and adjacent street traffic, 7:00 - 9:00 a.m. and 2:00 - 4:00 p.m. were selected as the morning and afternoon peak periods (i.e., two peak hours) for analysis.

Two-way stop-controlled intersections were analyzed using the methodology described in the *Highway Capacity Manual, Special Report 209*, Transportation Research Board, 1994. This methodology calculates the average delay for all vehicles entering an intersection during the peak hour. It should be noted that the calculation of average delay includes through movements which are assumed to have no delay. Thus, if there is a large number of through-movement vehicles, average delay may be small even if considerable delay occurs on the side street.

All-way stop-controlled intersections were analyzed based on the methodology described in the *Highway Capacity Manual, Special Report 209*, Transportation Research Board, 1985. In this methodology, the level of service for an intersection during the peak hour is reported as either 'LOS C or better' or 'Worse than LOS C'. Each of the study intersections was analyzed to determine the existing peak hour operations. The results are summarized in Table 4.8-4.<sup>5</sup> Table 4.8-4 indicates that each intersection currently operates at LOS C or better during the a.m. and p.m. peak hour.

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<sup>5</sup> The traffic volume data and calculation sheets are included in the separately bound technical appendix entitled *Technical Appendix to the Long-Term Mining and Reclamation Permit Application Projects along Cache Creek in Yolo County*, Fehr & Peers Associates, February, 1996.

Table 4.8-4 Existing Conditions - Intersection Levels of Service			
Intersection	Type of Control	AM Peak Hour LOS <sup>1</sup>	PM Peak Hour LOS <sup>1</sup>
Road 20 / Road 96	All-Way Stop	LOS C or Better	LOS C or Better
Road 20 / Road 98	Side-Street Stop	A	A
SR 16 / Road 96	Side-Street Stop	A	A
SR 16 / Road 98 / Main Street	All-Way Stop	LOS C or Better	LOS C or Better
SR 16 / I-505 Northbound Ramps	Side-Street Stop	A	A
SR 16 / I-505 Southbound Ramps	Side-Street Stop	A	A
SR 16 / Road 89	All-Way Stop	LOS C or Better	LOS C or Better
Road 19 / I-505 Northbound Ramps	Side-Street Stop	A	A
Road 19 / I-505 Southbound Ramps	Side-Street Stop	A	A
Road 19 / Road 87	Side-Street Stop	A	A
Road 14 / I-505 Northbound Ramps	Side-Street Stop	A	A
Road 14 / I-505 Southbound Ramps	Side-Street Stop	A	A
Road 14 / Road 85	Side-Street Stop	A	A
Notes: Results are presented as LOS A, B, C, D, E or F for side-street stop-controlled intersections. Results are presented as either "LOS C or better" or "Worse than LOS C" for all-way stop-controlled intersections.			
Source: Fehr & Peers Associates, 1995.			

### Accident History

Accident data from January, 1992 to December, 1994 were obtained for SR 16 from the Caltrans Traffic Accident Surveillance and Analysis System (TASAS) database. Provided in Table 4.8-5 is a summary of total accidents, accidents involving trucks, and a comparison of the actual accident rates to the statewide averages for similar facilities.

Table 4.8-5 shows that the actual accident rate on SR 16 is less than or equal to the average rate on the eastern segments (I-5 to Road 97), but greater than the average rate on the western segments (Road 97 to Grafton Street). Of the nine accidents involving trucks over the three-year period, seven were multi-vehicle collisions. Most of these collisions occurred as vehicles were turning or passing. It is not known whether any of these trucks were associated with the aggregate industry.

**Table 4.8-5  
Summary of Accidents on SR 16 - January, 1992 to December, 1994**

SR 16 Segment	Length (miles)	Total Accidents	Total Acc. Involving Trucks	Total Fatalities	Statewide Avg. Acc. Rate (per million veh)	Actual Acc. Rate (per million veh)
Rd 98 to I-5	3.0	22	1	0	1.64	1.64
Rd 98 to Rd 97	1.0	6	1	0	1.30	0.57
Rd 97 to Rd 94B	3.0	21	1	1	0.95	1.02
Rd 94B to I-505	4.5	32	6	1	0.97	1.31
I-505 to Rd 89	1.0	6	0	0	0.96	1.04
Rd 89 to Rd 21A	3.0	16	0	1	1.00	0.96
Rd 21A to Grafton St.	0.3	2	0	0	1.38	1.57

Source: Caltrans Traffic Accident Surveillance and Analysis System (TASAS) data.

**Table 4.8-6  
Summary of Accidents on County Roads - January, 1992 to October, 1995**

Intersection	# of Accidents	Type	Cause
Road 20 / Road 96	2	Ran off road Ran off road	Speeding Inattention
Road 20 / Road 98	3	Broad-side Hit object Ran off road	Intoxication Inattention Inattention
SR 16 / Road 96	1	Hit object	Inattention
SR 16 / Road 85	2	Hit object Hit object	Fell asleep Intoxication
Road 19 / Road 87	2	Rear-end Hit object	Unknown Unknown
Road 14 / I-505	1	Head-on	Sun in eyes
Road 14 / Road 89	1	Hit object	Unknown
Road 14 / Road 88	1	Ran off road	Unknown
Road 14 / Road 85	1	Hit object	Inattention

Source: Yolo County Public Works Department Accident Records, 1992 - Present

Accident data on County roads from January, 1992 to October, 1995 were obtained from the Yolo County Public Works Department via police accident reports. Table 4.8-6 summarizes the accidents by intersection. Additional accidents may have occurred at these intersections, since accident reports are not always provided to the Yolo County Police Department. While the accident data reported in Table 4.8-6 may not precisely estimate the frequency of accidents, the data represents the most reliable assessment of traffic safety available.

Table 4.8-6 shows that accidents occurred infrequently (i.e., once per year or less on average) at these intersections. The majority of accidents involved single vehicles running off the road or hitting a fixed object, such as a telephone pole or tree. Twenty-one percent of the accidents involved more than one vehicle. No accidents were reported at the SR 16 / Road 98 / Main Street intersection, which experiences the greatest traffic volumes of any study intersection.

### *Truck Traffic*

According to the Public Works Department staff, the County does not currently have designated truck routes. Truck travel is allowed on all County roads and State highways unless identified at a specific location. For the aggregate industry, primary haul routes have been identified in conjunction with a project's approval. Within the study area, truck travel associated with the aggregate industry primarily occurs on Interstates 5 and 505, State Route 16, and County Roads 19, 20, 89, 96, 97 and 98. Figure 4.8-2 displays the current haul routes of aggregate truck travel within the study area.

Truck classification counts were conducted at each study intersection during the morning peak period (7:00 - 9:00 a.m.) of two weekdays during October and November of 1995. As discussed above, this time of year is considered by the area producers as being representative a high level of production activity. Therefore, this data is considered to be a conservative representation of existing conditions.

Table 4.8-7 shows the total number of trucks, and the number of aggregate, agricultural, and utility trucks using each study intersection during the morning peak period. The numbers shown are an average of the two weekday morning peak period truck counts.

Table 4.8-7 indicates that trucks related to the aggregate industry contribute significantly (between 30 percent and 70 percent of all trucks) to existing truck traffic at most study intersections along SR 16. The relative proportion of aggregate trucks to all trucks appears to depend on the proximity of the intersection to existing mining operations and truck routings.

**Table 4.8-7  
Truck Types at Intersections During Morning<sup>1</sup> Peak Period**

Intersection	# of Trucks Aggregate	Truck Type			
		Aggregate	Agricultural <sup>2</sup>	Utility <sup>3</sup>	Other <sup>4</sup>
Road 20 / Road 96	110	104 (94%)	1 (1%)	1 (1%)	4 (4%)
Road 20 / Road 98	135	93 (69%)	17 (12%)	5 (4%)	20 (15%)
SR 16 / Road 96	79	29 (37%)	21 (26%)	14 (18%)	15 (19%)
SR 16 / Road 98	98	30 (31%)	15 (15%)	14 (14%)	39 (40%)
SR 16 / I-505 NB Ramps	111	64 (58%)	13 (12%)	8 (7%)	26 (23%)
SR 16 / I-505 SB Ramps	90	57 (63%)	12 (13%)	6 (7%)	15 (17%)
SR 16 / Road 89	87	38 (44%)	15 (17%)	9 (10%)	25 (29%)
Road 19 / I-505 NB Ramps	15	10 (67%)	5 (33%)	0 (0%)	0 (0%)
Road 19 / I-505 SB Ramps	27	24 (89%)	3 (11%)	0 (0%)	0 (0%)
Road 19 / Road 87	11	1 (9%)	7 (64%)	1 (9%)	2 (18%)
Road 14 / I-505 NB Ramps	14	5 (36%)	7 (50%)	0 (0%)	2 (14%)
Road 14 / I-505 SB Ramps	15	3 (20%)	7 (47%)	0 (0%)	5 (33%)
Road 14 / Road 85	3	0 (0%)	3 (100%)	0 (0%)	0 (0%)

Notes: <sup>1</sup> Number of trucks based on the average of two weekday morning peak period (7:00 - 9:00) a.m. counts.

<sup>2</sup> Including farm goods, equipment, and hay trucks.

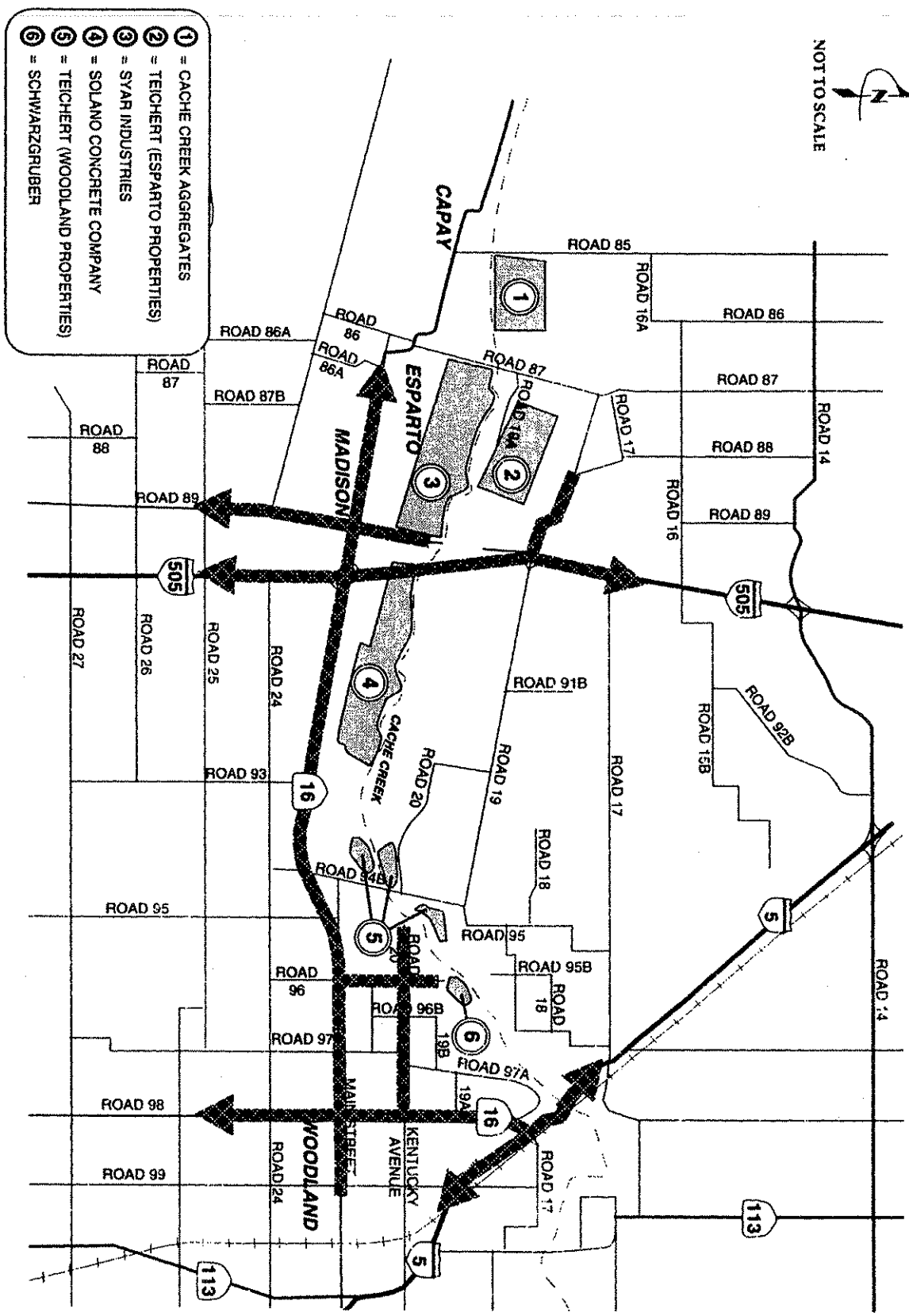
<sup>3</sup> Including gas, electric, and garbage trucks.

<sup>4</sup> Including tanker, delivery, moving, fire, and lumber trucks.

Source: Fehr & Peers Associates, 1995.



NOT TO SCALE



- ① = CACHE CREEK AGGREGATES
- ② = TEICHERT (ESPARTO PROPERTIES)
- ③ = SYAR INDUSTRIES
- ④ = SOLANO CONCRETE COMPANY
- ⑤ = TEICHERT (WOODLAND PROPERTIES)
- ⑥ = SCHWARZGRUBER

Figure 4.8-2 Current Haul Routes

SOURCE: FEHR & PEERS ASSOCIATES, INC.

## *Summary of Existing Operational Issues*

The area roadway system does not currently experience substantial traffic congestion, but as described below, it does include some facilities with existing design features that do not meet current County standards or that represent potential safety concerns.

These facilities generally include non-standard road designs, narrow or substandard bridges, frequent accident locations, segments with deteriorated pavement and intersections with limited curve radii (i.e., sharp intersection curves that cause vehicles to turn into oncoming lanes of travel). Figure 4.8-3 displays the existing operational deficiencies that may be impacted by the project alternatives. A brief description of each facility is provided below.

Non-Standard Road Design. These are roadways with the design features that do not meet current County standards. Field observations<sup>6</sup> identified several locations with non-standard road designs such as sharp horizontal curves or limited sight distance. Each is listed below.

- A safety concern was identified on State Route 16 between I-505 and the entrance to the Solano Concrete plant. Vehicles travelling eastbound on SR 16 just east of the interchange conflict with trucks exiting I-505 northbound and turning right towards the plant. The trucks entering the plant slow down, while the speeds of the eastbound through vehicles on SR 16 are increasing. The lack of a shoulder and a left-turn lane for eastbound traffic on SR 16 causes a safety concern as documented in the *Certified Environmental Impact Report for the Solano Concrete Company Short-Term, Off-Channel Mining Permit Application*, Yolo County, September 5, 1995.
- On Road 19 west of I-505, a series of two sharp horizontal curves exist with a non-standard horizontal road alignment requiring a speed limit of 30 miles per hour. This alignment does not meet current County standards for design speeds on County roadways. The reduced design speed causes a potential for accidents, particularly from vehicles drifting into oncoming travel lanes and rollover accidents from excessive speeds through the curves.
- Road 14, west of I-505, also contains several sharp horizontal curves. This section as a posted speed limit of 25 miles per hour and portions are unpaved (i.e., gravel). The unpaved portion of the road is identified as a separate issue in the section on deteriorated pavement.

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<sup>6</sup> Site surveys conducted at various locations by Fehr & Peers Associates' staff on December 22, 1995.





Narrow or Substandard Bridges. These are bridges that are less than 20 feet in width or that have been identified as being in need of structural repair by the State or Federal Government. Bridge widths were obtained from the *County of Yolo Bridge Replacement Workshop (December, 1993)*, and were verified by field observations<sup>7</sup>.

Two bridges, each located on Road 89, were listed by the Federal government as being in need of replacement or rehabilitation. One bridge is the southbound approach of the SR 16 / Road 89 intersection; the other is located about one-half mile to the north.

The following list summarizes bridges less than 20 feet in width within the study area. The general location of each bridge is provided along with the County bridge number.

- Road 14 between Road 86 and Road 87 (014--11.95)
- Road 19 west of I-505 (019--13.76)
- Road 19 - two bridges east of I-505 (019--15.15, 019--16.79)
- Road 85 north of Road 16A (085--11.71)

Frequent Accident Locations. These include locations in which four or more accidents have occurred in a twelve-month period during the past three years. The data indicate that no individual locations experienced four or more accidents over a 12-month period within the past three years.

Deteriorated Pavement. These include pavement sections that have deteriorated to the point that they may affect public health and safety under existing traffic conditions. Field observations<sup>8</sup> indicated that only one road segment has pavement that meets this condition. A one-mile segment of Road 14 is gravel and the addition of traffic is considered undesirable without improvements to the surface. It should be noted that while a number of road segments were identified as having 'poor' pavement in Table 4.8-1, only the Road 14 section identified above is considered to be deficient to the point that it may affect public health and safety.

Intersections with Limited Curve Radii. These are cases where the limited curve radius at an intersection may cause a truck to access an on-coming lane while making a turning movement. Based on field observations<sup>9</sup>, the following intersections were identified as having limited turning radii:

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<sup>7</sup> Site surveys conducted at various locations by Fehr & Peers Associates' staff on December 22, 1995.

<sup>8</sup> Site surveys conducted at various locations by Fehr & Peers Associates' staff on December 22, 1995.

<sup>9</sup> Site surveys conducted at various locations by Fehr & Peers Associates' staff on December 22, 1995.

- Road 14 / Road 85 - the northbound right-turning movement;
- Road 19 / Road 87 - the northbound right-turning movement;
- Road 20 / Road 96 - all right-turning movements; and
- SR 16 / Road 89 - the westbound right-turning movement .

### *Transit System*

The Yolo County Transit Authority operates 'Yolobus', a fixed-route (i.e., buses follow a pre-determined route) bus service for Yolo County residents. On Mondays and Thursdays, Yolobus provides round-trip service from Capay, Esparto, and Madison to Woodland. A bus departs from Capay at 10:00 a.m. and picks up passengers in Esparto and Madison. It arrives in Woodland at 10:30 a.m. and departs again at 12:30 p.m., dropping off its last passengers in Capay by 12:50 p.m. Figure 4.8-4 shows the existing routing of Yolobus within the study area.

### *Bicycle and Pedestrian System*

Bicycle and pedestrian travel within the study area is limited primarily because of the rural, limited density character of the area. The lack of bicycle and pedestrian facilities also contributes to the limited amount of bicycle/pedestrian travel. According to the *County of Yolo Bikeway Plan, January 1993*, no bicycle facilities currently exist within the study area. This was verified by field observations<sup>10</sup>.

### *School Bus Operations*

Residents living in the unincorporated areas of Yolo County rely on school buses to transport children to school. Two school districts, Woodland Joint Unified and Esparto Unified, are located within the study area. The jurisdiction of the Woodland Joint Unified School District extends from Woodland to Road 95, while the Esparto Unified School District has jurisdiction west of Road 95.

School district staff were contacted to identify existing school bus routes and schedules<sup>11</sup>. Within the study area, the Woodland Joint Unified School District operates three buses.

One bus operates south of SR 16 on Roads 96, 97, and 98 and picks up elementary school students attending school in Woodland. The other buses operate along various study roadways including SR 16 and Road 20. These buses serve both high school and elementary school students. Buses typically operate from 6:00 a.m. to 9:00 a.m. and 2:00 p.m. to 5:00 p.m.

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<sup>10</sup> Site surveys conducted at various locations by Fehr & Peers Associates' staff on December 22, 1995.

<sup>11</sup> Telephone conversation with Eldon Sims, Supervisor, Transportation Department of the Woodland Joint Unified School District Transportation Department on 11/8/95.



The Esparto Unified School District operates four buses that transport students from their residences to schools in Esparto<sup>12</sup>. Buses currently travel on numerous roadways within the study area, including SR 16 from Esparto to Road 93, Roads 93, 85, 86 and 87, and Road 19 from Road 87 to beyond I-505. There are currently three stops on SR 16 within the study area. Hours of bus travel typically occur from 6:00 a.m. to 8:00 a.m. and from 1:00 p.m. to 4:00 p.m.

Figure 4.8-4 shows the roadways within the study area typically traveled by school buses, as well as the current student pick-up locations along SR 16.

### **Regulatory Setting**

The regulatory setting section identifies the policies, plans and regulations of other related planning documents that may be applicable to this analysis. These policies were used to formulate the basis of the standards of significance against which project impacts are evaluated. The following lists the policies and programs relevant to the traffic and circulation analysis.

#### Yolo County General Plan

- CIR 3** Transportation, Basic: Yolo County shall plan, develop, and maintain a comprehensive, coordinated transportation system and road net to insure all persons the opportunity for safe, efficient, convenient, and pleasant movement of persons and goods without substantial congestion or delay, while encouraging greater efficiency, including the substitution of alternate transportation and consideration of ground, air, and water modes.
- CIR 4** Circulation/Reduce Conflicts and Tie Communities: Yolo County shall seek to design and implement a circulation and transportation system which:
1. Reduces conflicts between land use and circulation-transportation.
  2. Shields adjoining areas and community from noise, fumes, dust, and congestion.
  3. Promotes new non-polluting forms of transportation.
  4. Requires routing, construction, and operation of transportation facilities to protect or enhance environmental quality.
  5. Develops intra-community ties by creating a functional and aesthetically pleasing system of transportation corridors, pedestrian and bicycle ways and landscaped open areas which harmonize development in areas of transition.
- CIR 5** Public Transit/Reduce Autos: Yolo County shall seek to establish, expand, and improve a balanced public transportation system, integrated with the Regional System, to meet basic transportation needs as expeditiously as possible; to encourage diversion of substantial numbers of riders from

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<sup>12</sup> Per telephone conversation with Art Plunkett, Maintenance, Operations and Transportation Supervisor for the Esparto Unified School District on 11/8/95.

autos to transit; to meet the transportation needs of the elderly, the handicapped, and the young; and to facilitate interconnections with other modes of transit.

- CIR 6** Measures to Improve Circulation: Yolo County shall continue to seek and improve upon measures to relieve traffic congestion and to ensure traffic safety. Some of the measures to achieve this policy include:
- Traffic signal synchronization
  - Local and linear congestion relief construction
  - Turning lanes
  - Improved signing and striping
  - Ramp metering
  - Flex-time
  - Encourage conversion from individual auto transit to mass transit
  - Other similar measures
- CIR 7** Service Level: Yolo County shall require a service level of "C" for all County roads (service Level "C" is "a stable flow of traffic and a relatively satisfactory operating speed.")
- CIR 8** Maintenance/Safety: Yolo County shall maintain and upgrade all road facilities to the established standards including capacity, curve, alignment, signing, traffic control, access control, and special safety features.
- CIR 11** Pedestrian Safety: Yolo County shall promote pedestrian safety by providing appropriate pedestrian controls and amenities and by requiring these things to be provided in private development projects, subject to County approvals.
- CIR 12** Pedestrians: Yolo County shall promote and ensure the provision of facilities and routes where appropriate for safe and convenient use by pedestrians including sidewalks, pedestrian access to all public facilities and transit stops, and to public areas in the community including waterfront projects and recreation hiking trails.
- CIR 14** Bikeways and Pedestrian Ways: Yolo County shall plan and promulgate adequate, safe bikeways and pedestrian ways, integrated with other transit modes and coordinated with all form of development.
- CIR 17** Residential Truck Routes: Yolo County shall discourage truck traffic on residential streets and shall apply traffic controls, speed limits, and load limits on residential street truck routes where assignment to truck traffic is unavoidable.
- CIR 18** Direct Access to Arterials and State Highways: Direct driveway access to County and State arterials and highways shall be discouraged. Such direct access shall be prohibited in new subdivisions of more than four parcels.

### Route Concept and Development Report for State Route 16

*The Route Concept and Development Report for State Route 16, California Department of Transportation, District 3, July, 1987, identifies level of service D as the concept level of service for State Route 16 through the study area.*

## IMPACTS AND MITIGATION MEASURES

The impact analysis identifies the impacts of the proposed project on the roadway system, the transit system, pedestrian and bikeway systems and school bus operations. The first part of this section describes the assumptions and methodology used in the analysis, while the second part identifies the standards for determining when an impact is considered significant. The third part documents the impact analysis results and identifies specific project impacts and mitigation measures.

### Assumptions and Methodology

This section begins with a discussion of the planned improvements for each travel mode. Next, the expected trip generation of the project, the no project and the alternatives under cumulative conditions are summarized, as are the cumulative haul route assumptions. The cumulative conditions analysis is conducted for 2027, the year corresponding with the end of the proposed 30-year permit period. The analysis results of each travel mode are presented for each alternative.

### Planned Improvements

According to the *Yolo County General Plan*, Yolo County, July, 1983 and the *Yolo County Congestion Management Program*, Yolo County, January, 1994, no major road improvements are planned in the study area. However, some improvements were included as conditions of approval for other developments under previous entitlements in the area. (See Figure 4.8-5). These include:

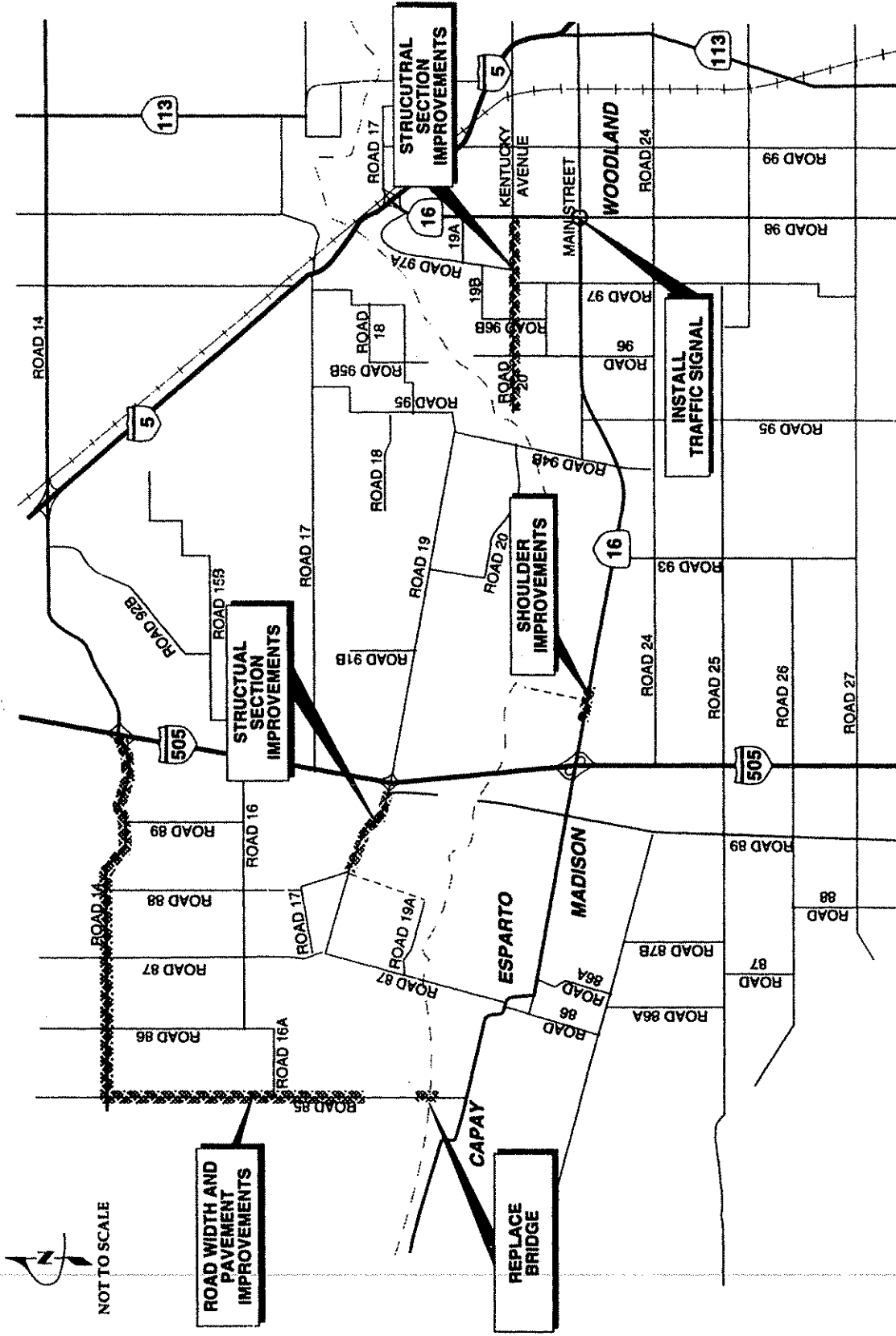
- Install asphalt to provide a paved eight-foot shoulder for a 300-foot segment of SR 16 adjacent to the Solano Concrete driveway to facilitate passing maneuvers<sup>13</sup>;
- Improve the structural section of Road 19 from the Teichert Esparto access road to I-505<sup>14</sup>;
- Widen and improve the pavement of Roads 85 and 14 to serve the Cache Creek Aggregates site<sup>15</sup>;

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<sup>13</sup> Improvement required of the Solano Concrete Company as a mitigation measure included in the *Certified Environmental Impact Report for the Short-Term Off-Channel Mining Permit Application*, Yolo County, July, 1995.

<sup>14</sup> Improvement required of the Teichert Aggregates as a mitigation measure included in the *Certified Environmental Impact Report for the Short-Term Mining and Reclamation Project for the Reiff Site*, Yolo County, August, 1995.

<sup>15</sup> Based on conversations with Ben Adamo of Cache Creek Aggregates, February 13, 1996.



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Figure 4.8-5 Planned Roadway Improvements

SOURCE: FEHR & PEERS ASSOCIATES, INC.

- Improve the structural section of Road 20 from the Teichert Woodland plant entrance to Road 98<sup>16</sup>;
- Install a traffic signal at the SR 16/Road 98 intersection in conjunction with the Wild Wing project<sup>17</sup>; and
- Improve site access intersections at the Wild Wing and Pheasant Glen developments<sup>18</sup>.

According to discussions with Yolo County Transit Authority staff, the Authority does not foresee increased Yolobus service within the study area given that modest growth is expected in the area. According to the *County of Yolo Bikeway Plan*, January 1993, a Class II (i.e., on-street) bike lane is planned in the future along County Road 24 from Woodland to I-505 and along State Route 16 west of I-505.

School bus operations are not expected to change substantially in the future. It is difficult to identify needed operational improvements since school bus routes are continually changing in response to the location of students. For this reason, improvements such as bus shelters or turnouts have not been proposed by school district officials.

#### Trip Generation for Projects Assumed Developed under the OCMP

The following lists the key assumptions associated with the trip generation of the proposed project under cumulative conditions. It should be noted that these assumptions are conservative to ensure that the potential impacts are not underestimated.

1. Each applicant seeking a long-term permit will operate at maximum production levels, thereby generating the maximum number of truck trips for an average day. Specific production sales assumptions include:
  - The Cache Creek Aggregates site, located north of SR 16 between Road 85 and Road 87, would increase from a currently permitted total of 748,650 tons per year to 1,000,000 tons per year;

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<sup>16</sup> Improvement required of the Teichert Aggregates as a mitigation measure included in the *Certified Environmental Impact Report for the Short-Term Mining and Reclamation Project for the Woodland Properties Site*, Yolo County, July, 1995.

<sup>17</sup> Per the *Public Improvement Plan for the Wild Wing Country Club, Mitigation Monitor and Reporting Program*, Yolo County, August 17, 1992.

<sup>18</sup> Per the *Public Improvement Plan for the Wild Wing Country Club, Mitigation Monitor and Reporting Program*, Yolo County, August 17, 1992 and the *Conditions of Approval for the Pheasant Glen Golf Course Project*, Yolo County, November 6, 1991.



- The Solano Concrete site, located on SR 16 east of I-505, would increase from a current maximum of 772,417 tons per year to 1,200,000 tons per year;
  - The Syar Industries site, located between Roads 87 and 89 north of SR 16, would increase its maximum production total of 960,871 tons per year to 1,952,000 tons per year;
  - The Teichert - Esparto Properties site, located south of Road 19 between Road 87 and I-505, would increase from the current permitted maximum level of 750,000 tons per year to 1,000,000 tons per year; and
  - The Teichert - Woodland Properties site, located at the western end of Road 20, would increase from the current permitted maximum level of 1,064,224 tons per year to 1,200,000 tons per year.
2. Schwarzgruber, an existing mining operation located along Road 96, would operate at current production levels through 2001, and at 158,650 tons per year from 2002 to 2032.
  3. No producer will process raw aggregate materials brought in from another location.
  4. The volume of recycled materials is assumed to be 4 percent of total production, with 2 percent resulting in new truck trips. Since this does not count against the producer's production totals, it is assumed that this will result in additional truck trips. The assumption of increased recycling under cumulative conditions reflects technological changes and the goal of the OCMP which encourages recycling.
  5. Trucks are assumed to carry 22 tons per load. An average work year is assumed to include 247 work days.

Table 4.8-8 displays the maximum requested long-term aggregate production levels for each of the projects assumed to be developed under the OCMP, as well as the number of annual truck loads and average daily truck loads potentially generated by each site. The project trip generation is computed by calculating the difference between the trips generated under maximum long-term production and the ten-year average of the trips currently being generated by the site. Table 4.8-9 shows the expected daily, morning peak hour, and afternoon (i.e., p.m.) peak hour project trip generation of each site.

As Table 4.8-8 shows that the six area producers, along with recycling activities, would generate a maximum of 1,230 truck loads per day, which corresponds to 2,460 truck trips per day. The data contained in Table 4.8-9 shows that the projects assumed to be developed with the OCMP would result in an increase of 1,704 total trips (including trucks and employees) per day over existing ten-year average levels.

**Table 4.8-8  
Maximum Proposed Long-Term Production Levels for Projects Assumed Developed under the OCMF**

Maximum Proposed Long-Term Aggregate Production Levels	Site								Total
	Woodland Properties	Esparto Properties	Syar Industries	Solano Concrete	Cache Creek Aggregates	Schwarzgruber			
Number of Employees	15	5	25	14	15	2			76
Total Production - 30 years (tons):	17,700,000	19,500,000	58,430,000	27,910,000	30,000,000	4,745,000			158,285,000
Maximum Annual Production (tons):									
Aggregates	1,200,000	1,000,000	1,952,000	1,200,000	1,000,000	158,650			6,510,650
Asphalt	1,000,000	1,000,000	1,464,000	1,100,000	1,000,000	158,650			5,722,650
	200,000	0	488,000	100,000	0	0			788,000
Estimated Annual Recycling Volume: <sup>1</sup>	24,000	20,000	39,040	24,000	20,000	3,170			130,210
Maximum Annual Truck Loads: <sup>2</sup>									
Aggregates	55,636	46,364	90,502	55,636	46,364	7,355			301,857
Asphalt	45,455	45,455	66,545	50,000	45,455	7,211			260,121
Recycling	9,090	0	22,182	4,545	0	0			35,817
Oil Delivery	1,091	909	1,775	1,091	909	144			5,919
Maximum Average Daily Truck Loads: <sup>3</sup>									
Aggregates	226	188	370	226	188	32			1,230
Asphalt	184	184	269	203	184	30			1,054
Recycling	37	0	90	18	0	0			145
Oil Delivery	4	4	7	4	4	1			24
	1	0	4	1	0	1			7

Notes: <sup>1</sup> Assumes 2 percent increase in annual production (worst-case) for hauling recycled materials.

<sup>2</sup> Assumes 22 tons per load for aggregate, asphalt, and recycling.

<sup>3</sup> Assumes 247 work days per year.

Source: Fehr & Peers Associates, 1996 based on production data provided by Yolo County.

**Table 4.8-9  
Trip Generation for Projects Assumed Developed with the OCMP**

Maximum Proposed Long-Term Production Versus Existing Production	Site						Total
	Woodland Properties	Esparto Properties	Syar Industries	Solano Concrete	Cache Creek Agg.	Schwarzgruber	
<b>Maximum Proposed Long-Term Production Levels</b>							
Average Daily Truck Trips: <sup>1</sup>	452	376	740	452	376	64	2,460
Morning (Afternoon) <sup>2</sup> Peak Hr Inbound Vehicle Trips	35 (23)	25 (19)	58 (39)	35 (23)	30 (19)	8 (4)	191 (127)
Truck	28 (23)	23 (19)	46 (39)	28 (23)	23 (19)	6 (4)	154 (127)
Auto	7 (0)	2 (0)	12 (0)	7 (0)	7 (0)	2 (0)	37 (0)
Morning (Afternoon) <sup>2</sup> Peak Hr Outbound Vehicle Trips	28 (30)	23 (21)	46 (51)	28 (30)	23 (26)	6 (6)	154 (164)
Truck	28 (23)	23 (19)	46 (39)	28 (23)	23 (19)	6 (4)	154 (127)
Auto	0 (7)	0 (2)	0 (12)	0 (7)	0 (7)	0 (2)	0 (37)
<b>Existing Ten-Year Average Production Levels</b>							
Average Daily Truck Trips:	350	0 <sup>3</sup>	132	257	0	17	756
Morning (Afternoon) <sup>2</sup> Peak Hr Inbound Vehicle Trips	24 (16)	0 (0)	18 (7)	14 (11)	0 (0)	4 (2)	60 (36)
Truck	17 (16)	0 (0)	6 (7)	7 (11)	0 (0)	2 (2)	32 (36)
Auto	7 (0)	0 (0)	12 (0)	7 (0)	0 (0)	2 (0)	28 (0)
Morning (Afternoon) <sup>2</sup> Peak Hr Outbound Vehicle Trips	21 (22)	0 (0)	10 (19)	19 (22)	0 (0)	2 (4)	52 (67)
Truck	21 (15)	0 (0)	10 (7)	19 (15)	0 (0)	2 (2)	52 (39)
Auto	0 (7)	0 (0)	0 (12)	0 (7)	0 (0)	0 (2)	0 (28)
<b>Difference in Production (Project Trip Generation)</b>							
Average Daily Truck Trips:	102	376	608	195	376	47	1,704
Morning (Afternoon) <sup>2</sup> Peak Hr Inbound Vehicle Trips	11 (7)	25 (19)	40 (32)	21 (12)	30 (19)	4 (2)	131 (91)
Truck	11 (7)	23 (19)	40 (32)	21 (12)	23 (19)	4 (2)	122 (91)
Auto	0 (0)	2 (0)	0 (0)	0 (0)	7 (0)	0 (0)	9 (0)
Morning (Afternoon) <sup>2</sup> Peak Hr Outbound Vehicle Trips	7 (8)	23 (21)	36 (32)	9 (8)	23 (26)	4 (2)	102 (97)
Truck	7 (8)	23 (19)	36 (32)	9 (8)	23 (19)	4 (2)	102 (88)
Auto	0 (0)	0 (2)	0 (0)	0 (0)	0 (7)	0 (0)	0 (9)

Notes: <sup>1</sup> Equivalent to twice the number of truck loads from Table 4.8-8 and includes hauling of recycled materials.  
<sup>2</sup> Values outside the parentheses indicate morning peak hour traffic, while values within the parentheses indicate afternoon peak hour traffic.  
<sup>3</sup> Existing production levels shown as zero because the County has determined that the plant will need to be re-permitted.

Source: Fehr & Peers Associates, 1996.

### Trip Generation for Cumulative Conditions without the Project

To conduct the cumulative conditions analysis without the project (i.e. cumulative no project), the following assumptions regarding background traffic, population growth, and the roadway network were utilized in the analysis. Similar to the trip generation assumptions, the land use assumptions are conservative so as to ensure project impacts are not underestimated.

1. A "dummy variable" of 200 acres was assumed as a part of the cumulative condition. Of the 200 acres, 150 acres is assumed to be located along Cache Creek west of I-505, while 50 acres is assumed to be located east of I-505.
2. A total of 200,000 tons per year will be removed from the creek for maintenance purposes. For the purposes of this analysis, it was assumed that this gravel would be processed at the plants in the area and that 60 percent of the total would be useable gravel. Each of the 6 plants was assumed to produce 20,000 tons per year.
3. Granite, an existing mining operation in the study area, was assumed to have mined all resources by 1997 and therefore not be in operation thereafter.
4. The Wild Wing (337 single family dwelling units) and Pheasant Glen (18-hole golf course) planned developments are assumed in place by 2027.
5. Cumulative background traffic levels were computed by applying growth rates to existing background daily traffic volumes and intersection turning movements. Caltrans' count data revealed that the expected annual growth rate of traffic on SR 16 east and west of Road 89 is 1.5 and 2.0 percent, respectively. A 1.5 percent annual growth rate was conservatively assumed for all County roads, which is consistent with the annual growth rate of 1.6 percent projected by the Yolo County Community Development Agency<sup>19</sup> for entire unincorporated Yolo County.
6. Growth in the Woodland area is assumed to occur consistent with the *City of Woodland Draft General Plan and Draft EIR*, City of Woodland, October 16, 1995. This corresponds to a population growth rate of 2.0 percent per year.

The cumulative conditions analysis without the project encompasses the scenario that the following future activities would take place:

- All background traffic would be in place as described above including the County maintenance mining, the 200-acre "dummy variable" mining, Pheasant Glen, Wild Wing, and the 1.5-2.0 percent annual increase to account for other traffic;

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<sup>19</sup> Per 2/9/96 telephone conversation with David Morrison, Resource Management Coordinator for the Yolo County Community Development Agency based on data provided by SACOG.

- Each of the five applicants would generate traffic at currently-permitted maximum levels, except the Cache Creek Aggregates and Teichert Esparto Properties plants because their current permits would expire before 2027<sup>20</sup>; and
- Schwarzgruber would continue mining at a total of 114,000 tons per year.

It should be noted that there is a difference in the definitions of the project trip generation and the cumulative no project traffic levels as described below.

Project Trip Generation	=	Proposed Maximum Production Levels	-	Existing Ten-Year Average Production Levels
Cumulative No Project Traffic	=	Proposed Maximum Production Levels	-	Existing Permitted Production Levels

This distinction is important because the existing permitted production levels are higher than the existing ten-year average production levels.

#### Trip Generation for Project Alternatives

Eight project alternatives have been identified for evaluation in this document. Table 4.8-10 summarizes the total trip generation for each project alternative, which is followed by a brief discussion of the general traffic and circulation aspects of each alternative based on the production totals for each producer listed in the project description.

#### *Alternative 1a: No Project (Existing Conditions)*

Under this alternative, aggregate production would continue at the existing ten-year average levels. As this alternative represents existing conditions, no new traffic would be generated and no new traffic impacts would result. In fact, this alternative results in a net reduction of 733 trips per day in comparison to the cumulative condition without the project. Existing deficiencies would continue to deteriorate, but at a slower rate than under other alternatives involving increased levels of production. Since Cache Creek Aggregates would not be operational, impacts to Roads 85 and 14 would be eliminated under this alternative.

#### *Alternative 1b: No Project (Existing Permits and Regulatory Condition)*

This alternative essentially represents the cumulative no project alternative because production is assumed to occur at maximum permitted levels under existing permits. Volumes would increase over current levels, but no increase would occur beyond the

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<sup>20</sup> Teichert Aggregates does not concur with Yolo County's interpretation of the expiration of the existing permit.

cumulative no project condition. The routing of these trips is assumed to be identical to the routing of the proposed project traffic discussed above. Existing deficiencies would continue to deteriorate, but at a slower rate than under other alternatives involving increased levels of production.

<b>Table 4.8-10 Comparison of Trip Generation by Alternative</b>			
Alternative	Average Daily Traffic - Cumulative Conditions		
	Existing Permitted Maximum Levels <sup>1</sup>	Proposed Levels Under Each Alternative <sup>2</sup>	Change Compared to Existing Maximum
OCMP	1,581	2,460	879
Alt 1a - Actual 1995 Levels	1,581	848	-733
Alt 1b - 1995 Permitted Levels	1,581	1,581	0
Alt 2 - No Mining	1,581	90	-1,491
Alt 3 - Plant Operations Only	1,581	1,315	-266
Alt 4 - Shallow Mining	1,581	342	-1,239
Alt 5a- Decreased Mining	1,581	745	-836
Alt 5b - Shorter Mining Period	1,581	2,806	1,225
Alt 6 - Ag Reclamation	1,581	2,460	879
Notes: <sup>1</sup> Based on existing maximum permitted total of 4,296,162 tons per year. <sup>2</sup> Based on total tonnage identified for each alternative, plus estimates for changes in auto traffic due to changes in employment.			
Source: Fehr & Peers Associates, 1996.			

*Alternative 2: No Mining (Alternative Site)*

Under this alternative, existing permits to mine and operate plants would be voided for all producers. To meet market demand, mining would occur in the Marysville/Yuba City and Sacramento regions and the aggregate necessary for construction would be imported into the study area. The total market demand in future years is expected to be approximately 2.2 million tons per year.

The only study area roadways expected to be impacted by truck deliveries destined outside the area are Interstates 5 and 505; however, County roads would not be impacted unless they served a project-specific construction location. Assuming construction within the study area represents 10 percent of the market demand (i.e., 220,000 tons per year), an

average of 82 truck trips would access area roadways per day. This represents a net reduction of approximately 1,491 truck trips per day in comparison to levels under the cumulative no project condition. State Route 16 would likely be the most heavily travelled roadway for these local deliveries, and minimal traffic would be expected on most County roads.

#### *Alternative 3: Plant Operation Only (Importation)*

Under this alternative, existing permits to mine would be voided for all producers. However, existing plant sites would be permitted to process raw materials pursuant to existing approvals. Thus, trucks would enter a site with raw materials and exit the site with processed materials.

While it is difficult to accurately estimate the trip generation of this alternative, it can be assumed that the producers would attempt to minimize unloaded truck operations. In other words, the producers would attempt to utilize the same truck that brings in raw materials to deliver processed materials. With a total production tonnage slightly higher than the existing permitted levels, Alternative 3 would cause a net reduction of 266 trips per day above cumulative no project levels. The reduction is primarily caused by the assumptions that the Teichert Esparto plant will not be operational after 1998. The pavement impacts would be substantially greater on area roadways because of the increased traffic and because all trucks would be loaded in both directions. Impacts to Roads 85 and 14 would be eliminated under this alternative, since Cache Creek Aggregates would not be operational.

#### *Alternative 4: Shallow Mining (Alternative Method/Reclamation)*

Under this alternative, the OCMP would limit all new mining to depths no greater than 10 feet above the historic average high groundwater elevation. Resulting gravel extraction is assumed to be approximately 1,081,276 tons per year, which would cause a net reduction of about 1,239 trips per day in comparison to cumulative no project levels. The routing of these trips is assumed to be identical to the routing of the proposed project traffic. It should be noted that while Alternative 4 would result in a total net reduction trips, increases would occur on some individual roadways because it assumes production from Cache Creek Aggregates, which is not included in the existing totals. This situation would only occur along Roads 85 and 14, the proposed haul routes for Cache Creek Aggregates.

#### *Alternative 5a : Decreased Mining (Restricted Allocation)*

Under this alternative, the OCMP would limit gravel extraction to no more than 2,148,082 tons annually. This corresponds to a net reduction in trip generation of 836 trips per day in comparison to cumulative no project levels. It should be noted that while Alternative 5a would result in a total net decrease in trips, increases would be greater on some individual roadways because it assumes production from Cache Creek Aggregates, which is not

included in the existing totals. This situation would only occur along Roads 85 and 14, the proposed haul route for Cache Creek Aggregates.

*Alternative 5b: Decreased Mining (Shorter Mining Period)*

Under this alternative, the OCMP would limit the period of gravel extraction for an individual permit to 15 years, with a potential 10-year renewal based on performance. Allocations would be granted as requested. This alternative would result in the generation of 1,225 new trips per day above levels assumed for the cumulative no project condition. The cumulative impacts would occur up to the year 2011, and potentially up to 2021. However, impacts would be eliminated in 2027 because no mining would be occurring at that time, whereas project impacts would continue through 2047 as a result of rezoned properties.

*Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)*

Under this alternative, the OCMP would not allow for alternative forms of reclamation. A minimum performance standard of 80 percent agricultural reclamation would be established. Allocations are assumed to be as requested (i.e., identical to the OCMP). This alternative would result in the generation of 879 new trips per day in comparison to cumulative no project conditions.

Proposed Haul Routes

The proposed haul routes for each of the five applications that would potentially "define" the OCMP were obtained from each applicant. Since most of the truck traffic is destined to/from locations outside the study area, a majority would utilize SR 16 to access I-505 or I-5. A limited number of trips would also be destined for the City of Woodland and the City of Davis. Figure 4.8-6 shows the study area roadways proposed to be used as haul routes. A detailed summary of the haul routes and trip distribution assumptions for each producer is included in the separately bound technical appendix entitled *Technical Appendix to the Long-Term Mining and Reclamation Permit Application Projects along Cache Creek in Yolo County*, Fehr & Peers Associates, February, 1996.<sup>21</sup>

Analysis of Cumulative Conditions without the Project

Figure 4.8-7 displays the cumulative daily traffic projections and levels of service for the study roadways under the no project scenario. As this shows, all facilities would continue to operate at acceptable levels of service. All segments of State Route 16 east of Esparto would degrade to LOS D, while most County road segments would continue to operate at LOS A or B.

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<sup>21</sup> It should be noted that the Cache Creek Aggregates site is currently considering three haul route alternatives. For the purposes of this analysis, the currently permitted route accessing Road 85 to Road 14 and I-505 was assumed.



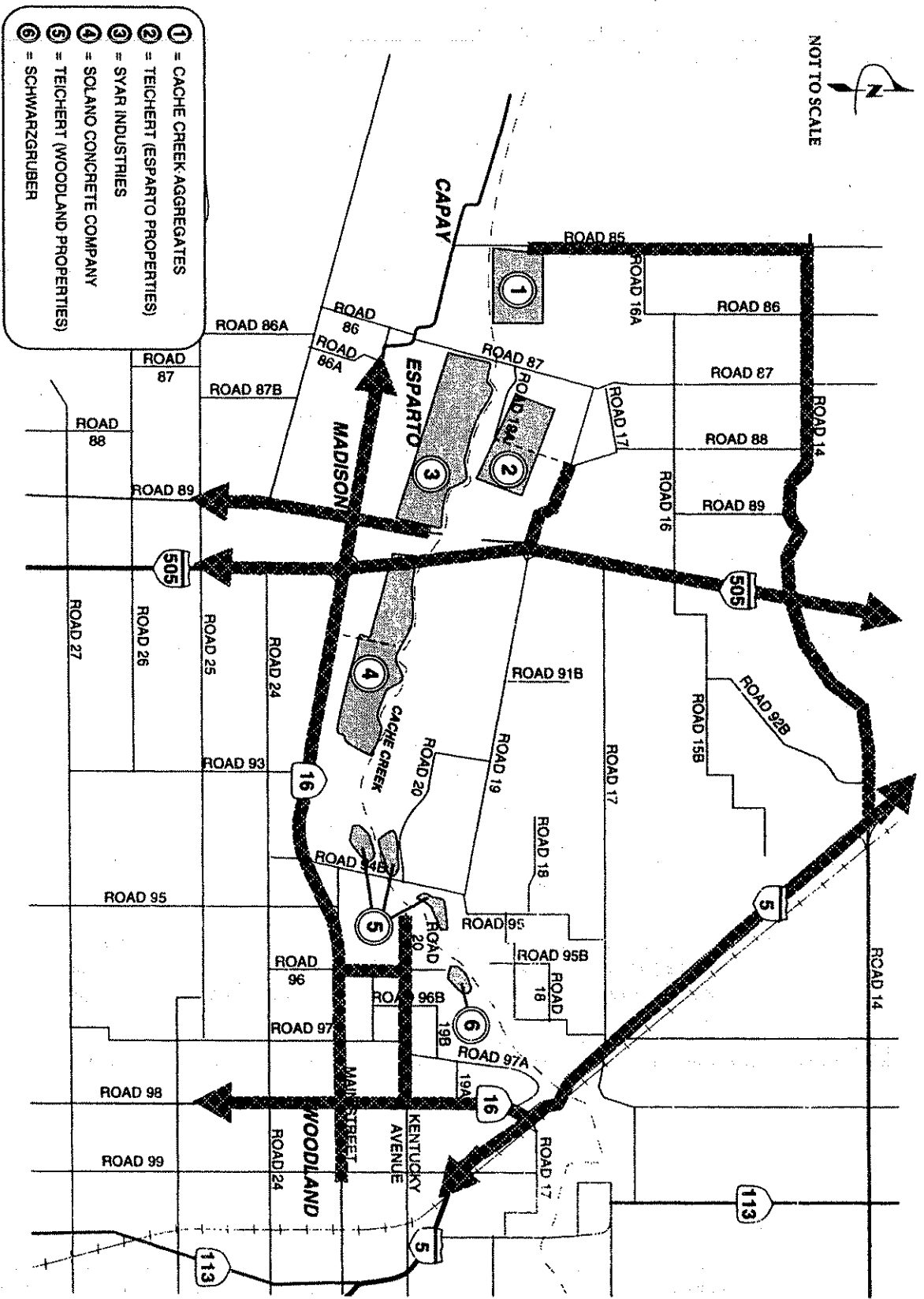
The no project scenario contributes to the exacerbation of existing deficiencies, as well as the accelerated deterioration of pavement. The specific locations and the degree to which facilities are impacted is discussed in detail in the following section of this report.

Each of the study intersections was analyzed under the cumulative no project condition to determine the morning and afternoon peak hour level of service. Table 4.8-11 summarizes the results of the analysis.<sup>22</sup> As this shows, the intersections of Road 89 and Road 98 with State Route 16 were found to operate unacceptably in 2027. A review of the peak hour traffic signal warrant criteria listed in the *Traffic Manual*, California Department of Transportation, 1991, reveals that a traffic signal would be warranted at both intersections.

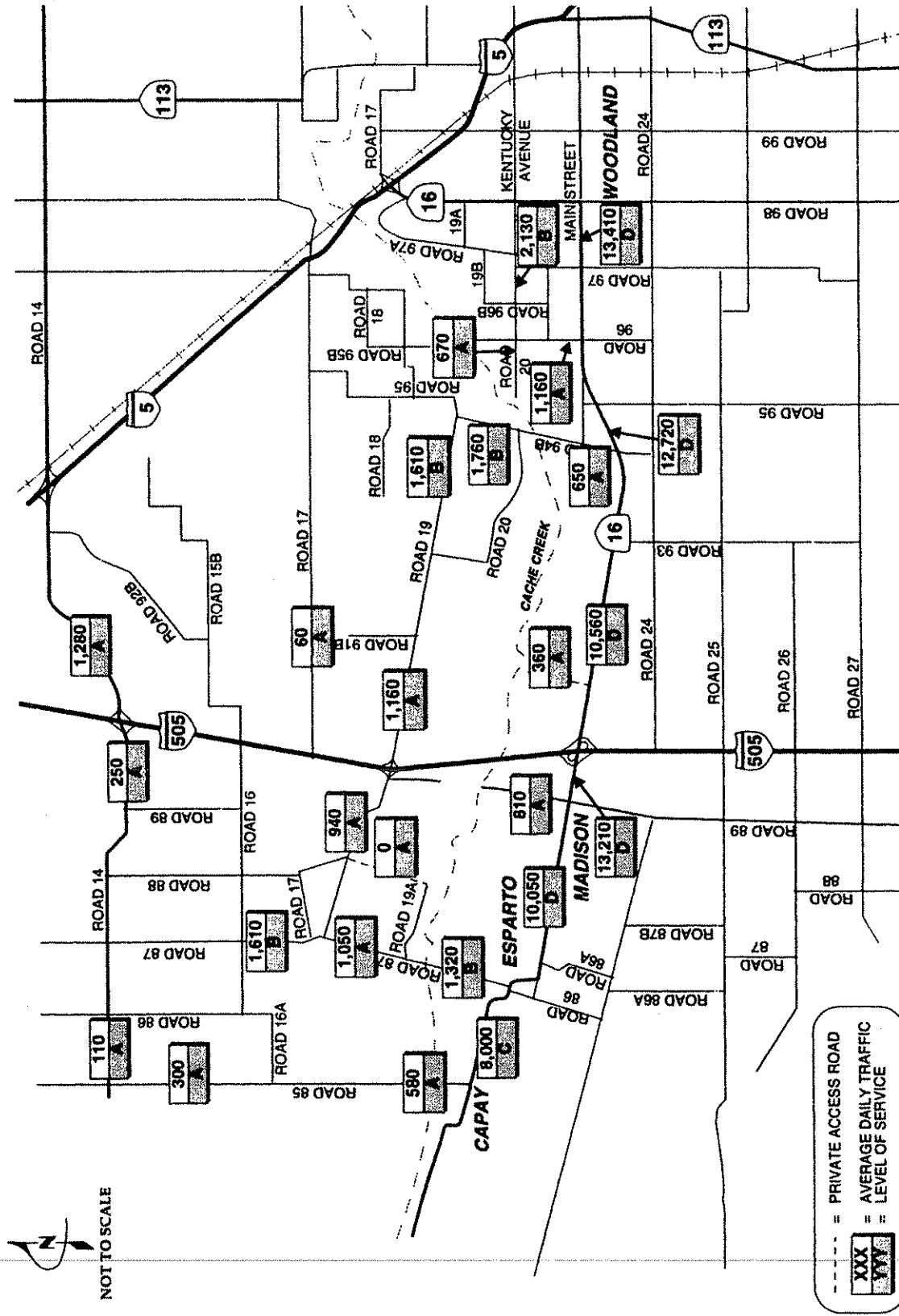
Table 4.8-11 Cumulative No Project Conditions - Intersection Levels of Service		
Intersection	AM Peak Hour LOS	PM Peak Hour LOS
Road 20 / Road 96	LOS C or better	LOS C or better
Road 20 / Road 98	B	A
SR 16 / Road 96	A	A
SR 16 / Road 98	Worse than LOS C	Worse than LOS C
SR 16 / I-505 Northbound Ramps	A	A
SR 16 / I-505 Southbound Ramps	A	A
SR 16 / Road 89	Worse than LOS C	Worse than LOS C
Road 19 / I-505 Northbound Ramps	A	A
Road 19 / I-505 Southbound Ramps	A	A
Road 19 / Road 87	A	A
Road 14 / I-505 Northbound Ramps	A	A
Road 14 / I-505 Southbound Ramps	A	A
Road 14 / Road 85	A	A
Notes:	Results are presented as LOS A, B, C, D, E or F for side-street stop-controlled intersections. Results are presented as either "LOS C or better" or "Worse than LOS C" for all-way stop-controlled intersections. Please refer to methodology discussion on page 4.8-9 of this section.	
Source:	Fehr & Peers Associates, 1995.	

<sup>22</sup> The traffic volumes and calculation sheets are included in the separately bound technical appendix entitled *Technical Appendix to the Long-Term Mining and Reclamation Permit Application Projects along Cache Creek in Yolo County*, Fehr & Peers Associates, February, 1996.

**Figure 4.8-6 Proposed Haul Routes**



SOURCE: FEHR & PEERS ASSOCIATES, INC.



NOT TO SCALE

--- = PRIVATE ACCESS ROAD  
 XXX = AVERAGE DAILY TRAFFIC  
 YYY = LEVEL OF SERVICE

NOTE: VOLUMES BASED ON CACHE CREEK AGGREGATES TRUCK ROUTING VIA ROAD 85 AND ROAD 14.

Figure 4.8-7 Cumulative No Project Roadway Segment Volumes and Levels of Service

SOURCE: FEHR & PEERS ASSOCIATES, INC.

None of the aspects of the cumulative no project condition would result in a disruption or interference with any existing or planned bicycle, pedestrian or transit facilities. Similarly, school bus operations would not be disrupted as a direct result of the increased traffic projected under the no project condition.

#### Analysis of Cumulative Conditions with the Project Alternatives

Cumulative conditions analyses were also conducted for each project alternative. The proposed project was analyzed first to determine which roadways and intersections were deemed potentially critical for any other alternative.

#### *OCMP (Proposed Project)*

The proposed project includes the traffic generated by the requested increase in maximum production levels from each of the five producers, and the increase in mining by Schwarzgruber from current levels to 158,650 tons per year.

Figure 4.8-8 shows cumulative daily traffic projections and levels of service for the study roadways under the cumulative scenario with the proposed project. Similar to the no project condition, all County roads would operate at LOS A or B, while the operations of SR 16 would operate at LOS D in most locations. All facilities would operate above the identified LOS standard of significance identified above. No changes in LOS would result from the addition of the project traffic.

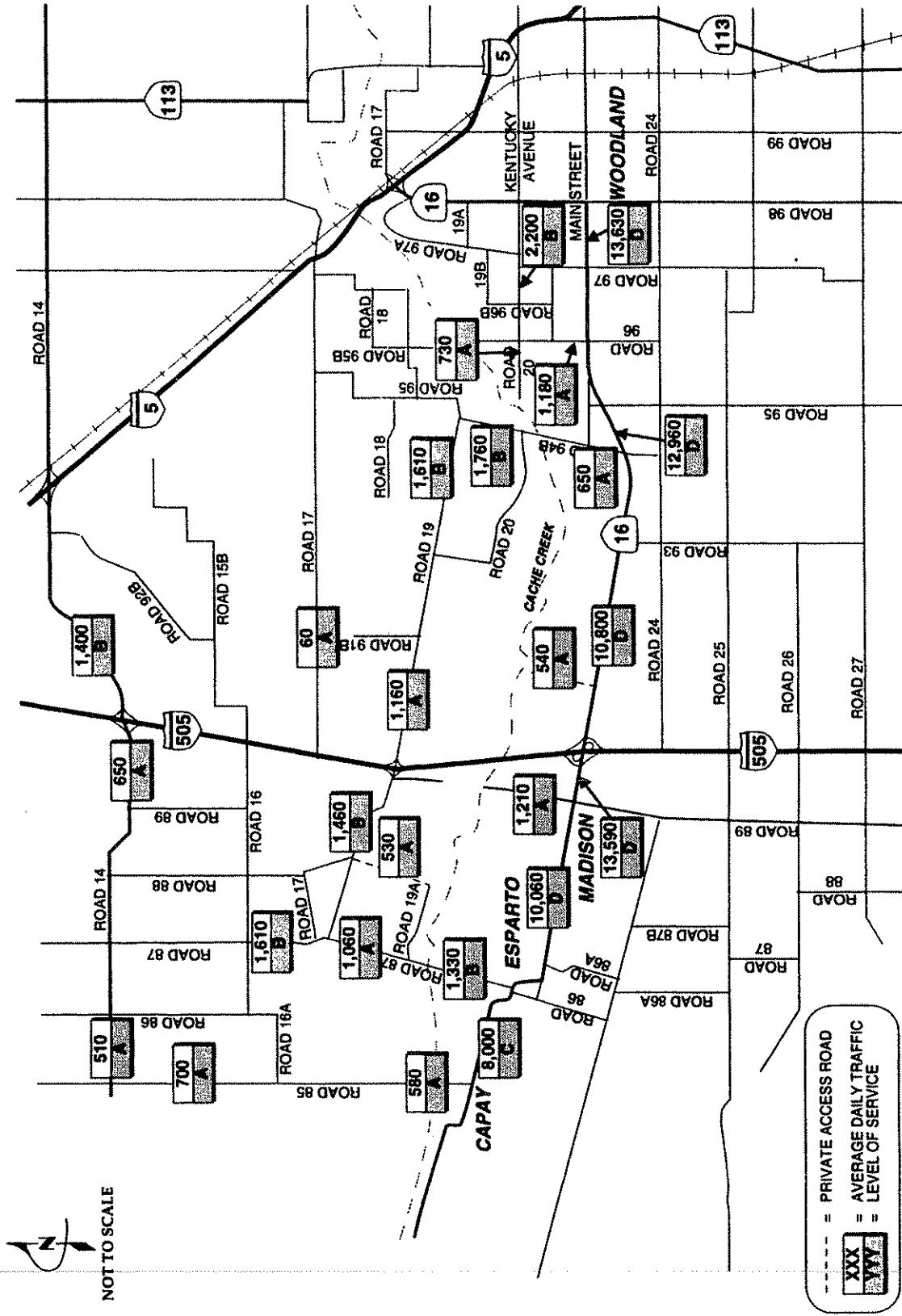
The proposed project contributes to the exacerbation of existing deficiencies, as well as the accelerated deterioration of pavement at a rate greater than the no project condition. The specific locations and the degree to which facilities are impacted is discussed in detail in the following section of this report.

The peak hour intersection operations were also analyzed under cumulative conditions with the project. The resulting morning and afternoon peak hour levels of service are shown in Table 4.8-12.<sup>23</sup> The results are identical to the results of the no project analysis. The intersections of Road 89 and Road 98 with State Route 16 would operate unacceptably and meet warrants for installation of a traffic signal.

Similar to the no project condition, the increased traffic that would result from the project would not disrupt or interfere with any existing or planned bicycle, pedestrian, or transit facilities, school bus operations.

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<sup>23</sup> The traffic volumes and calculation sheets are included in the separately bound technical appendix entitled *Technical Appendix to the Long-Term Mining and Reclamation Permit Application Projects along Cache Creek in Yolo County*, Fehr & Peers Associates, February, 1996.



**Figure 4.8-8 Cumulative Plus Project Roadway Segment Volumes and Levels of Service**

SOURCE: FEHR & PEERS ASSOCIATES, INC.

Table 4.8-12 Cumulative Conditions with Project - Intersection Levels of Service		
Intersection	AM Peak Hour LOS	PM Peak Hour LOS
Road 20 / Road 96	LOS C or better	LOS C or better
Road 20 / Road 98	B	A
SR 16 / Road 96	A	A
SR 16 / Road 98	Worse than LOS C	Worse than LOS C
SR 16 / I-505 Northbound Ramps	A	A
SR 16 / I-505 Southbound Ramps	A	A
SR 16 / Road 89	Worse than LOS C	Worse than LOS C
Road 19 / I-505 Northbound Ramps	A	A
Road 19 / I-505 Southbound Ramps	A	A
Road 19 / Road 87	A	A
Road 14 / I-505 Northbound Ramps	A	A
Road 14 / I-505 Southbound Ramps	A	A
Road 14 / Road 85	A	A
Notes:	Results are presented as LOS A, B, C, D, E or F for side-street stop-controlled intersections. Results are presented as either "LOS C or better" or "Worse than LOS C" for all-way stop-controlled intersections.	
Source:	Fehr & Peers Associates, 1995.	

### Other Project Alternatives

As shown in Figures 4.8-7 and 4.8-8, the only roadway that approaches its threshold for acceptability is SR 16, where LOS D operations are projected with or without the project. Given that the proposed project would not cause any of the County roads to approach their operational threshold, the analysis of the remaining alternatives focuses on SR 16. Table 4.8-13 shows the resulting average daily volumes and LOS for each study segment of SR 16 under each alternative. As this shows, the project alternatives would cause only slight variations in traffic on this facility, with no changes in LOS.

In terms of the intersection operations, only two locations would present operational problems under cumulative conditions, either with or without the project. The intersections of SR 16 with Roads 98 and 89 would operate "worse than LOS C" and would meet the peak hour volume warrants for a traffic signal. Therefore, the analysis of the other alternatives focused on these two locations. Table 4.8-14 shows the morning and afternoon peak hour operations at both intersections under each alternative. As shown, no changes in operating conditions would occur as a result of any of the alternative. Furthermore, the peak hour traffic signal warrant criteria would be met under all alternatives.

**Table 4.8-13  
Average Daily Traffic and Level of Service on SR 16 for Project Alternatives**

Alternative	Segment of SR 16					
	West of Road 87	Road 86A to Road 89	Road 89 to I-505	Solano Plant to Road 94B	Road 94B to Road 96	Road 96 to Road 98
Existing	4,100 - B	5,800 - C	7,400 - C	5,850 - C	6,200 - C	6,650 - C
Cumulative No Project	8,000 - C	10,050 - D	13,210 - D	10,560 - D	12,720 - D	13,410 - D
OCMP	8,000 - C	10,060 - D	13,590 - D	10,800 - D	12,960 - D	13,630 - D
1a	8,000 - C	10,050 - D	13,080 - D	10,510 - D	12,670 - D	13,370 - D
1b	8,000 - C	10,050 - D	13,210 - D	10,620 - D	12,780 - D	13,470 - D
2	8,000 - C	10,060 - D	12,860 - D	10,410 - D	12,580 - D	13,270 - D
3	8,000 - C	10,050 - D	13,300 - D	10,690 - D	12,850 - D	13,500 - D
4	8,000 - C	10,040 - D	12,850 - D	10,360 - D	12,520 - D	13,270 - D
5a	8,000 - C	10,050 - D	13,030 - D	10,460 - D	12,620 - D	13,350 - D
5b	8,000 - C	10,060 - D	13,670 - D	10,870 - D	13,030 - D	13,680 - D
6	8,000 - C	10,060 - D	13,590 - D	10,800 - D	12,960 - D	13,630 - D

Source: Fehr & Peers Associates, 1996.

**Table 4.8-14  
Cumulative Levels of Service at SR 16 Intersections with Roads 89 and 98**

Alternative	SR 16 / Road 98 Intersection		SR 16 / Road 89 Intersection	
	AM Peak Hour LOS	PM Peak Hour LOS	AM Peak Hour LOS	PM Peak Hour LOS
Existing	LOS C or better	LOS C or better	LOS C or better	LOS C or better
Cumulative Background	Worse than LOS C	Worse than LOS C	Worse than LOS C	Worse than LOS C
OCMP	Worse than LOS C	Worse than LOS C	Worse than LOS C	Worse than LOS C
1a	Worse than LOS C	Worse than LOS C	Worse than LOS C	Worse than LOS C
1b	Worse than LOS C	Worse than LOS C	Worse than LOS C	Worse than LOS C
2	Worse than LOS C	Worse than LOS C	Worse than LOS C	Worse than LOS C
3	Worse than LOS C	Worse than LOS C	Worse than LOS C	Worse than LOS C
4	Worse than LOS C	Worse than LOS C	Worse than LOS C	Worse than LOS C
5a	Worse than LOS C	Worse than LOS C	Worse than LOS C	Worse than LOS C
5b	Worse than LOS C	Worse than LOS C	Worse than LOS C	Worse than LOS C
6	Worse than LOS C	Worse than LOS C	Worse than LOS C	Worse than LOS C

Source: Fehr & Peers Associates, 1996.

Although each of the project alternatives would result in varying levels of traffic on the study area roadways, none would disrupt or interfere with any existing or planned bicycle, pedestrian, transit facilities or school bus operations.

### **Standards of Significance**

The project would have a significant effect on traffic and circulation if it would:

- Change the level of service of a County roadway segment or intersection from acceptable levels (i.e., LOS A, B, or C) to unacceptable levels (i.e., LOS D, E, or F) as specified by Circulation Policy CIR-7 of the Yolo County General Plan, July, 1993.
- Change the level of service on a State highway from acceptable levels (i.e., LOS A, B, C, or D) to unacceptable levels (i.e., LOS E or F) as specified by the *Route Concept and Development Report for State Route 16*, Caltrans District 3, July, 1987.
- Exacerbate conditions on a roadway or an intersection that currently operates at an unacceptable level of service.
- Add substantial (e.g., 10 or more per day) vehicle trips to a roadway facility that does not currently meet the standards identified below:
  - Non-standard road design according to County and State design standards;
  - Bridges less than 20 feet in width or those identified by the Federal or State government as being in need of structural repair;
  - Locations in which four or more reported accidents have occurred in a 12-month period during the past three years;
  - Pavement that has deteriorated to the degree that it may affect public health and safety; and
  - Intersections in which limited curve radii cause a truck to access an on-coming lane while making a turning movement.
  - Add substantial (e.g., 50 or more per day) loaded truck trips to a County-maintained roadway in which the pavement will deteriorate and require repair during the life of the permit.
- Disrupt or interfere with existing or planned transit operations and facilities of the Yolo County Transit Authority.



- Create hazards for pedestrians or bicyclists.
- Disrupt or interfere with existing or planned bicycle facilities as identified in the *County of Yolo Bikeway Plan, January 1993*.
- Disrupt or interfere with existing or planned school bus operations of the Woodland Joint Unified and Esparto Unified School Districts.

### **Impact Analysis**

The results of the impact analysis were evaluated for each alternative based on the standards of significance listed above. Impacts for the cumulative no project are discussed under Alternative 1b. Each impact is identified, followed by an analysis of impacts under the OCMP and each of the alternatives. Finally, mitigation measures are proposed for each impact along with an assessment of the significance of the impact with the mitigation in place.

For the applicable impact, the discussion describes the amount of traffic each alternative contributes to each impacted facility beyond the cumulative no project condition. Table 4.8-15 summarizes this information for each of the impacts.

#### **Impact 4.8-1 Potential Increase in Trips Associated with Recycling**

##### Draft OCMP and Implementing Ordinances

Action 2.4-10 of the OCMP encourages recycling and results in new truck traffic as described below.

Action 2.4-10 Reduce the amount of sand and gravel mined, by not including any waste concrete and asphalt processed as recycled materials for use in construction, as part of an operation's maximum annual production total.

Based on the assumption that 2 percent of the total production would be recycled, 46 new daily truck trips could be added to the street system above the cumulative no project levels. However, this impact is not considered significant because it would not exceed any thresholds listed in the standards of significance. No mitigation would be required.

##### Alternative 1a: No Project (Existing Conditions)

This alternative would add no new trips to the study area roadways because no increased level of recycling would occur. This would be a less-than-significant impact.

**Table 4.8-15  
Average Daily Traffic Volume by Impact for each Alternative**

Impact	Description	Existing Volume	Cumulative No Project Volume <sup>1</sup>	Incremental Change in Average Daily Traffic ( from Cumulative No Project)								
				OCMP <sup>2</sup>	Alt. 1a	Alt. 1b	Alt. 2	Alt. 3	Alt. 4	Alt. 5a	Alt. 5b	Alt. 6
4.8-1	Increased Trips Due to Recycling	n.a.	n.a.	46	-14	0	-32	0	12	23	23	46
4.8-2	Increase in Vehicle Trips	n.a.	n.a.	879	-733	0	-1,491	-266	-1,239	-836	1,225	879
4.8-3	SR 16 / Rd 98 intersection - LOS <sup>3</sup>	14,000	24,340	200	-100	0	-200	30	-180	-120	210	200
4.8-4	SR 16 / Rd 89 intersection - LOS <sup>3</sup>	6,320	12,040	400	-130	0	-370	100	-370	-190	480	400
4.8-5	Road 19, west of I-505 - alignment	715	940	520	-130	0	0	0	92	141	510	520
4.8-6	SR 16, east of I-505 - alignment	5,850	10,560	240	-150	0	-310	40	-330	-320	350	240
4.8-7	Road 14, west of I-505 - alignment	150	250	400	-310	0	0	0	179	141	404	400
4.8-8	Road 14, west of I-505 - pavement	150	250	400	-310	0	0	0	179	141	404	400
4.8-9	Road 89, north of SR 16 - bridges	340	810	400	-130	0	-370	100	-370	-190	480	400
4.8-10	Road 19, west of I-505 - bridge	715	940	520	-130	0	0	0	92	141	510	520
4.8-11	Road 85, north of Road 16A - bridge	190	300	400	-310	0	0	0	179	141	404	400
4.8-12	Road 14, west of I-505 - bridge	150	250	400	-310	0	0	0	179	141	404	400
4.8-13	Rd 85 / Rd 14 intersection - radif <sup>3</sup>	100	240	400	-310	0	0	0	179	141	404	400
4.8-14	SR 16 / Rd 89 intersection - radif <sup>3</sup>	6,320	12,040	400	-130	0	-370	100	-370	-190	480	400
4.8-15	Rd 20 / Rd 96 intersection - radif <sup>3</sup>	910	1,860	90	-60	0	-410	170	-300	-220	190	90
4.8-16	Accelerated pavement deterioration	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Notes: <sup>1</sup> Cumulative no project volume includes background traffic plus each producer operating at existing maximum permitted levels.

<sup>2</sup> OCMP includes increased trip generation proposed by the five producers, Schwarzgruber at 158,650 tons/year, and recycling.

<sup>3</sup> Based on daily approach volumes at each leg of the intersection.

n.a. = not applicable - impact applies to multiple facilities

Source: Fehr & Peers Associates, 1996.

#### Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Since no increase in recycling would occur under this alternative, no new trips caused by recycling activities would be added to the study area. In fact, a net reduction of 14 daily trips would occur because of the reduced production levels. This would be a less-than-significant impact.

#### Alternative 2: No Mining (Alternative Site)

Since no increase in recycling would occur under this alternative, no new trips caused by recycling activities would be added to the study area. A net reduction of 32 daily trips would occur because of the reduced production levels. This would be a less-than-significant impact.

#### Alternative 3: Plant Operation Only (Importation)

Since no increase in recycling would occur under this alternative, no new trips caused by recycling activities would be added to the study area. This would be a less-than-significant impact.

#### Alternative 4: Shallow Mining (Alternative Method/Reclamation)

Assuming each producer would recycle 2 percent of their processed totals, a total of 12 new truck trips would be generated under Alternative 4 in comparison to the no project condition. This impact is not considered significant because it would not exceed any thresholds listed in the standards of significance.

#### Alternative 5a : Decreased Mining (Restricted Allocation)

Assuming each producer would recycle 2 percent of their processed totals, a total of 23 new truck trips would be generated under Alternative 5a in comparison to the no project condition. This impact is not considered significant because it would not exceed any thresholds listed in the standards of significance.

#### Alternative 5b: Decreased Mining (Shorter Mining Period)

Assuming each producer would recycle 2 percent of their processed totals, Alternative 5b would result in the generation of 23 new truck trips in comparison to the no project condition. The impact would occur through the year 2011, and potentially through 2021 with the 10-year extension. This impact is not considered significant because it would not exceed any thresholds listed in the standards of significance.

## Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Assuming each producer would recycle 2 percent of their processed totals, a total of 46 new truck trips would be generated under Alternative 6 in comparison to the no project condition. This impact is not considered significant because it would not exceed any thresholds listed in the standards of significance.

*Mitigation Measure 4.8-1a (OCMP, A-1a, A-1b, A-2, A-3, A-4, A-5a, A-5b, A-6)*

*None required.*

### **Impact 4.8-2 Potential for Increase in Vehicle Trips**

#### Draft OCMP and Implementing Ordinances

Implementation of the proposed project will substantially increase traffic on roadways within the study area. Table 4.8-10 indicates that implementation of the project will generate an additional 879 trips per day in comparison to the no project condition. This is considered to be a significant impact. The increases in traffic would contribute to the exacerbation of existing deficiencies in the roadway system, as well as the acceleration of pavement deterioration on a cumulative basis. The following performance standards of the OCMP apply to this impact.

- 2.5-1 The first one-hundred (100) feet of access road intersection a County-maintained road shall be surfaced in a manner approved by the Public Works Department, with an approach constructed to County standards. Traffic control and warning signs shall be installed as required by the Public Works Department.
- 2.5-5 As a condition of approval, the operator shall be required to construct all County roads along a designated haul route to an engineered standard as established by the Public Works Department, from the access point of the surface mining operation to an appropriate State Highway. Construction of the required improvements shall be completed prior to commencement of the mining operation. As an alternative, the operator may provide security in a form authorized by County Counsel equal to the estimated cost of road construction improvements, in which case improvements shall be completed within one (1) year.
- If a subsequent mining operation utilizes a road previously required to be improved pursuant to this subsection, then the subsequent operator shall make a payment to the County based on an equitable portion of the relative impact of the proposed project. The amount paid to the County shall be reimbursed to the operator who made the previous road payment.
- 2.5-9 Those portions of designated truck haul routes that include County-maintained roads shall be posted as such, in accordance with the Public Works Department, to facilitate law enforcement and public safety. Private truck haul routes shall be used where possible, in order to reduce impacts to public roads.
- 2.5-13 All operations shall provide sufficient off-street parking to accommodate customers, employees, and all mining equipment.

While these policies generally relate the project impacts to some roadway improvements, the performance standards lack specific mitigation to address all impacted facilities in a programmatic fashion and to ensure an approach is identified to facilitate the completion of the necessary improvements. This would be a significant impact. Specific locations that would be impacted and their required mitigation improvements are identified in more detail in the subsequent impact statements.

Alternative 1a: No Project (Existing Conditions)

The impact would not occur under Alternative 1a because the alternative would result in a net decrease of approximately 733 trips per day in comparison to the cumulative no project condition.

Alternative 1b: No Project (Existing Permits and Regulatory Condition)

The impact would not occur under Alternative 1b because the alternative would not result in any additional traffic on the street system in comparison to the cumulative no project condition.

Alternative 2: No Mining (Alternative Site)

The impact would not occur under Alternative 2 because the alternative would result in the net reduction of approximately 1,491 trips per day in comparison to the cumulative no project condition.

Alternative 3: Plant Operation Only (Importation)

The impact would not occur under Alternative 3 because the alternative would result in the net reduction of approximately 266 trips per day in comparison to the cumulative no project condition.

Alternative 4: Shallow Mining (Alternative Method/Reclamation)

The impact would not occur under Alternative 4 because the alternative would result in a net reduction of approximately 1,239 trips per day within the study area in comparison to the cumulative no project condition.

Alternative 5a : Decreased Mining (Restricted Allocation)

The impact would not occur under Alternative 5a because the alternative would result in a net reduction of about 836 trips per day within the study area in comparison to the cumulative no project condition.

### Alternative 5b: Decreased Mining (Shorter Mining Period)

Alternative 5b would add approximately 1,225 new trips per day above the cumulative no project condition within the study area. This is considered to be a significant impact because of the cumulative degradation of the roadway system that would result from these additional trips.

### Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Alternative 6 would add about 879 new trips per day above the cumulative no project condition within the study area. This is considered to be a significant impact because of the cumulative degradation of the roadway system that would result from these additional trips.

#### *Mitigation Measure 4.8-2a (OCMP, A-3, A-5b, and A-6)*

*Performance Standard 2.5-5 of the OCMP and Section 10-4.407 of the Off-Channel Surface Mining Ordinance should be amended as follows:*

As a condition of approval, the operator shall be required to construct enter into a maintenance agreement to assume joint pavement maintenance responsibility with the County (or shared with another producer using the same roadway) for all County roads along a designated haul route to an engineered standard as established by the Public Works Department, from the access point of the surface mining operation to the nearest State Highway. Construction of the required improvements shall be completed prior to commencement of the mining operation. The operator shall agree to submit an evaluation of the structural integrity of the identified roadways on or before December 1 of each year in which mining operations are permitted. The report shall be prepared by an independent registered professional engineer with expertise in the area of roadway pavement and shall be subject to the approval of the Public Works Department. Based on the results of this annual evaluation, the Public Works Department shall identify the improvements required to maintain safe and efficient traffic operations on the road for the upcoming year. The County agrees to implement maintenance improvements similar in nature and frequency to other County roads (i.e., fill cracks and chip seal). The operator agrees to implement the additional improvements beyond the typical County improvements in a timeframe set forth by the Public Works Department. As an alternative, the operator may provide security in a form authorized by County Counsel equal to the estimated cost of road construction improvements, in which case improvements shall be completed within one (1) year.

If a subsequent mining operation utilizes a road previously required to be improved pursuant to this subsection, then the subsequent operator shall make a payment to the County based on an equitable portion of the relative impact of the proposed project. The amount paid to the County shall be reimbursed to the operator who made the previous road improvement be responsible for compliance with the agreements and requirements of the previous operator.

*Implementation of this mitigation would reduce this impact to a less-than-significant level for the OCMP and Alternatives 3, 5b and 6.*

*Mitigation Measure 4.8-2b: (A-1a, A-1b, A-2, A-4, and A-5a)*

*None required.*

**Impact 4.8-3**

**Potential Change in LOS at the State Route 16 / Road 98 / Main Street Intersection**

Draft OCMP and Implementing Ordinances

The SR 16 / Road 98 / Main Street intersection is projected to operate at 'worse than LOS C' under cumulative conditions with or without the proposed project. This is considered to be a significant impact because the project exacerbates a future LOS deficiency. The proposed project would add 200 new trips per day through the intersection in comparison to the no project condition. A review of the peak hour traffic signal warrant criteria listed in the *Traffic Manual*, California Department of Transportation, 1991, reveals that a traffic signal would be warranted at this intersection in 2027. The construction of left-turn lanes on each approach and the installation of a traffic signal would result in acceptable operations at this intersection.

None of the performance standards listed in the OCMP directly address the need to maintain acceptable levels of service and no mechanism is currently in place to mitigate impacts other than the environmental review process. In 1994, the Yolo County Gravel Mining Committee commissioned the *Economic Analysis of the Cache Creek Gravel Mining Program*, Economic and Planning Systems, June 1994. This study evaluated the economic feasibility of implementing a fee program to implement transportation system improvements. No actions have yet been taken relative to the findings of this study.

Alternative 1a: No Project (Existing Conditions)

Since implementation of Alternative 1a would result in a net decrease of 100 daily trips through the intersection in comparison to the cumulative no project condition, the impact would not occur. However, based on cumulative no project traffic, the intersection improvements would still be required to achieve acceptable operations.

Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Alternative 1b would not result in the exacerbation of the deficiencies at this intersection in comparison to the cumulative no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the intersection improvements would still be required to achieve acceptable operations.

#### Alternative 2: No Mining (Alternative Site)

Implementation of Alternative 2 would reduce the number of daily trips through the intersection by about 200 in comparison to the cumulative no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the intersection improvements would still be required to achieve acceptable operations.

#### Alternative 3: Plant Operation Only (Importation)

Implementation of Alternative 3 would add about 30 daily trips through the intersection in comparison to the no project condition. This is considered to be a significant impact, with the intersection improvements required to achieve acceptable operations.

#### Alternative 4: Shallow Mining (Alternative Method/Reclamation)

Implementation of Alternative 4 would reduce the number of daily trips through the intersection by about 180 in comparison to the cumulative no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the intersection improvements would still be required to achieve acceptable operations.

#### Alternative 5a : Decreased Mining (Restricted Allocation)

Implementation of Alternative 5a would reduce the number of daily trips through the intersection by about 120 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the intersection improvements would still be required to achieve acceptable operations.

#### Alternative 5b: Decreased Mining (Shorter Mining Period)

Implementation of Alternative 5b would add about 210 daily trips through the intersection in comparison to the no project condition up to 2011, and potentially up to 2021. This is considered to be a significant impact, with the intersection improvements required to achieve acceptable operations.

#### Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Implementation of Alternative 6 would add approximately 200 daily trips through the intersection in comparison to the cumulative no project condition. This is considered to be a significant impact, with the intersection improvements required to achieve acceptable operations.

*Mitigation Measure 4.8-3a: (OCMP, A-3, A-5b, A-6)*

*The following performance standard should be added to the OCMP and to the Off-Channel Surface Mining Ordinance.*



*Each operator shall pay its fair share toward improvements required to maintain LOS C operations on County roads or LOS D operations on State Highways. Fair share mitigation shall also be required to improve existing operational deficiencies of the transportation system. Specific locations shall be identified through the project-specific environmental review process for each operator's long-term mining permit application. Each operator shall participate in a funding program operated by Yolo County which is designed to ensure that all improvements are made in a timely manner and that a reimbursement mechanism is in place to ensure repayment of any costs contributed in excess of fair share amounts. The program shall be initiated upon the approval of the long-term mining permits and shall be updated biennially by Yolo County to ensure any new or modified impacts or funding sources are being addressed.*

*Implementation of this mitigation would reduce this impact to a less-than-significant level for the OCMP and Alternatives 3, 5b and 6.*

*Mitigation Measure 4.8-3b: (A-1a, A-1b, A-2, A-4, A-5a)*

*None required.*

#### **Impact 4.8-4**

#### **Potential Change in LOS at the State Route 16 / Road 89 Intersection**

##### Draft OCMP and Implementing Ordinances

The SR 16 / Road 89 intersection is projected to operate at 'worse than LOS C' under cumulative conditions with or without the proposed project. This is considered to be a significant impact because the project exacerbates a future LOS deficiency. The proposed project would add 400 new trips per day through the intersection in comparison to the no project condition. A review of the peak hour traffic signal warrant criteria listed in the *Traffic Manual*, California Department of Transportation, 1991, reveals that a traffic signal would be warranted at this intersection in 2027. The construction of left-turn lanes on each approach and the installation of a traffic signal would result in acceptable operations at this intersection. None of the performance standards listed in the OCMP directly address the need to maintain acceptable levels of service.

##### Alternative 1a: No Project (Existing Conditions)

Since implementation of Alternative 1a would result in a net decrease of 130 daily trips through the intersection in comparison to the no project condition, the impact would not occur. However, based on cumulative no project traffic, the intersection improvements would still be required to achieve acceptable operations.

##### Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Implementation of Alternative 1b would not result in the exacerbation of the deficiencies at this intersection in comparison to the no project condition. Thus, the impact would not

occur. However, based on cumulative no project traffic, the intersection improvements would still be required to achieve acceptable operations.

Alternative 2: No Mining (Alternative Site)

Implementation of Alternative 2 would reduce the number of daily trips through the intersection by about 370 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the intersection improvements would still be required to achieve acceptable operations.

Alternative 3: Plant Operation Only (Importation)

Implementation of Alternative 3 would add 100 daily trips through the intersection in comparison to the no project condition. This is considered to be a significant impact, with the intersection improvements required to achieve acceptable operations.

Alternative 4: Shallow Mining (Alternative Method/Reclamation)

Implementation of Alternative 4 would reduce the number of daily trips through the intersection by 370 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the intersection improvements would still be required to achieve acceptable operations.

Alternative 5a : Decreased Mining (Restricted Allocation)

Implementation of Alternative 5a would reduce the number of daily trips through the intersection by 190 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the intersection improvements would still be required to achieve acceptable operations.

Alternative 5b: Decreased Mining (Shorter Mining Period)

Implementation of Alternative 5b would add 480 daily trips through the intersection in comparison to the no project condition up to 2011, and potentially up to 2021. This is considered to be a significant impact, with the intersection improvements required to achieve acceptable operations.

Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Implementation of Alternative 6 would add 400 daily trips through the intersection in comparison to the no project condition. This is considered to be a significant impact, with the intersection improvements required to achieve acceptable operations.

*Mitigation Measure 4.8-4a (OCMP, A-3, A-5b, A-6)*

*Implementation of Mitigation Measure 4.8-3a would reduce this impact to a less-than-significant level for the OCMP and Alternatives 3, 5b and 6.*

*Mitigation Measure 4.8-4b (A-1a, A-1b, A-2, A-4, and A-5a)*

*None required.*

**Impact 4.8-5**

**Potential Impacts to the Non-Standard Segment of Road 19, West of Interstate 505**

Draft OCMP and Implementing Ordinances

This segment of Road 19 consists of two sharp horizontal curves that do not meet current County design standards. These non-standard curves create a potential for vehicles to drift into the oncoming travel lane, particularly when travelling at higher speeds. This existing deficiency increases the overall potential for accidents as compared to more standard designs. The proposed project would add 520 trips per day to this segment, thereby exacerbating this existing deficiency. This is considered to be a significant impact. The following performance standards of the OCMP apply to this impact.

- 2.5-5 As a condition of approval, the operator shall be required to construct all County roads along a designated haul route to an engineered standard as established by the Public Works Department, from the access point of the surface mining operation to an appropriate State Highway. Construction of the required improvements shall be completed prior to commencement of the mining operation. As an alternative, the operator may provide security in a form authorized by County Counsel equal to the estimated cost of road construction improvements, in which case improvements shall be completed within one (1) year.

If a subsequent mining operation utilizes a road previously required to be improved pursuant to this subsection, then the subsequent operator shall make a payment to the County based on an equitable portion of the relative impact of the proposed project. The amount paid to the County shall be reimbursed to the operator who made the previous road payment.

- 2.5-9 Those portions of designated truck haul routes that include County-maintained roads shall be posted as such, in accordance with the Public Works Department, to facilitate law enforcement and public safety. Private truck haul routes shall be used where possible, in order to reduce impacts to public roads.

Improvements such as wider travel lanes or a realignment of the roadway would be required to mitigate this impact.

Alternative 1a: No Project (Existing Conditions)

Implementation of Alternative 1a would reduce the number of daily trips along this segment by 130 in comparison to the no project condition. Thus, the impact would not occur.

However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Implementation of Alternative 1b would not add any daily trips along this segment in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

Alternative 2: No Mining (Alternative Site)

Implementation of Alternative 2 would result in no new daily trips added to this segment in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

Alternative 3: Plant Operation Only (Importation)

Implementation of Alternative 3 would result in no new daily trips added to this segment in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

Alternative 4: Shallow Mining (Alternative Method/Reclamation)

Implementation of Alternative 4 would add 92 daily trips along this road segment in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 5a : Decreased Mining (Restricted Allocation)

Implementation of Alternative 5a would add 141 daily trips along this road segment in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 5b: Decreased Mining (Shorter Mining Period)

Implementation of Alternative 5b would add 510 daily trips along this road segment in comparison to the no project condition. The impact would occur through 2011, and potentially up to 2021. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

## Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Implementation of Alternative 6 would add 520 daily trips along this road segment in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

*Mitigation Measure 4.8-5a (OCMP, A-4, A-5a, A-5b, A-6)*

*Implementation of Mitigation Measure 4.8-3a would reduce this impact to a less-than-significant level for the OCMP and Alternatives 4, 5a, 5b and 6.*

*Mitigation Measure 4.8-5b: (A-1a, A-1b, A-2, and A-3)*

*None required.*

### **Impact 4.8-6**

#### **Potential Impacts to the Non-Standard Segment of State Route 16 Between I-505 and the Entrance to the Solano Concrete Plant**

### Draft OCMP and Implementing Ordinances

This segment of State Route 16 lacks a left-turning lane and shoulders for eastbound travel, thereby causing a safety concern. Even though there are current plans to add a 300-foot paved shoulder along this section of SR 16 to improve passing opportunities, the improvement is a short-term solution that is not ideal from a capacity and/or safety standpoint. Therefore, further improvements are required, which could include<sup>24</sup>:

- Add a left-turn lane for eastbound left-turning movements into the Solano Concrete plant; and
- Eliminate the free right-turn movement from the northbound I-505 off-ramp to improve the vehicle spacing remove the potential for speed conflicts for eastbound travel near the Solano driveway.

Specific mitigation measures will be identified in the environmental impact report being prepared for the long-term permit application for the Solano Concrete facility.

The proposed project would add 240 truck trips per day to this segment in comparison to the no project condition. This is considered to be a significant impact. The following performance standards of the OCMP apply to this impact.

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<sup>24</sup> Source: *Certified Environmental Impact Report for the Solano Concrete Company Short-Term Mining Permit Application*, Yolo County, July, 1995.

2.5-5 As a condition of approval, the operator shall be required to construct all County roads along a designated haul route to an engineered standard as established by the Public Works Department, from the access point of the surface mining operation to an appropriate State Highway. Construction of the required improvements shall be completed prior to commencement of the mining operation. As an alternative, the operator may provide security in a form authorized by County Counsel equal to the estimated cost of road construction improvements, in which case improvements shall be completed within one (1) year.

If a subsequent mining operation utilizes a road previously required to be improved pursuant to this subsection, then the subsequent operator shall make a payment to the County based on an equitable portion of the relative impact of the proposed project. The amount paid to the County shall be reimbursed to the operator who made the previous road payment.

2.5-9 Those portions of designated truck haul routes that include County-maintained roads shall be posted as such, in accordance with the Public Works Department, to facilitate law enforcement and public safety. Private truck haul routes shall be used where possible, in order to reduce impacts to public roads.

#### Alternative 1a: No Project (Existing Conditions)

Implementation of Alternative 1a would reduce the number of daily trips along this segment by 150 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

#### Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Implementation of Alternative 1b would not add any daily trips along this segment in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

#### Alternative 2: No Mining (Alternative Site)

Implementation of Alternative 2 would reduce the number of daily trips along this segment by 310 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

#### Alternative 3: Plant Operation Only (Importation)

Implementation of Alternative 3 would add 40 daily trips along this road segment in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 4: Shallow Mining (Alternative Method/Reclamation)

Implementation of Alternative 4 would reduce the number of daily trips along this segment by 330 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

Alternative 5a : Decreased Mining (Restricted Allocation)

Implementation of Alternative 5a would reduce the number of daily trips along this segment by 320 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

Alternative 5b: Decreased Mining (Shorter Mining Period)

Implementation of Alternative 5b would add 350 daily trips along this road segment in comparison to the no project condition. The impact would occur through 2011, and potentially up to 2021. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Implementation of Alternative 6 would add 240 daily trips along this road segment in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

*Mitigation Measure 4.8-6a (OCMP, A-3, A-5b, A-6)*

*Implementation of Mitigation Measure 4.8-3a would reduce this impact to a less-than-significant level for the OCMP and Alternatives 3, 5b and 6.*

*Mitigation Measure 4.8-6b: (A-1a, A-1b, A-2, A-4, and A-5a)*

*None required.*

**Impact 4.8-7**

**Potential Impacts to the Non-Standard Segment of Road 14, West of Interstate 505**

Draft OCMP and Implementing Ordinances

This segment of Road 14 consists of several sharp horizontal curves to the west of Interstate 505. The posted speed limit for these curves is 25 miles per hour and increases in travel would increase the accident potential and pose a potential safety concern.

Roadway realignment improvements to County standards would be necessary to mitigate this impact.

The proposed project would add 400 trips per day to this segment in comparison to no project conditions. Since this level exceeds the standard of 10 trips per day, it would be considered a significant impact. It should be noted that this analysis was conducted assuming that access to the Cache Creek Aggregates site was along Road 85. If access to the site is instead established on Road 87, then this impact would be avoided. However, access to the site from Road 87 would exacerbate other impacts and create a new impact at the Road 19 / Road 87 intersection (insufficient intersection curve radii).

The following performance standards of the OCMP apply to this impact.

2.5-5 As a condition of approval, the operator shall be required to construct all County roads along a designated haul route to an engineered standard as established by the Public Works Department, from the access point of the surface mining operation to an appropriate State Highway. Construction of the required improvements shall be completed prior to commencement of the mining operation. As an alternative, the operator may provide security in a form authorized by County Counsel equal to the estimated cost of road construction improvements, in which case improvements shall be completed within one (1) year.

If a subsequent mining operation utilizes a road previously required to be improved pursuant to this subsection, then the subsequent operator shall make a payment to the County based on an equitable portion of the relative impact of the proposed project. The amount paid to the County shall be reimbursed to the operator who made the previous road payment.

2.5-9 Those portions of designated truck haul routes that include County-maintained roads shall be posted as such, in accordance with the Public Works Department, to facilitate law enforcement and public safety. Private truck haul routes shall be used where possible, in order to reduce impacts to public roads.

#### Alternative 1a: No Project (Existing Conditions)

Implementation of Alternative 1a would reduce the number of daily trips along this segment by 310 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

#### Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Implementation of Alternative 1b would not add any daily trips along this segment in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.



Alternative 2: No Mining (Alternative Site)

Implementation of Alternative 2 would not add any daily trips along this segment in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

Alternative 3: Plant Operation Only (Importation)

Implementation of Alternative 3 would not add any daily trips along this segment in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

Alternative 4: Shallow Mining (Alternative Method/Reclamation)

Implementation of Alternative 4 would add 179 daily trips along this road segment in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 5a : Decreased Mining (Restricted Allocation)

Implementation of Alternative 5a would add 141 daily trips along this road segment in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 5b: Decreased Mining (Shorter Mining Period)

Implementation of Alternative 5b would add 404 daily trips along this road segment in comparison to the no project condition. The impact would occur through 2011, and potentially up to 2021. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Implementation of Alternative 6 would add 400 daily trips along this road segment in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

*Mitigation Measure 4.8-7a (OCMP, A-4, A-5a, A-5b, and A-6)*

*Implementation of Mitigation Measure 4.8-3a would reduce this impact to a less-than-significant level for the OCMP and Alternatives 4, 5a, 5b and 6.*

*Mitigation Measure 4.8-7b: (A-1a, A-1b, A-2, and A-3)*

*None required.*

**Impact 4.8-8**

**Potential Impacts to the Non-Standard Pavement Segment of Road 14, West of Interstate 505**

Draft OCMP and Implementing Ordinances

The pavement consists of gravel along this approximately one-mile long segment of Road 14, west of I-505. The addition of more than 10 trips per day would exacerbate this existing deficiency and require improvements to ensure safe and efficient operations. Specifically, structural section and pavement surface improvements would likely be required to mitigate this impact.

The proposed project would add 400 trips per day to this segment in comparison to no project conditions. Since this level exceeds the standard of 10 trips per day, it would be considered a significant impact. It should be noted that this analysis was conducted assuming that access to the Cache Creek Aggregates site was along Road 85. If access to the site is instead established on Road 87, then this impact would be avoided. However, access to the site from Road 87 would exacerbate other impacts and create a new impact at the Road 19 / Road 87 intersection (insufficient intersection curve radii).

The following performance standards of the OCMP apply to this impact.

- 2.5-5 As a condition of approval, the operator shall be required to construct all County roads along a designated haul route to an engineered standard as established by the Public Works Department, from the access point of the surface mining operation to an appropriate State Highway. Construction of the required improvements shall be completed prior to commencement of the mining operation. As an alternative, the operator may provide security in a form authorized by County Counsel equal to the estimated cost of road construction improvements, in which case improvements shall be completed within one (1) year.

If a subsequent mining operation utilizes a road previously required to be improved pursuant to this subsection, then the subsequent operator shall make a payment to the County based on an equitable portion of the relative impact of the proposed project. The amount paid to the County shall be reimbursed to the operator who made the previous road payment.

- 2.5-9 Those portions of designated truck haul routes that include County-maintained roads shall be posted as such, in accordance with the Public Works Department, to facilitate law enforcement and public safety. Private truck haul routes shall be used where possible, in order to reduce impacts to public roads.

#### Alternative 1a: No Project (Existing Conditions)

Implementation of Alternative 1a would reduce the number of daily trips along this segment by 310 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

#### Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Implementation of Alternative 1b would not add any daily trips along this segment in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

#### Alternative 2: No Mining (Alternative Site)

Implementation of Alternative 2 would not add any daily trips along this segment in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

#### Alternative 3: Plant Operation Only (Importation)

Implementation of Alternative 3 would not add any daily trips along this segment in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the roadway improvements would still be required to mitigate the cumulative impact.

#### Alternative 4: Shallow Mining (Alternative Method/Reclamation)

Implementation of Alternative 4 would add 179 daily trips along this road segment in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

#### Alternative 5a : Decreased Mining (Restricted Allocation)

Implementation of Alternative 5a would add 141 daily trips along this road segment in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

#### Alternative 5b: Decreased Mining (Shorter Mining Period)

Implementation of Alternative 5b would add 404 daily trips along this road segment in comparison to the no project condition. The impact would occur through 2011, and

potentially up to 2021. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

#### Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Implementation of Alternative 6 would add 400 daily trips along this road segment in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

*Mitigation Measure 4.8-8a (OCMP, A-4, A-5a, A-5b, A-6)*

*Implementation of Mitigation Measure 4.8-3a would reduce this impact to a less-than-significant level for the OCMP and Alternatives 4, 5a, 5b and 6.*

*Mitigation Measure 4.8-8b: (A-1a, A-1b, A-2, and A-3)*

*None required.*

#### **Impact 4.8-9**

#### **Potential Impacts to Two Non-Standard Bridges on Road 89, North of State Route 16**

#### Draft OCMP and Implementing Ordinances

Two bridges (089 -16.41, 089 -16.72) on Road 89, north of SR 16, were identified by the Federal government as being in need of structural repair. These existing deficiencies would be mitigated by the replacement of the bridges under the Federal program in which the County must provide matching funds to obtain Federal assistance.

The proposed project would add 400 trips per day to each of these bridges in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 trips per day. The following performance standards of the OCMP apply to this impact.

- 2.5-5 As a condition of approval, the operator shall be required to construct all County roads along a designated haul route to an engineered standard as established by the Public Works Department, from the access point of the surface mining operation to an appropriate State Highway. Construction of the required improvements shall be completed prior to commencement of the mining operation. As an alternative, the operator may provide security in a form authorized by County Counsel equal to the estimated cost of road construction improvements, in which case improvements shall be completed within one (1) year.

If a subsequent mining operation utilizes a road previously required to be improved pursuant to this subsection, then the subsequent operator shall make a payment to the County based on an equitable portion of the relative impact of the proposed project. The amount paid to the County shall be reimbursed to the operator who made the previous road payment.

2.5-9 Those portions of designated truck haul routes that include County-maintained roads shall be posted as such, in accordance with the Public Works Department, to facilitate law enforcement and public safety. Private truck haul routes shall be used where possible, in order to reduce impacts to public roads.

Alternative 1a: No Project (Existing Conditions)

Implementation of Alternative 1a would reduce the number of daily trips on these bridges by 130 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Implementation of Alternative 1b would not add any daily trips on these bridges in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

Alternative 2: No Mining (Alternative Site)

Implementation of Alternative 2 would reduce the number of daily trips on these bridges by 370 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

Alternative 3: Plant Operation Only (Importation)

Implementation of Alternative 3 would add 100 daily trips on these bridges in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 4: Shallow Mining (Alternative Method/Reclamation)

Implementation of Alternative 4 would reduce the number of daily trips on these bridges by 370 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

Alternative 5a : Decreased Mining (Restricted Allocation)

Implementation of Alternative 5a would reduce the number of daily trips on these bridges by 190 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

### Alternative 5b: Decreased Mining (Shorter Mining Period)

Implementation of Alternative 5b would add 480 daily trips to these bridges in comparison to the no project condition. The impact would occur through 2011, and potentially up to 2021. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

### Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Implementation of Alternative 6 would add 400 daily trips to these bridges in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

*Mitigation Measure 4.8-9a (OCMP, A-3, A-5b, A-6)*

*Implementation of Mitigation Measure 4.8-3a would reduce this impact to a less-than-significant level for the OCMP and Alternatives 3, 5b and 6.*

*Mitigation Measure 4.8-9b: (A-1a, A-1b, A-2, A-4, and A-5a)*

*None required.*

#### **Impact 4.8-10**

#### **Potential Impacts to a Non-Standard Bridge on Road 19, West of Interstate 505**

#### Draft OCMP and Implementing Ordinances

The bridge (089 --13.76) on Road 19, west of I-505, was identified as currently having a non-standard width of less than 20 feet. The lack of sufficient width creates a potential safety concern, particularly when two vehicles access the bridge in opposite directions of travel at the same time. This existing deficiency would be mitigated by the widening of the bridge to a safely accommodate two-way truck traffic.

The proposed project would add 520 trips per day over each of these bridges in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 trips per day. The following performance standards of the OCMP apply to this impact.

- 2.5-5 As a condition of approval, the operator shall be required to construct all County roads along a designated haul route to an engineered standard as established by the Public Works Department, from the access point of the surface mining operation to an appropriate State Highway. Construction of the required improvements shall be completed prior to commencement of the mining operation. As an alternative, the operator may provide security in a form authorized by County Counsel equal to the estimated cost of road construction improvements, in which case improvements shall be completed within one (1) year.

If a subsequent mining operation utilizes a road previously required to be improved pursuant to this subsection, then the subsequent operator shall make a payment to the County based on an equitable portion of the relative impact of the proposed project. The amount paid to the County shall be reimbursed to the operator who made the previous road payment.

- 2.5-9 Those portions of designated truck haul routes that include County-maintained roads shall be posted as such, in accordance with the Public Works Department, to facilitate law enforcement and public safety. Private truck haul routes shall be used where possible, in order to reduce impacts to public roads.

#### Alternative 1a: No Project (Existing Conditions)

Implementation of Alternative 1a would reduce the number of daily trips on this bridge by 130 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Implementation of Alternative 1b would not add any daily trips on this bridge in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 2: No Mining (Alternative Site)

Implementation of Alternative 2 would not add any daily trips on this bridge in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 3: Plant Operation Only (Importation)

Implementation of Alternative 3 would not add any daily trips on this bridge in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 4: Shallow Mining (Alternative Method/Reclamation)

Implementation of Alternative 4 would add 92 daily trips along this bridge in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 5a : Decreased Mining (Restricted Allocation)

Implementation of Alternative 5a would add 141 daily trips along this bridge in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 5b: Decreased Mining (Shorter Mining Period)

Implementation of Alternative 5b would add 510 daily trips along this bridge in comparison to the no project condition. The impact would occur through 2011, and potentially up to 2021. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Implementation of Alternative 6 would add 520 daily trips along this bridge in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

*Mitigation Measure 4.8-10a (OCMP, A-4, A-5a, A-5b, A-6)*

*Implementation of Mitigation Measure 4.8-3a would reduce this impact to a less-than-significant level for the OCMP and Alternatives 4, 5a, 5b and 6.*

*Mitigation Measure 4.8-10b: (A-1a, A-1b, and A-3)*

*None required.*

**Impact 4.8-11**

**Potential Impacts to a Non-Standard Bridge on Road 85, North of Road 16A**

Draft OCMP and Implementing Ordinances

The bridge (085 --11.71), located north of Road 16A, was identified as currently having a non-standard width of less than 20 feet. The lack of sufficient width creates a potential safety concern, particularly when two vehicles access the bridge in opposite directions of travel at the same time. This existing deficiency would be mitigated by the widening of the bridge to safely accommodate two-way truck traffic.

The proposed project would add 400 trips per day to this bridge in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 trips per day. The following performance standards of the OCMP apply to this impact.



- 2.5-5 As a condition of approval, the operator shall be required to construct all County roads along a designated haul route to an engineered standard as established by the Public Works Department, from the access point of the surface mining operation to an appropriate State Highway. Construction of the required improvements shall be completed prior to commencement of the mining operation. As an alternative, the operator may provide security in a form authorized by County Counsel equal to the estimated cost of road construction improvements, in which case improvements shall be completed within one (1) year.

If a subsequent mining operation utilizes a road previously required to be improved pursuant to this subsection, then the subsequent operator shall make a payment to the County based on an equitable portion of the relative impact of the proposed project. The amount paid to the County shall be reimbursed to the operator who made the previous road payment.

- 2.5-9 Those portions of designated truck haul routes that include County-maintained roads shall be posted as such, in accordance with the Public Works Department, to facilitate law enforcement and public safety. Private truck haul routes shall be used where possible, in order to reduce impacts to public roads.

#### Alternative 1a: No Project (Existing Conditions)

Implementation of Alternative 1a would reduce the number of daily trips on this bridge by 310 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Implementation of Alternative 1b would not add any daily trips on this bridge in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 2: No Mining (Alternative Site)

Implementation of Alternative 2 would not add any daily trips on this bridge in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 3: Plant Operation Only (Importation)

Implementation of Alternative 3 would not add any daily trips on this bridge in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 4: Shallow Mining (Alternative Method/Reclamation)

Implementation of Alternative 4 would add 179 daily trips to this bridge in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

#### Alternative 5a : Decreased Mining (Restricted Allocation)

Implementation of Alternative 5a would add 141 daily trips to this bridge in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

#### Alternative 5b: Decreased Mining (Shorter Mining Period)

Implementation of Alternative 5b would add 404 daily trips to this bridge in comparison to the no project condition. The impact would occur through 2011, and potentially up to 2021. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

#### Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Implementation of Alternative 6 would add 400 daily trips to this bridge in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

*Mitigation Measure 4.8-11a (OCMP, A-4, A-5a, A-5b, A-6)*

*Implementation of Mitigation Measure 4.8-3a would reduce this impact to a less-than-significant level for the OCMP and Alternatives 4, 5a, 5b and 6.*

*Mitigation Measure 4.8-11b: (A-1a, A-1b, A-2, and A-3)*

*None required.*

#### **Impact 4.8-12**

#### **Potential Impacts to a Non-Standard Bridge on Road 14, West of Interstate 505**

#### Draft OCMP and Implementing Ordinances

The bridge (014 --11.95), located on Road 14, between Road 86 and Road 87, was identified as currently having a non-standard width of less than 20 feet. The lack of sufficient width creates a potential safety concern, particularly when two vehicles access the bridge in opposite directions of travel at the same time. This existing deficiency would be mitigated by the widening of the bridge to safely accommodate two-way truck traffic.

The proposed project would add 400 trips per day over each of these bridges in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 trips per day. The following performance standards of the OCMP apply to this impact.

2.5-5 As a condition of approval, the operator shall be required to construct all County roads along a designated haul route to an engineered standard as established by the Public Works Department, from the access point of the surface mining operation to an appropriate State Highway. Construction of the required improvements shall be completed prior to commencement of the mining operation. As an alternative, the operator may provide security in a form authorized by County Counsel equal to the estimated cost of road construction improvements, in which case improvements shall be completed within one (1) year.

If a subsequent mining operation utilizes a road previously required to be improved pursuant to this subsection, then the subsequent operator shall make a payment to the County based on an equitable portion of the relative impact of the proposed project. The amount paid to the County shall be reimbursed to the operator who made the previous road payment.

2.5-9 Those portions of designated truck haul routes that include County-maintained roads shall be posted as such, in accordance with the Public Works Department, to facilitate law enforcement and public safety. Private truck haul routes shall be used where possible, in order to reduce impacts to public roads.

#### Alternative 1a: No Project (Existing Conditions)

Implementation of Alternative 1a would reduce the number of daily trips on this bridge by 310 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Implementation of Alternative 1b would not add any daily trips on this bridge in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 2: No Mining (Alternative Site)

Implementation of Alternative 2 would not add any daily trips on this bridge in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 3: Plant Operation Only (Importation)

Implementation of Alternative 3 would not add any daily trips on this bridge in comparison to the no project condition. Thus, the impact would not occur. However, based on

cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

Alternative 4: Shallow Mining (Alternative Method/Reclamation)

Implementation of Alternative 4 would add 179 daily trips to this bridge in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 5a : Decreased Mining (Restricted Allocation)

Implementation of Alternative 6 would add 141 daily trips to this bridge in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 5b: Decreased Mining (Shorter Mining Period)

Implementation of Alternative 5b would add 404 daily trips to this bridge in comparison to the no project condition. The impact would occur through 2011, and potentially up to 2021. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Implementation of Alternative 6 would add 400 daily trips to this bridge in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

*Mitigation Measure 4.8-12a (OCMP, A-4, A-5a, A-5b, A-6)*

*Implementation of Mitigation Measure 4.8-3a would reduce this impact to a less-than-significant level for the OCMP and Alternatives 4, 5a, 5b and 6.*

*Mitigation Measure 4.8-12b: (A-1a, A-1b, A-2, and A-3)*

*None required.*

**Impact 4.8-13**

**Potential Impacts to the Non-Standard Curve Radii at the Road 85 / Road 14 Intersection**

Draft OCMP and Implementing Ordinances

The limited curve radii at the Road 85 / Road 14 intersection causes trucks to access an on-coming lane while making a turning movement. This is caused by a combination of

narrow lane widths and sharp curves at the intersection. This existing deficiency could result in increased accident potential at the intersection and could create overall traffic safety concern. Improvements such as widened travel lanes and the provision of turn lanes would be required to mitigate this impact.

The problems for northbound right-turns and westbound left-turns would be exacerbated by the proposed project. The proposed project would add 400 trips per day through the intersection in comparison to no project conditions. This is considered to be a significant impact because it exceeds the standard of 10 vehicles per day. The following performance standards of the OCMP apply to this impact.

2.5-5 As a condition of approval, the operator shall be required to construct all County roads along a designated haul route to an engineered standard as established by the Public Works Department, from the access point of the surface mining operation to an appropriate State Highway. Construction of the required improvements shall be completed prior to commencement of the mining operation. As an alternative, the operator may provide security in a form authorized by County Counsel equal to the estimated cost of road construction improvements, in which case improvements shall be completed within one (1) year.

If a subsequent mining operation utilizes a road previously required to be improved pursuant to this subsection, then the subsequent operator shall make a payment to the County based on an equitable portion of the relative impact of the proposed project. The amount paid to the County shall be reimbursed to the operator who made the previous road payment.

2.5-9 Those portions of designated truck haul routes that include County-maintained roads shall be posted as such, in accordance with the Public Works Department, to facilitate law enforcement and public safety. Private truck haul routes shall be used where possible, in order to reduce impacts to public roads.

#### Alternative 1a: No Project (Existing Conditions)

Implementation of Alternative 1a would reduce the number of daily trips through this intersection by 310 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Implementation of Alternative 1b would not add any daily trips on this intersection in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 2: No Mining (Alternative Site)

Implementation of Alternative 2 would not add any daily trips on this intersection in comparison to the no project condition. Thus, the impact would not occur. However,

based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

Alternative 3: Plant Operation Only (Importation)

Implementation of Alternative 3 would not add any daily trips on this intersection in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

Alternative 4: Shallow Mining (Alternative Method/Reclamation)

Implementation of Alternative 4 would add 179 daily trips through this intersection in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 5a : Decreased Mining (Restricted Allocation)

Implementation of Alternative 5a would add 141 daily trips through this intersection in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 5b: Decreased Mining (Shorter Mining Period)

Implementation of Alternative 5b would add 404 daily trips through this intersection in comparison to the no project condition. The impact would occur through 2011, and potentially up to 2021. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Implementation of Alternative 6 would add 400 daily trips through this intersection in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

*Mitigation Measure 4.8-13a (OCMP, A-4, A-5a, A-5b, A-6)*

*Implementation of Mitigation Measure 4.8-3a would reduce this impact to a less-than-significant level for the OCMP and Alternatives 4, 5a, 5b and 6.*

*Mitigation Measure 4.8-13b: (A-1a, A-1b, A-2, and A-3)*

*None required.*

## **Impact 4.8-14**

### **Potential Impacts to the Non-Standard Curve Radii at the State Route 16 / Road 89 Intersection**

#### Draft OCMP and Implementing Ordinances

The limited curve radii at the State Route 16 / Road 89 intersection causes trucks to access an on-coming lane while making a turning movement. This is caused by a combination of narrow lane widths and sharp curves at the intersection. This existing deficiency could result in increased accident potential at the intersection and could create overall traffic safety concern. Improvements such as widened travel lanes and the provision of turn lanes would be required to mitigate this impact.

The problems for westbound right-turns and southbound left-turns would be exacerbated by the proposed project. The proposed project would add 400 trips per day through the intersection in comparison to no project conditions. This is considered to be a significant impact because it exceeds the standard of 10 vehicles per day. The following performance standards of the OCMP apply to this impact.

- 2.5-5 As a condition of approval, the operator shall be required to construct all County roads along a designated haul route to an engineered standard as established by the Public Works Department, from the access point of the surface mining operation to an appropriate State Highway. Construction of the required improvements shall be completed prior to commencement of the mining operation. As an alternative, the operator may provide security in a form authorized by County Counsel equal to the estimated cost of road construction improvements, in which case improvements shall be completed within one (1) year.

If a subsequent mining operation utilizes a road previously required to be improved pursuant to this subsection, then the subsequent operator shall make a payment to the County based on an equitable portion of the relative impact of the proposed project. The amount paid to the County shall be reimbursed to the operator who made the previous road payment.

- 2.5-9 Those portions of designated truck haul routes that include County-maintained roads shall be posted as such, in accordance with the Public Works Department, to facilitate law enforcement and public safety. Private truck haul routes shall be used where possible, in order to reduce impacts to public roads.

#### Alternative 1a: No Project (Existing Conditions)

Implementation of Alternative 1a would reduce the number of daily trips through this intersection by 130 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Implementation of Alternative 1b would not add any daily trips on this intersection in comparison to the no project condition. Thus, the impact would not occur. However,

based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

Alternative 2: No Mining (Alternative Site)

Implementation of Alternative 2 would reduce the number of daily trips through this intersection by 370 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

Alternative 3: Plant Operation Only (Importation)

Implementation of Alternative 3 would add 100 daily trips through this intersection in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 4: Shallow Mining (Alternative Method/Reclamation)

Implementation of Alternative 4 would reduce the number of daily trips through this intersection by 370 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

Alternative 5a : Decreased Mining (Restricted Allocation)

Implementation of Alternative 5a would reduce the number of daily trips through this intersection by 190 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

Alternative 5b: Decreased Mining (Shorter Mining Period)

Implementation of Alternative 5b would add 480 daily trips through this intersection in comparison to the no project condition. The impact would occur through 2011, and potentially up to 2021. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Implementation of Alternative 6 would add 400 daily trips through this intersection in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.



*Mitigation Measure 4.8-14a (OCMP, A-3, A-5b, A-6)*

*Implementation of Mitigation Measure 4.8-3a would reduce this impact to a less-than-significant level for the OCMP and Alternatives 3, 5b and 6.*

*Mitigation Measure 4.8-14a: (A-1a, A-1b, A-2, A-4, and A-5a)*

*None required.*

### **Impact 4.8-15**

#### **Potential Impacts to the Non-Standard Curve Radii at the Road 20 / Road 96 Intersection**

##### Draft OCMP and Implementing Ordinances

The limited curve radii at the Road 20 / Road 96 intersection causes trucks to access an on-coming lane while making a turning movement. This is caused by a combination of narrow lane widths and sharp curves at the intersection. This existing deficiency could result in increased accident potential at the intersection and could create overall traffic safety concern. Improvements such as widened travel lanes and the provision of turn lanes would be required to mitigate this impact.

The problems for westbound right-turns, eastbound right-turns, northbound left-turns and southbound left-turns would be exacerbated by the proposed project. The proposed project would add 90 trips per day through the intersection in comparison to no project conditions. This is considered to be a significant impact because it exceeds the standard of 10 vehicles per day. The following performance standards of the OCMP apply to this impact.

2.5-5 As a condition of approval, the operator shall be required to construct all County roads along a designated haul route to an engineered standard as established by the Public Works Department, from the access point of the surface mining operation to an appropriate State Highway. Construction of the required improvements shall be completed prior to commencement of the mining operation. As an alternative, the operator may provide security in a form authorized by County Counsel equal to the estimated cost of road construction improvements, in which case improvements shall be completed within one (1) year.

If a subsequent mining operation utilizes a road previously required to be improved pursuant to this subsection, then the subsequent operator shall make a payment to the County based on an equitable portion of the relative impact of the proposed project. The amount paid to the County shall be reimbursed to the operator who made the previous road payment.

2.5-9 Those portions of designated truck haul routes that include County-maintained roads shall be posted as such, in accordance with the Public Works Department, to facilitate law enforcement and public safety. Private truck haul routes shall be used where possible, in order to reduce impacts to public roads.

#### Alternative 1a: No Project (Existing Conditions)

Implementation of Alternative 1a would reduce the number of daily trips through this intersection by 60 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Implementation of Alternative 1b would not add any daily trips on this intersection in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 2: No Mining (Alternative Site)

Implementation of Alternative 2 would reduce the number of daily trips through this intersection by 410 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 3: Plant Operation Only (Importation)

Implementation of Alternative 3 would add 170 daily trips through this intersection in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

#### Alternative 4: Shallow Mining (Alternative Method/Reclamation)

Implementation of Alternative 4 would reduce the number of daily trips through this intersection by 300 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 5a : Decreased Mining (Restricted Allocation)

Implementation of Alternative 5a would reduce the number of daily trips through this intersection by 220 in comparison to the no project condition. Thus, the impact would not occur. However, based on cumulative no project traffic, the improvements would still be required to mitigate the cumulative impact.

#### Alternative 5b: Decreased Mining (Shorter Mining Period)

Implementation of Alternative 5b would add 190 daily trips through this intersection in comparison to the no project condition. The impact would occur through 2011, and

potentially up to 2021. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Implementation of Alternative 6 would add 90 daily trips through this intersection in comparison to the no project condition. This is considered to be a significant impact because it exceeds the standard of 10 vehicle trips per day.

*Mitigation Measure 4.8-15a (OCMP, A-3, A5b, A-6)*

*Implementation of Mitigation Measure 4.8-3a would reduce this impact to a less-than-significant level for the OCMP and Alternatives 3, 5b and 6.*

*Mitigation Measure 4.8-15b: (A-1a, A-1b, A-2, A-4, and A-5a)*

*None required.*

**Impact 4.8-16  
Potential for Accelerated Pavement Deterioration**

Draft OCMP and Implementing Ordinances

The additional truck traffic generated by the proposed project will accelerate the deterioration of roadway pavement. This is considered to be a significant impact. The proposed project results in the following County road segments exceeding the standard of 50 loaded truck trips per day in comparison to no project levels.

- Road 20, Teichert Woodland Entrance to Rd 96: 51 daily loaded truck trips
- Road 85, Cache Creek Entrance to Road 14: 188 daily loaded truck trips
- Road 14, Road 85 to Interstate 505: 188 daily loaded truck trips
- Road 19, Teichert-Esparto Entrance to I-505: 187 daily loaded truck trips
- Road 89, north of State Route 16: 198 daily loaded truck trips

It should be noted that improvements to these and other County roads have previously been conditioned of Cache Creek Aggregates, Teichert Woodland and Teichert Esparto properties.

The following performance standards of the OCMP apply to this impact.

- 2.5-5 As a condition of approval, the operator shall be required to construct all County roads along a designated haul route to an engineered standard as established by the Public Works Department, from the access point of the surface mining operation to an appropriate State Highway. Construction of the required improvements shall be completed prior to commencement of the mining operation. As an alternative, the operator may provide security in a form authorized by

County Counsel equal to the estimated cost of road construction improvements, in which case improvements shall be completed within one (1) year.

If a subsequent mining operation utilizes a road previously required to be improved pursuant to this subsection, then the subsequent operator shall make a payment to the County based on an equitable portion of the relative impact of the proposed project. The amount paid to the County shall be reimbursed to the operator who made the previous road payment.

- 2.5-9 Those portions of designated truck haul routes that include County-maintained roads shall be posted as such, in accordance with the Public Works Department, to facilitate law enforcement and public safety. Private truck haul routes shall be used where possible, in order to reduce impacts to public roads.

Pavements and structural section improvements would be required to each of these facilities to mitigate the impact. However, it is impossible to precisely determine the specific pavement needs over a thirty-year period. For this reason, mitigation measure 4.8-3a sets forth a plan to create a partnership between the County and the producers to ensure safe and efficient operations during the life of the permits. Specific requirements for each producer will be identified in the environmental impact reports for the long-term applications of each producer.

#### Alternative 1a: No Project (Existing Conditions)

Implementation of Alternative 1a would reduce the number of daily trips on each County road in comparison to the no project condition, except Road 19 from the Teichert Esparto entrance to I-505 (75 trips per day), because the existing level would be higher than the cumulative no project base of zero production. Thus, the impact would be considered significant.

#### Alternative 1b: No Project (Existing Permits and Regulatory Condition)

Since Alternative 1b represents the cumulative no project condition, no increase in traffic would be above no project levels. Thus, the impact would not occur.

#### Alternative 2: No Mining (Alternative Site)

Alternative 2 would result in a net decrease in loaded truck trips on all County road segments. Thus, the impact is eliminated.

#### Alternative 3: Plant Operation Only (Importation)

Alternative 3 would result in the following County road segments exceeding the standard of 50 loaded truck trips per day.

- Road 20, Teichert Woodland Entrance to Rd 96: 146 daily loaded truck trips
- Road 20, Road 96 to Road 98: 130 daily loaded truck trips

The volume of loaded trucks is higher than the other alternatives because trucks accessing the plants are loaded in both directions of travel under this alternative. This is considered to be a significant impact.

Alternative 4: Shallow Mining (Alternative Method/Reclamation)

Alternative 4 would result in the following County road segments exceeding the standard of 50 loaded truck trips per day.

- Road 85, Cache Creek Entrance to Rd 14: 89 daily loaded truck trips
- Road 14, Road 85 to I-505: 89 daily loaded truck trips

These roadways are impacted because of the increase in traffic generated by Cache Creek Aggregates over cumulative no project (i.e., zero production) levels. This is considered to be a significant impact.

Alternative 5a : Decreased Mining (Restricted Allocation)

Alternative 5a would result in the following County road segments exceeding the standard of 50 loaded truck trips per day.

- Road 85, Cache Creek Entrance to Rd 14: 70 daily loaded truck trips
- Road 14, Road 85 to I-505: 70 daily loaded truck trips
- Road 19, Teichert Esparto Entrance to I-505: 70 daily loaded truck trips

These roadways are impacted because of the increase in traffic generated by Teichert Esparto Properties and Cache Creek Aggregates over cumulative no project (i.e., zero production) levels. This is considered to be a significant impact.

Alternative 5b: Decreased Mining (Shorter Mining Period)

Alternative 5b results in the following County road segments exceeding the standard of 50 loaded truck trips per day.

- Road 85, Cache Creek Entrance to Road 14: 202 daily loaded truck trips
- Road 14, Road 85 to Interstate 505: 202 daily loaded truck trips
- Road 19, Teichert-Esparto Entrance to I-505: 221 daily loaded truck trips
- Road 89, north of State Route 16: 239 daily loaded truck trips
- Road 20, Teichert Woodland Entrance to Rd 96: 72 daily loaded truck trips
- Road 20, Road 96 to Road 98: 72 daily loaded truck trips

This is considered to be a significant impact.

Alternative 6: Agricultural Reclamation (with Mining Operations as Proposed)

Alternative 6 results in the following County roadway segments exceeding the standard of 50 loaded truck trips per day.

- Road 20, Teichert Woodland Entrance to Rd 96: 51 daily loaded truck trips
- Road 85, Cache Creek Entrance to Road 14: 188 daily loaded truck trips
- Road 14, Road 85 to Interstate 505: 188 daily loaded truck trips
- Road 19, Teichert-Esparto Entrance to I-505: 187 daily loaded truck trips
- Road 89, north of State Route 16: 198 daily loaded truck trips

This is considered to be a significant impact.

*Mitigation Measure 4.8-16a (OCMP, A-1a, A-3, A-4, A-5a, A-5b, A-6)*

*Implementation of Mitigation Measure 4.8-2a would reduce this impact to a less-than-significant level for the OCMP and Alternatives 1a, 3, 4, 5a, 5b and 6.*

*Mitigation Measure 4.8-16b: (A-1b, and A-2)*

*None required.*