

8.6 TRAFFIC AND TRANSPORTATION

8.6.1 INTRODUCTION

This section assesses the potential impacts to the transportation system due to modifications or increases in traffic associated with the construction and operation of the Kings River Conservation District Community Power Plant (KRCDD CPP). The section describes applicable laws, ordinances, regulations, and standards (LORS) and project compliance, the existing transportation system, and current traffic conditions; evaluates potential project impacts; and identifies mitigation measures, as needed.

8.6.2 AFFECTED ENVIRONMENT

8.6.2.1 Project Description

KRCDD is proposing to develop the KRCDD CPP, a nominal 565-megawatt (MW) natural gas-fired combined-cycle base load power plant. The plant will be located near the City of Parlier, in Fresno County on an approximately 32 acre project site. The site is located in an area currently zoned for agriculture and currently being used predominately for agricultural purposes (vineyards). Existing structures on the project site include a vacant rural dwelling, detached garage and barn. Approximately 15 acres of a 40-acre parcel to the immediate south of the project site will be used for temporary staging and parking during construction. A regional transportation map of the area is included as Figure 8.6-1. The KRCDD CPP project site, construction staging area and associated linear facilities as described below are shown on Figure 8.6-2, Local Transportation Access.

Natural gas for the KRCDD CPP will be provided by a new approximately 26-mile long 20-inch underground pipeline interconnection to the Southern California Gas Company (SCG) Line 7000 near the City of Visalia, California. The new gas pipeline will primarily follow existing roads and be located in public right-of-way. Five construction staging areas have also been identified for use during construction of the gas pipeline, each with an approximate size of 200 feet by 200 feet.

The KRCDD CPP will deliver electric power to the Pacific Gas & Electric Company (PG&E) transmission grid through a new approximately five mile-long 230-kilovolt (kV) radial transmission line between the on-site 230-kV switchyard site and PG&E's McCall Substation. The transmission line will cross both private property and public right-of-way.

The primary source of process makeup water for the KRCDD CPP will be recycled water delivered by new underground pipeline interconnections to the Parlier Wastewater Treatment Plant (WWTP) and the Sanger WWTP effluent percolation and evaporation ponds located on

Lincoln Avenue (i.e., Lincoln Ponds). The Parlier WWTP is located adjacent to the north of the plant site, and the interconnection will be located at the northern plant site boundary. The proposed interconnection to the Sanger Lincoln ponds is approximately five miles north and will be located primarily along existing roadways. Currently, two options are being considered for the water pipeline interconnection to Lincoln Ponds (i.e., Water Supply Pipeline Option 1 and Option 2). Up to four new shallow wells recovering percolated effluent will provide a back-up cooling water supply.

Potable water for domestic use will be supplied by a new groundwater well to be installed on the project site. There is no offsite linear associated with the potable water supply. Domestic wastewater will be discharged to the Parlier WWTP. The sewer interconnection is located on the northern boundary of the project site with no offsite linear.

8.6.2.2 Regional Setting

Regional access is provided to the KRCDD CPP project site by United States Highway 99 (U.S. 99), Manning Avenue, and South Highland Avenue State Route (SR) 43 as shown on Figure 8.6-1. U.S. 99 is a primary north/ south regional arterial, which extends north and south through the center of California. To the south, it extends to Interstate 5 (I-5) providing access to the Bakersfield and Los Angeles areas. It passes the project site approximately four miles to the west and is linked to the site by Manning Avenue to the north, Floral Avenue, Mountain View Avenue, and South Bethel Avenue to the south. It consists of three lanes of traffic in each direction at Manning Avenue and two lanes of traffic in each direction at South Bethel Avenue.

Manning Avenue is a rural arterial that extends in an eastward direction from I-5 to Hills Valley Road at the east side of the San Joaquin Valley. Manning Avenue is composed of one to two lanes in each direction with exclusive left turn lanes at major intersections. Near the project site, the roadway includes six foot graded shoulders, two 12-foot lanes in each direction and left turn lanes at primary intersections.

SR 43 extends southerly from Selma to Interstate Route 5 near Bakersfield. SR 43 is an arterial road consisting of one, approximately twelve-foot wide lane in each direction with a five-foot shoulder. SR 43 crosses U.S. 99 with a grade-separated interchange near Floral Avenue. It also crosses Golden State Boulevard approximately three miles west and two miles south of the KRCDD CPP project site.

8.6.2.3 Local Setting

The primary roadways providing circulation through the project area include Golden State Boulevard, Manning Avenue (see discussion above), Mountain View Avenue, South Mendocino



Avenue and South Bethel Avenue as indicated on Figure 8.6.2. Golden State Boulevard is a two-way, two lane arterial that extends north and south parallel to U.S. 99. Golden State Boulevard originates at the City of Fresno and extends southerly through the City of Selma to SR 201.

Mountain View Avenue provides access from U.S. 99 to South Bethel Avenue approximately one-mile south of the project site. Mountain View Avenue consists of two lanes in each direction and extends east and west. West of U.S. 99, Mountain View Avenue begins at South Henderson Road and extends east through the City of Selma crossing U.S. 99 and Golden State Boulevard where it becomes West El Monte Way as it reaches the City of Dinuba.

South Mendocino Avenue is a north/south arterial with one lane in each direction. This roadway passes through approximately seven miles of rural area connecting the City of Kingsburg with the City of Parlier. South Mendocino Avenue provides a direct link with Mountain View Avenue and Manning Avenue. Both of these roadways extend to South Bethel Avenue where the KRCDD CPP project site is located.

South Bethel Avenue is a collector that extends north and south along the westerly edge of the project site. It extends from north of the City of Sanger to as far south as U.S. 99 south of the City of Selma. South Bethel Avenue has one lane in each direction with six-foot graded shoulders.

8.6.2.4 Roadway Operating Characteristics

The roadway network in the project area includes a hierarchy of streets ranging from State Highways and Freeways providing regional access to the area to local roads providing access to individual properties. In the Selma – Parlier area there are State Highways, (U.S. 99 and SR 43) Expressways (Golden State, Manning, and Mountain View avenues), arterials (including McCall, Mountain View, Floral, and Dinuba avenues), and assorted collector and local roadways. Roadway classifications and their definitions are provided in Table 8.6-1.



Table 8.6-1 General Roadway Classifications and Definitions KRCD CPP	
Freeway	Multiple-lane divided roadways servicing through and cross-town traffic, with no access to abutting property and no at-grade intersections.
Expressway	Four- to six-lane divided roadways primarily servicing through and cross-town traffic, with no direct access to abutting property and at-grade intersections located at approximately half-mile intervals.
Super Arterials	Four- to six-lane divided roadways with a primary purpose of moving traffic to and from major traffic generators and between community plan areas.
Arterials	Four- to six-lane divided roadways, with somewhat limited access to abutting properties, and with the primary purpose of moving traffic between community plan areas and to and from freeways and expressways.
Collectors	Two- to four-lane undivided roadways, with the primary function of connecting local streets and arterials and neighborhood traffic generators and providing access to abutting properties.
Local Streets	Two to three-lane public or private roadways designed to provide direct access to properties while discouraging through traffic.
Source: City of Fresno, 2002	

8.6.2.5 Level of Service/Traffic Characteristics

Existing and future roadway operations have been characterized using a peak hour level of service (LOS) analysis, which provides a standardized means of describing a roadway or intersection’s operations in terms of vehicle delay. Potential LOS range from A to F with LOS A representing the best or free flow conditions and LOS F representing the worst or jammed conditions. A description of the potential LOS for both signalized and unsignalized intersections is provided in Table 8.6-2.

Table 8.6-2 Level of Service Description for Roadway Sections KRCD CPP			
LOS	Description of Operations	Unsignalized Intersection Average Control Delay per Vehicle in Seconds (Highway Capacity Manual) ⁽¹⁾	Signalized Intersection Average Control Delay per Vehicle in Seconds (Highway Capacity Manual) ⁽¹⁾
A	Uncongested operations, little or no delay. Queues clear in a single signal cycle if signalized. Progression is generally very favorable.	≤ 10.00	≤10.00
B	Operations with very light congestion, little or no delay. Drivers begin to feel somewhat restricted	> 10.00 and ≤ 15.00	> 10.00 and ≤ 20.00

Table 8.6-2 Level of Service Description for Roadway Sections KRCD CPP			
LOS	Description of Operations	Unsignalized Intersection Average Control Delay per Vehicle in Seconds (Highway Capacity Manual) ⁽¹⁾	Signalized Intersection Average Control Delay per Vehicle in Seconds (Highway Capacity Manual) ⁽¹⁾
	as vehicles fill occasional cycles if signalized. Queues clear in a single signal cycle.		
C	Stable operations with light congestion, occasional backups on critical approaches. Drivers may have to wait through more than one cycle on heaviest approaches.	> 15.00 and ≤ 25.00	> 20.00 and ≤ 35.00
D	Significant congestion on critical approaches, but intersection remains functional. Drivers required to wait through more than one cycle during short peaks if signalized. No long-standing queues formed.	> 25.00 and ≤ 35.00	> 35.00 and ≤ 55.00
E	Unstable operations with severe congestion and some long standing queues on critical approaches. Blockage of intersection may occur if signalized and traffic signal does not provide for protected turning movements. Traffic queues may block nearby intersection(s) upstream of critical approach(s).	> 35.00 and ≤ 50.00	> 55.00 and ≤ 80.00
F	Considered to be unacceptable to most drivers. Traffic demand generally exceeds capacity of the intersection causing stop-and-go operations with excessive delay.	> 50.00	> 80.00
1. Average vehicle delay through intersection, <i>Highway Capacity Manual, Special Report 209</i> , (Transportation Research Board, 1994 - 2000)			

Existing intersection LOS on roadways potentially accommodating project related traffic are summarized in Table 8.6-3. The LOS presented is based on existing traffic volumes counted in the fall of 2006 and early 2007 (see Figure 8.6-3).



Table 8.6-3 Peak Hour Levels of Service – Existing Conditions KRCD CPP			
Location/ Movement	Peak Hour	Existing Conditions	
		Delay	LOS
Manning/Golden State ⁽¹⁾	AM	22.2	C
	PM	20.9	C
Manning/ McCall ⁽¹⁾	AM	17.5	B
	PM	20.5	D
Manning/ Bethel ⁽²⁾			
Northbound	AM	17.4	C
Southbound		16.3	C
Eastbound Left		8.3	A
Westbound Left		7.8	A
Northbound	PM	18.3	C
Southbound		17.6	C
Eastbound Left		8.1	A
Westbound Left		8.4	A
South Bethel/ Golden State ⁽³⁾	AM	9.5	A
	PM	10.5	B
South Bethel/ Floral ⁽³⁾	AM	9.5	A
	PM	10.1	B
Delay = Average vehicle delay in seconds LOS = Level of Service, <i>Highway Capacity Manual</i> , Transportation Research Board, 2000 Left = Left Turn Maneuver 1) Signalized intersection, delay is average delay for all vehicles entering the intersection. 2) Unsignalized intersection, delay is average vehicle delay for vehicles each approach. 3) All-way stop, delay is average delay for all vehicles entering the intersection.			

Review of Table 8.6-3 indicates most intersections in the project area currently operate well (at a LOS C or better) during typical weekday peak periods. The intersections of Manning Avenue with Golden State Avenue, McCall Avenue, and South Bethel Avenue all currently operate at an LOS C or better during both the morning and evening peak periods, as do the intersections of South Bethel Avenue with Floral Avenue and Golden State Boulevard.

The intersection of South Bethel Avenue and Manning Avenue is currently controlled with stop signs on the north and southbound approaches of South Bethel Avenue. Both of these approaches currently operate at an LOS C during the morning and evening peak periods. However, due to the high volume of through traffic east and westbound on Manning, the

intersection currently is close to meeting a warrant for the installation of traffic signals during the weekday evening peak hour.

8.6.2.6 Rail and Bus Transportation

Regionally, Fresno County has two extensive railroad networks that run north-south. They are operated by Burlington Northern and Santa Fe (BNSF) and Union Pacific Railways (UP). BNSF extends to Sacramento and the San Francisco Bay area to the north and Bakersfield to the south. Union Pacific extends north and south along U.S. 99 linking the area with Sacramento and the Bay Area on the north and Bakersfield to the south.

Amtrak provides intercity rail service from Fresno to Oakland and Bakersfield. The San Joaquin Valley Railroad (SJVR) operates four freight trains at very low speeds along a railway that belongs to UP. The first two trains run from the City of Fresno eastward to Sanger, then southeast to Reedley. The other two operate west from Hanford through Kings County to Huron.

The Fresno County Rural Transit Agency (FCRTA), which was formed in 1979, provides transit services outside the metropolitan area between the hours of 8:00 am and 5:00 pm on weekdays. FCRTA provides intercity services throughout the cities of Kingsburg, Selma, Fowler, Orange Cove, Reedley, Parlier, Sanger corridor and other surrounding communities. The FCRTA also connects to the Fresno Area Express (FAX) system, which provides transit services for the Fresno-Clovis Metropolitan area.

8.6.2.7 Bicycle and Pedestrian Circulation

Currently, there are no bicycle or pedestrian facilities in the immediate project vicinity. However, the Fresno County General Plan shows a planned bikeway path along Manning Avenue, which crosses Academy Avenue and extends to Orange Cove approximately three-quarters of a mile north of the KRCDD CPP project site.

8.6.2.8 Schools/School Bus Routes

The KRCDD CPP project site lies within the Parlier Unified School District (PUSD). However, both the PUSD and Selma Unified School District (SUSD) have buses which circulate through the area on a regular basis. Service typically consists of students being picked up in the morning and dropped off in the afternoon during the school year. Buses from the SUSD follow Dinuba, South Bethel, Manning, South Academy, Huntsman and Floral Avenues in the project area. Similarly, buses from PUSD follow Adams to South Bethel to Huntsman to South Academy, Manning and Lac Jac Avenues. The school bus routes in the area are shown on Figure 8.6-2.

8.6.2.9 Planned Road Improvements

There are a number of roadway improvements planned in the greater project area including potential reconstruction of two interchanges on U.S. 99 and realignment of SR 43 around the City of Selma. The City of Selma is currently working with the California Department of Transportation (Caltrans) to develop an alignment for an SR 43 bypass. This project will include a new northbound off-ramp from U.S. 99 and is intended to divert traffic around the city and away from the Floral Avenue/U.S. 99 interchange. The City of Selma has indicated a Caltrans *Project Study Report* has been completed and construction could occur in the next five to seven years (Hemby, 2007).

The proposed South Selma Pacific Development at the southerly edge of Selma will include reconstruction of the Mountain View Avenue/U.S. 99 interchange. The proposed development site is currently outside the city limits but is expected to be annexed by the city. The City of Selma staff has suggested the interchange improvements may occur sometime in the next ten to twelve years depending upon the developer's schedule.

There are multiple other residential developments under construction, proposed and in the conceptual phases in both the cities of Parlier and Selma, which are discussed further in Section 8.4, Land Use and Agriculture. These projects will all include roadway improvements contiguous or adjacent to project sites as needed to accommodate anticipated levels of traffic, as necessary (Hemby, 2007).

8.6.2.10 Airports/Airport Runways

There are no airports or airport runways in the area of the proposed KRCDD CPP. The closest airport is the Selma Airport located at 7225 Huntsman Avenue approximately one mile west of U.S. 99 or three miles west of the project site.

8.6.3 ENVIRONMENTAL CONSEQUENCES

8.6.3.1 Evaluation Methodology/ Significance Criteria

For purposes of this evaluation, significant impacts will be identified as occurring when the proposed project will:

- Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system;
- Reduce a roadway segment or intersection LOS below acceptable levels, as defined below:



- Fresno County's target for peak hour operations is LOS D or better. The threshold of significance is that a significant project-related impact occurs if the addition of project generated trips causes a facility operating at an LOS D or better, to degrade to LOS E or F.
- The City of Parlier's Circulation Element of the General Plan does not formally state a minimum acceptable LOS with regard to evaluating impacts of a proposed project. It encourages use of a LOS C with an LOS D at major intersections during the PM peak hour. The element also includes an acknowledgement of the potential for the good of a project to override this criteria on select occasions (O'Neil, 2007).
- The City of Selma's Circulation Element of the General Plan does not formally state a minimum acceptable LOS with regard to evaluating impacts of a proposed project. However, a minimum of an LOS D was utilized as the criteria to determine future roadway requirements specified in the City's Circulation Element needed to accommodate long-term growth. This is a commonly used minimum acceptable LOS in urban areas and is considered appropriate for roadway segments within the City of Selma.
- The Fresno County Congestion Management Program (CMP) indicates a significant impact occurs when:
 - A facility currently operating at an LOS E or better degrades to LOS F; or
 - When a proposed project increases traffic demand at a CMP study facility with a 1992 LOS of F by 10 percent (volume to capacity increase $(V/C) > 0.10$), causing or worsening LOS F ($V/C > 1.00$).
- Hazardous materials as defined by the California Vehicle Code are not transported in accordance with all code requirements; and
- Not provide adequate parking and internal circulation capacity to accommodate project traffic such that neighboring areas are adversely affected.

8.6.3.2 Construction Phase Impacts

Construction of the proposed KRCDD CPP will be completed over an approximately 24-month period. The peak construction work force will have approximately 700 people per day during month 13. The overall average for the 24-month period will be approximately 288 people. During construction projects such as this, a large portion of the commuting workforce typically carpools, particularly highly in skilled trades where they may have to commute some distance. Assuming a worst case scenario with an average carpool rate of 1.2 persons per vehicle yields a peak monthly rate of approximately 580 inbound trips during the morning commute and



580 outbound trips during the evening peak hour. Construction of the KRCD CPP is also forecast to generate approximately 15, one-way, truck trips per day with a peak of approximately 50 per day delivering concrete and removing excavated material during foundation construction.

A temporary parking area of approximately six acres will be required for construction personnel to park (assuming 350 square feet per vehicle) with additional area required for the staging of materials and supplies. The KRCD CPP will include a parking and lay down area totaling 15 acres which should more than accommodate project needs with no impact to surrounding areas. It is anticipated that the construction workforce will be drawn from the surrounding local and regional area. Most of the construction traffic is expected to follow U.S. 99 south from Fresno to Manning Avenue east and South Bethel. There will also be some traffic generated from Kingsburg or cities south of the project site. Traffic coming from the south will exit South Bethel Avenue and travel north to the project site. It is estimated that approximately 60 percent of the traffic will be oriented to and from the north on U.S. 99, 20 percent to and from the south on U.S. 99, eight percent to and from the east on Manning Avenue (from Reedley and Parlier), eight percent to and from Selma, and four percent to and from the west on Mountain View Avenue.

Figure 8.6-4 summarizes peak month construction related peak hour traffic volumes on roadways in surrounding area. Table 8.6-4 summarizes forecast intersection LOS that assumes peak levels of construction traffic. The information from Figure 8.6-4 and as shown in Table 8.6-4 was modeled to show existing traffic plus that associated with KRCD CPP construction.

Table 8.6-4 Peak Hour Levels of Service - Construction KRCD CPP					
Location/ Movement	Peak Hour	Scenario			
		Existing		Existing + KRCD CPP Construction	
		Delay	LOS	Delay	LOS
Manning/Golden State ⁽¹⁾	AM	22.2	C	22.2	C
	PM	20.9	C	20.9	C
Manning/McCall ⁽¹⁾	AM	17.5	B	17.4	B
	PM	20.5	D	20.5	D
Manning/ Bethel ⁽¹⁾					
Northbound	AM	17.4	C	22.5	C
Southbound		16.3	C	22.4	C
Eastbound Left		8.3	A	8.3	A
Westbound Left		7.8	A	8.4	A
Northbound	PM	18.3	C	18.3	C ⁽³⁾

Table 8.6-4 Peak Hour Levels of Service - Construction KRCD CPP					
Location/ Movement	Peak Hour	Scenario			
		Existing		Existing + KRCD CPP Construction	
		Delay	LOS	Delay	LOS
Southbound		17.6	C	19.3	C
Eastbound Left		8.1	A	8.1	A
Westbound Left		8.4	A	8.4	A
South Bethel/ Golden State ⁽²⁾	AM	9.5	A	10.6	B
	PM	10.5	B	12.2	B
South Bethel/ Floral ⁽²⁾	AM	9.5	A	11.8	B
	PM	10.1	B	13.8	B
Delay = Average vehicle delay in seconds LOS = Level of Service, <i>Highway Capacity Manual</i> , Transportation Research Board, 2000 Left = Left Turn Maneuver 1) Unsignalized intersection, delay is average vehicle delay for vehicles each approach. 2) All-way stop, delay is average delay for all vehicles entering the intersection. 3) Assumes all outbound traffic oriented to the north on U.S. 99 is directed south on South Bethel to Mountain View and west on Mountain View to U.S. 99.					

Review of the table and comparison to existing conditions without the KRCD CPP indicate construction related increases in traffic are forecast to have a limited impact on traffic operations during the morning peak hour. All intersections are forecast to continue operating at existing LOS except South Bethel Avenue at Golden State Boulevard and Floral Avenue which, while continuing to operate well, are forecast to deteriorate from an LOS A to an LOS B.

During the evening peak hour, all intersections are forecast to continue operating at existing LOS except the intersection of Manning and South Bethel Avenues. The northbound approach of South Bethel Avenue currently operates at an LOS C during the evening peak hour. This is forecast to deteriorate to an LOS F with peak levels of construction traffic if construction traffic oriented to the north on U.S. 99 is directed north on South Bethel Avenue and attempts to make a left turn onto westbound Manning Avenue. To mitigate for this impact, project construction traffic departing the site to northbound U.S. 99 will be directed south on South Bethel Avenue to Mountain View Avenue and then west on Mountain View Avenue to U.S. 99. If outbound construction related traffic oriented north on U.S. 99 is traffic is diverted south to Mountain View Avenue and then west to the highway, the limited volume of project construction traffic oriented east on Manning Avenue will not impact the intersection because it will all be turning right during the evening peak hour. Mitigation is discussed further in Section 8.6.4.1.

Several pieces of equipment, which exceed load or size limits and require special permits for transport on highways, will also be needed for the KRCDD CPP. Oversized equipment includes combustion turbines, generators, heat recovery steam generator modules, and main transformers. These items will likely be shipped by rail to the nearest BNSF railroad siding in Selma and then transported by truck to the KRCDD CPP project site. The equipment will be transported via trucks to the KRCDD CPP project site. The maximum allowable load without a special permit is 80,000 pounds. Transport of this equipment probably will require use of a truck and trailer with multiple axles, advance and trailing warning vehicles, and possibly police control. As described below in Section 8.6.4.1, the moving contractor will be required to file for and obtain a permit from Caltrans and Fresno County following the determination of the size of the truck and configuration of the axles.

Offsite Linear Construction

The KRCDD CPP will include construction of a new overhead electric transmission line, and a water and gas pipeline to support project operations. Typical construction activities associated with constructing the new pipelines will consist of trenching, welding, wrapping and laying the pipe followed by backfilling and repaving of the trenched area. Construction of the gas and water pipelines is not expected to have a significant impact on traffic circulation in the area for several reasons. Traffic impacts will not be significant because surrounding roadways currently operate well below capacity. The majority of construction workers traveling to and from construction sites during the morning and evening peak hours will follow a number of routes in the area where the current days construction activity is to occur, therefore minimizing impacts to any particular segment of roadway. Pipeline construction activities will also typically be located outside the traveled way, particularly when following a roadway alignment. Plating of trenches will be conducted as required to maintain traffic and emergency vehicle access. Where pipelines need to be extended under a major roadway, typical construction practice involves boring and jacking a sleeve under the roadway in which the line is then inserted. The pipelines will be extended by first boring and inserting a sleeve approximately three feet below the surface and then extending the pipeline through the sleeve to avoid trenching across the roadway and disruption of traffic.

Any damage to existing roads associated with construction activities will be repaired or restored to its original condition or as near as possible to its original condition. Additional detail on access, construction staging and construction will be included in the traffic control plan(s) that will be prepared prior to construction.

Construction Impact Summary

Transportation impacts associated with construction of the KRCDD CPP will not be significant for the following reasons:



- The majority of construction workers oriented to the project site in the morning and away from the site in the evening will take one of several routes to the site including Manning and South Bethel avenues. All intersections are forecast to continue operating at existing LOS (LOS C or better) during periods of peak construction activity with upwards of 700 construction worker at the site (month 13) except the intersection of Manning and South Bethel avenues during the evening peak hour. However, this intersection will continue to operate at existing LOS C with mitigation proposed in Section 8.6.4.1.
- Special permit requirements to move oversize or overweight materials and equipment to and from the project site will ensure use of proper vehicles, scheduling, and routes to minimize impacts.
- No bike lanes are currently present in the project area that could be impacted by construction traffic. Where pipelines need to be extended under a major roadway, they will be extended by boring and jacking a sleeve under the roadway in which the line is then inserted. The pipeline will be extended by first boring and inserting a sleeve approximately three feet below the surface and then extending the pipeline through the sleeve to avoid trenching across the roadway and disruption of traffic.

8.6.3.3 Operation and Maintenance Impacts

Vehicular Traffic

Project-Related Traffic

Future KRCDD CPP operations are forecast to generate a negligible amount of vehicular traffic on a daily and peak hour basis. There are an estimated total of 26 employees for the KRCDD CPP including plant management staff (i.e., plant managers, engineers and supervisors), operations staff, maintenance personnel, and secretarial/ clerk support staff. Nine of the plant operating technicians will work in rotating 12 hour shifts (8:00 AM to 8:00 PM) with three operators per shift. The remainder of the personnel will work a typical eight hour a day, five day a week period. Regular weekday employment will be 15 staff personnel plus three operating technicians. Assuming one employee per vehicle, daily peak hour traffic will be three entering plus three departing operating technicians plus 15 daily staff entering during the morning peak hour and 15 departing staff during the weekday evening commute hour. The assignment of project related operations peak hour traffic to the roadway network is shown in Figure 8.6-5.

Year 2010 traffic volumes on surrounding roadways were based upon actual growth for the period from 2002 to 2004 in the City of Selma, which is 3.49 percent. The City of Parlier experienced an average annual growth for the period of Year 2000 to 2005 of 3.38 percent or a rate very similar. The higher rate was utilized to present a worst case estimate which is



summarized in Figure 8.6-6. The traffic forecasts assume continued growth in the area commensurate with recent levels. Review of peak hour LOS forecasts assuming Baseline Year 2010 conditions summarized in Table 8.6-5 and a comparison to existing peak hour LOS will show continued growth in the area is forecast to cause LOS to deteriorate at several locations. Existing traffic operations at the northbound South Bethel Avenue approach at Manning is forecast to deteriorate from LOS C to LOS D during the evening peak hour (still acceptable by county standards). At South Bethel Avenue, Manning Avenue itself will continue to operate at an LOS A/B during the morning and evening peak commute periods.

Location/ Movement	Peak Hour	Scenario			
		Base Year 2010		Year 2010+ KRCD CPP	
		Delay	LOS	Delay	LOS
Manning/Golden State ⁽¹⁾	AM	25.4	C	25.4	C
	PM	23.9	C	23.9	C
Manning/ McCall ⁽¹⁾	AM	18.6	B	18.7	B
	PM	32.8	C	33.9	C
Manning/ Bethel ⁽²⁾					
Northbound	AM	18.1	C	18.6	C
Southbound		18.8	C	19.2	C
Eastbound Left		8.6	A	8.6	A
Westbound Left		8.0	A	8.0	A
Northbound	PM	28.3	D	30.3	D
Southbound		24.3	C	24.3	C
Eastbound Left		8.3	A	8.3	A
Westbound Left		8.7	A	8.7	A
South Bethel/ Golden State ⁽³⁾	AM	10.2	B	10.2	B
	PM	11.3	B	11.5	B
South Bethel/ Floral ⁽³⁾	AM	9.6	A	9.6	A
	PM	10.4	B	10.4	B
Source: Base Year 2010 data is based on existing 2007 traffic counts expanded at a rate of 3.49% per year for three years, which is reflective if the annual growth rate experienced in the area between the years of 2002 and 2004 for the City of Selma. Delay = Average vehicle delay in seconds LOS = Level of Service, <i>Highway Capacity Manual</i> , Transportation Research Board, 2000 Left = Left Turn Maneuver 1) Signalized intersection, delay is average delay for all vehicles entering the intersection 2) Unsignalized intersection, delay is average vehicle delay for vehicles each approach 3) All-way stop, delay is average delay for all vehicles entering the intersection					

Continued review of Table 8.6-5 will indicate future ongoing facility operations will not alter existing intersection LOS and as a result, will not have a significant impact on roadway operations. Four of the five intersections in Table 8.6-3 are forecast to continue operating well in Year 2010 when the proposed project could be operational. However, existing LOS on the South Bethel Avenue approaches at Manning Avenue are forecast to deteriorate to an LOS D during the evening peak period by 2010 regardless of the project, primarily due to increases in through traffic on Manning Avenue.

Truck Traffic

During KRCDD CPP operations, trucks will periodically deliver/pickup replacement parts, lubricants, aqueous ammonia, carbon dioxide, hydrogen, sulfuric acid, sodium hydroxide, trash, and other consumables. Estimates of truck traffic that will be generated by the proposed project are summarized in Table 8.6-6. Review of the table shows that regular operation of the KRCDD CPP is expected to generate approximately 38 truck trips per month, or about two per day. Aqueous ammonia and acids are considered potential inhalation hazardous (i.e., represent transport of hazardous materials) and will account for approximately 15 truck trips per month.

According to Division 13, Section 31303, of the State of California Vehicle Code, the transportation of hazardous materials will be on state or interstate highways that offer the shortest overall transit time possible (Department of Motor Vehicles, 2000). The California Highway Patrol has approved U.S. 99 as a roadway used in the transportation of inhalation related hazardous materials (Cantierier, 2006). Division 14.3, Section 32105 of the Vehicle Code specifies that unless there is no alternative route, every driver of a vehicle transporting inhalation hazards shall avoid, by prearrangement of routes, driving into or through heavily populated areas, congested thoroughfares, or places where crowds are assembled. The vehicle code also requires that shippers of inhalation or explosive materials must make available in each vehicle the latest maps showing approved routes, safe stopping places and inspection stops for vehicles transporting inhalation hazards. The carrier shall require the driver to be thoroughly familiar with this division of the vehicle code prior to operating any vehicle in the transportation of inhalation hazards. Operating convenience is not a consideration. The KRCDD will comply with the requirements of the above-mentioned code. The anticipated route for the delivery of hazardous materials to the site will involve U.S. 99, Manning Avenue, and South Bethel Avenue.



Delivery Type	Quantity	Number of Trucks
Aqueous Ammonia (29 percent by weight)	8,000 gallons	4 per month
Diesel Fuel	55 gallons	2 per year
Sodium Hypochlorite	4,100 gallons	1 per month
Sulfuric Acid (93 Percent)	6,000 gallons	1 per month
Cleaning Chemicals	55 gallons	1 per month
Sodium Hydroxide	400 gallons	1 per month
Water Treatment Chemicals	5-400 gallons	3 per week
Zero Liquid Discharge (ZLD) non-hazardous solid waste	4000 gallons	5 per week
Trash Pickup	10 cubic yard	1 per week
Lubricating Oil	55 gallons	4 per year
Lubricating Oil Filters	55 gallons	4 per year
Oil Rags	55 gallons	4 per year
Oil absorbents	55 gallons	4 per year
Light Petroleum Distillates (solvent)	50 gallons	6 per year
Acetylene	25 pounds	4 per year
Waste oils	55 gallons	4 per year
Total		596 per year

Operations Impact Summary

Transportation impacts associated with operation of the KRCDD CPP will not be significant for the following reasons:

- The project will generate approximately 52-employee commute trips per day (26-round trips) spread over a 24-hour period. The addition of this traffic to the existing roadway network will not alter existing or future roadway operating characteristics (LOS);
- Deliveries and visits by tradespersons, vendors and other non-plant personnel will be minimal and will typically occur during non-peak periods;
- As indicated in Table 8.6-3, surrounding roadways generally operate below capacity and addition of project operational traffic will not alter this;
- Project design will not impact the ability to provide bike lanes in the future and project traffic levels will not impact use of those lanes; and
- All deliveries of hazardous materials will be in conformance with the state and federal requirements.



8.6.3.4 Cumulative Impacts

Year 2010 Baseline Conditions

Base Year 2010 traffic volumes on surrounding roadways were estimated using an average annual growth rate of 3.49 percent. The rate is based upon actual growth for the period from 2002 to 2004 in the City of Selma. The City of Parlier experienced an average annual growth for the period of Year 200 to 2005 of 3.38 percent or a rate very similar. The higher rate was utilized to present a worst case estimate. Estimated traffic volumes are summarized in Figure 8.6-3. The traffic forecasts assume continued growth in the area commensurate with recent levels. Review of peak hour LOS forecasts assuming Baseline Year 2010 conditions summarized in Table 8.6-5 and comparison to existing peak hour LOS will show continued growth in the area is forecast to cause LOS to deteriorate at several locations. Existing traffic operations on the South Bethel Avenue approaches at the intersection of Manning and South Bethel avenues are forecast to deteriorate to an LOS F during the evening peak hour. At South Bethel, Manning itself will continue to operate at an LOS A/B during the morning and evening peak commute periods.

Year 2010 Baseline Plus Project Conditions

Review of peak hour LOS forecasts assuming Baseline Year 2010 Plus KRCD CPP conditions summarized in Table 8.6-5 and comparison to Baseline peak hour LOS will show future project operations are forecast to not alter baseline conditions. Project operations traffic is so limited and dispersed over a number of roadways to the extent it will not have a significant impact on roadway conditions. Currently there are a number of large scale projects proposed in the greater Parlier/Selma area but actual construction rates are forecast to remain in the range of 3.5 percent per year (Hemby, 2007, O'Neil, 2007).

8.6.4 PROPOSED MITIGATION MEASURES

The following discussion presents mitigation measures that would be implemented during KRCD CPP construction and O&M phases to mitigate potential impacts to traffic and transportation facilities in the KRCD CPP project area.

8.6.4.1 Construction Phase

- The construction contractor will notify the Public Works Department of Fresno County and Caltrans prior to beginning construction in order to schedule and coordinate the timing of delivery of all heavy equipment and materials as directed by the county Engineer and Caltrans.
- The contractor will obtain Construction Excavation Permits from applicable jurisdictions including Fresno County, Tulare County, and the Cities of Sanger and Parlier or



Encroachment Permits from Caltrans as applicable for all work completed within the public right-of-way.

- The intersection of Bethel and Manning is forecast to deteriorate to an LOS F with peak levels of construction traffic if construction traffic oriented to the north on U.S. 99 is directed north on Bethel and attempts to make a left turn onto westbound Manning. To mitigate for this potential impact, project construction traffic departing the site to northbound U.S. 99 will be directed south on South Bethel Avenue to Mountain View Avenue and then west on Mountain View Avenue to U.S. 99. If outbound construction related traffic oriented north on U.S. 99 is traffic is diverted south to Mountain View Avenue and then west to the highway, the limited volume of project construction traffic oriented east on Manning Avenue will not impact the intersection because it will all be turning right during the evening peak hour. The intersection of Manning Avenue at both Golden State Boulevard and McCall Avenue will also continue to operate at an LOS C during the evening peak hour with outbound construction traffic following westbound Manning Avenue to northbound U.S. 99.
- No construction traffic leaving the project site will be directed down Dinuba Avenue in the area of Indianola Elementary School (located at 11524 East Dinuba Avenue).
- All proposed construction traffic routes will be implemented in accordance with a traffic control plan to be prepared and submitted for review prior to construction.

8.6.4.2 Operation Phase

- Deliveries of hazardous materials to the site and offsite shipments of hazardous wastes will adhere to all applicable laws and regulations regarding the transport of such materials/ wastes. To the extent practical, deliveries of hazardous materials to the KRCD CPP project site, and offsite shipments of hazardous wastes will occur during off-peak traffic periods.

8.6.5 LAWS, ORDINANCES, REGULATIONS, AND STANDARDS COMPLIANCE

The proposed KRCD CPP will meet or exceed all applicable LORS pertaining to traffic and transportation. The following sections summarize applicable LORS and compliance with respect to traffic and transportation. The applicable LORS are also summarized in Table 8.6-7, which lists federal, state, and local LORS that apply to traffic and transportation. Additional information concerning LORS is presented below.



Table 8.6-7 Traffic and Transportation LORS KRCD Project		
Regulatory Authority/	Applicability	Conformance Subsection
Federal		
Title 49, Code of Federal Regulations (CFR), Subtitle B, Parts 171-173, 177-178, 350-359, and appendices A-G	Addresses safety considerations for the transport of goods, materials and substances. Governs the transportation of hazardous materials including types of materials and the marking of the transportation vehicles.	See Section 8.6.3.
State		
California Vehicle Code Section 35780; California Streets and Highways Code, Sections 660-711; 21 CCR 1411.1-1411.6	Requires permits for any load exceeding Caltrans weight, length, or width standards for public roadways.	See Section 8.6.3.
California Streets and Highways Code, Sections 117-660-711	Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery.	See Section 8.6.3.
California Vehicle Code Section 31300, 31303 et seq.	Requires that the transportation of hazardous materials be on state or interstate highways that offer the shortest overall transit time possible.	See Section 8.6.3.
California Vehicle Code Section 32105	Requires shippers of inhalation hazard or explosive materials must contact the California Highway Patrol to apply for a Hazardous Material Transportation License and obtain routes approve for Material shipping.	See Section 8.6.3.
Local		
Fresno County Transportation and Circulation Element of The County General Plan	Specifies long-term planning goals and procedures for transportation infrastructure system quality in the County of Fresno.	See Section 8.6.3.
Fresno County Rural Transit Agency (FCRTA)	Provides rural transit service to the unincorporated portion of Fresno County that lie outside the Fresno-Clovis Metropolitan Area FCMA.	See Section 8.6.2.
Fresno County Bikeway Master Plan	To plan and provide a safe, continuous and easily accessible bikeway system that facilitates the use of the bicycle as a viable alternative transportation mode and as a form of recreation and exercise.	See Section 8.6.2.



8.6.5.1 Federal

Federal laws and regulations that could apply to the KRCD CPP include the following:

- Title 49 CFR, Subtitle B, Chapter I, Part 172, Hazardous Materials Regulations, addressing the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles;
- Title 49 CFR, Subtitle B, Chapter I; Parts 171-173; and 177-178, containing national safety standards for the transportation of goods, materials and substances over public highways. Requires proper handling and storage of hazardous material during transportation;
- Title 49 CFR, Subtitle B, Chapter III, Parts 350-399 Motor Carrier Safety Regulations, addressing safety considerations for the transport of goods, materials, and substances over public highways; and
- Hazardous Materials Transportation Act of 1974; Title 49 CFR Subtitle B, Chapter III, and Part 397.9 directing the Federal Department of Transportation to establish criteria and regulation for the safe interstate transportation of hazardous materials.

8.6.5.2 State

State laws that could apply to the KRCD CPP include the following:

- California Vehicle Code Division 1, section 353 defining hazardous materials;
- California Vehicle Code Division 13, Chapter 5, Article 1 Hazardous Materials, sections 31303 et seq. addressing the transportation of hazardous materials, the routes used, and restrictions thereon;
- California Vehicle Code Division 14, Transportation of Explosives, sections 31600-31309 regulating the transportation of explosive materials;
- California Vehicle Code Division 14.1, Transportation of Hazardous Materials, sections 32000-32053 regulating the licensing of carriers of hazardous materials including noticing requirements;
- California Vehicle Code Division 14.3, sections 32100-32109 establishing special requirements for the transportation of inhalation hazards and poisonous gases;
- California Vehicle Code Division 14.7, Flammable and Combustible Liquids, sections 34000 et seq. addressing the transportation of flammable and combustible liquids over public roads and highways;



- California Vehicle Code Division 14.8, Safety Regulations, sections 34500, 34501, 34501.3, 34502-7, and 34510-11 addressing the operation of vehicles, including those which are used for the transportation of hazardous materials including explosives;
- California Vehicle Code Division 2 Administration, Chapter 2.5, Article 1, sections 2500-2505 and 2531-2532 addressing the issuance of licenses by the Commissioner of the California Highway Patrol for the transportation of hazardous materials including explosives;
- California Vehicle Code Division 6 Driver's Licenses, Division 6, Chapter 1, Article 3 sections 12804-12804.5; Chapter 2, Article 3, section 13369; and Chapter 7 Article 6, sections 15275-15278 addressing the licensing of drivers and the classification of licenses required for the operation of particular types of vehicles. In addition, it requires the possession of certificates permitting the operations of vehicles transporting hazardous materials;
- California Vehicle Code Division 15 Size, Weight, and Load, Chapter 5, Article 6 section 35780; stating that overload approvals from the State Department of Transportation are required for transportation of oversized or excessive loads over state highways;
- California Streets and Highways Code section 117, 660-711 requiring an encroachment permit from Caltrans for facilities that require construction, maintenance, or repairs on or across state highways; and
- California Streets and Highways Code section 660, 670, 1450, and 1460 et seq. regulating right-of-way encroachment and the granting of permits for encroachment on state and country roads.

8.6.5.3 Local

Local standards that could apply to this project include the following:

County of Fresno General Plan

- **Goal TR-A** - To plan and provide a unified, coordinated, and cost-efficient countywide street and highway system that ensures the safe, orderly, and efficient movement of people and goods.
- **Policy TR-A.1** - The county shall plan and construct County-maintained streets and roads according to the County's Roadway Design Standards. Roadway design standards for County-maintained roads shall be based on the American Association of State Highway and Transportation Officials (AASHTO) standards, and supplemented by Caltrans design standards and by County Public Works Department Standards.



- **Policy TR-A.2** - The county shall plan and design its roadway system in a manner that strives to meet LOS D on urban roadways within the spheres of influence of the cities of Fresno and Clovis and LOS C on all other roadways in the county.
- **Policy TR-A.3** - The county shall require that new or modified access to property abutting a roadway and to intersecting roads conform to access specifications in the Circulation Diagram and Standards section.
- **Policy TR-A.14** - The county shall work with the cities of Fresno County in establishing a system of designated truck routes through urban areas.

8.6.6 INVOLVED AGENCIES AND CONTACTS

Table 8.6-8 identifies agency contacts for the KRCD CPP.

Table 8.6-8 Agency Contacts KRCD CPP			
Issue	Contact	Title	Telephone
Construction Encroachment Permit for work in county Roadways	Darren Finley County of Fresno Building Permit Department 2220 Tulare Street Fresno, CA 93728	Encroachment Inspector	(559) 262-4107
Construction Encroachment Permit for work in county Roadways (for gas pipeline)	Jeff Mellow County of Tulare Resource Management Agency 5961 South Mooney Boulevard Visalia, CA 93277	Encroachment Permits	(559) 733-6653, Extension 4391
Permits for Oversize Loads on State Highways	Caltrans, District 6 1352 West Olive Ave. Fresno, CA 93728	Permit Writer	(916) 322-1297
Permits for Oversize Loads on City of Selma Streets	Tesla Nason Public Works Department City of Selma 1710 Tucker Street Selma, Ca 93662	Clerk	(559) 891-2215
Construction Encroachment Permit for work in City of Sanger Streets)	Ralph Kachadourian, City of Sanger 1700 7 th Street Sanger, CA 93657-6513	Senior Planner,	(559) 876-6300 Extension 1540



Table 8.6-8 Agency Contacts KRCD CPP			
Issue	Contact	Title	Telephone
Permits for Oversize Loads and Encroachment Permits for work in City of Parlier Streets	Bertha Augustine Public Works Department City of Parlier 1100 East Parlier Avenue Parlier, CA93648	Clerk	(559) 646-3545
Licenses for Transport of Hazardous Materials and wastes	California Department Of Motor Vehicles 655 W. Olive Ave. Fresno, CA 93728	Clerk	(800) 777-0133
Approved Routes for Transport of Hazardous Materials and Wastes	Dan Cartier California Highway Patrol, Motor Carrier Division 1352 W. Olive Box 10 Fresno, CA 93728	Motor Carrier Specialist	(559) 445-6100

8.6.7 REQUIRED PERMITS AND PERMITTING SCHEDULES

Table 8.6-9 identifies the required permits and permit schedule for the KRCD CPP.

Table 8.6-9 Permits Required and Permit Schedule KRCD CPP	
Permit/Approval Required	Due Date
County of Fresno Encroachment Permit (for work in County’s rights-of-way)	Submit plans showing work 90 days prior to construction work in public right-of-way.
County of Tulare Encroachment Permit (for work in County’s rights-of-way associated with the proposed natural gas pipeline)	Submit plans showing work 90 days prior to construction work in public right-of-way.
City of Sanger Encroachment Permit (for work in City’s rights-of-way associated with the proposed water supply pipelines)	Submit plans showing work 90 days prior to construction work in public right-of-way.
City of Parlier Encroachment Permit for work in City’s rights-of-way associated with the proposed water supply, and natural gas pipelines)	Submit plans showing work 90 days prior to construction work in public right-of-way.
County of Fresno Oversize Load Permit	Apply at least two working days prior to oversize load on City roadways.
Caltrans Oversize Load Permit.	Apply at least seven working days prior to oversize load on State highways.



8.6.8 REFERENCES

Caltrans. 1996. Traffic Manual.

Caltrans. 2005. Traffic Volumes on California. State Highways.

Cartier, Dan, California Highway Patrol. Personal Communication, Roberto Orellana November 6, 2006.

City of Fresno. 2002. 2025 Fresno General Plan and related Draft Environmental Impact Report Number 10130. Planning and Development Department Advance Planning. February 1, 2002.

Connor, Brett, DPW County of Fresno, Personal Communication, Roberto Orellana November 6, 2006.

Department of Motor Vehicles. 2000. State of California Vehicle Code. Division 13 Section 31303. Available at: <http://www.dmv.ca.gov/pubs/vctop/vc/vc.htm>.

Finley, Darren, DPW County of Fresno, Personal Communication, Roberto Orellana November 6, 2006.

Fresno County General Plan. 2000 Transportation and Circulation Element.

Girsh, Gary, Contract City Engineer, City of Parlier, Personal Communication, John Wilson, March 5, 2007.

Hemby, Bryant, Planner, City of Selma, Personal Communication, John Wilson, March 2, 2007.

Hutchinson, Wally, TPG Consulting. Personal communication, John Wilson November 2, 2006.

Nason, Tesla, Department of Public Works, City of Selma, Personal Communication, John Wilson, March 5, 2007.

O'Neil, Bruce, Contract Planner, City of Parlier, Personal Communication, John Wilson, March 5, 2007.

Smith, Wade, Selma Unified School District, Written Communication, March 6, 2007.



Transportation Research Board, 1994, 1997, 2000. Highway Capacity Manual, Special Report 209, Washington D.C.

