

- TRAFFIC AND TRANSPORTATION
(SECTION 5.11 FROM 99-AFC-7)

5.11 TRAFFIC AND TRANSPORTATION

This section addresses potential impacts associated with traffic and transportation systems in the project area which may result from construction and operation of the Pastoria Energy Facility project. The analysis considers the regional and local roadways and railroads, current and project-related traffic conditions, access to the project site, construction and operation-related parking requirements, and transportation of hazardous materials related to operation of the plant. It also provides an assessment of potential impacts resulting from the construction and maintenance of the transmission line, make-up water supply line, wastewater discharge line, and fuel gas supply lines.

Section 5.11.1 describes the environmental setting of the project area and presents the existing conditions of the transportation system; Section 5.11.2 assesses the potential environmental impacts of construction and subsequent operation of the project on traffic and the existing transportation system; Section 5.11.3 presents the mitigation measures proposed to minimize the potential impacts of the project; and Section 5.11.4 addresses pertinent laws, ordinances, regulations, and standards. References are presented in Section 5.11.5.

5.11.1 Affected Environment

5.11.1.1 Regional Setting

The affected environment relative to the generating project is discussed in both a regional and local context. The regional setting includes the existing and planned public and private roads, rail lines, and pipelines considered in the transportation impact analysis. Figure 5.11-1 (Regional Transportation Setting) depicts the affected environment as discussed below and illustrates the relationship of proposed project facilities to major roads, potential access roads, and highways in the project area. Map 3.2-1 (Location of Pastoria Energy Facility Project Components) shows the locations of existing transmission lines within 1 mile of the Pastoria Energy Facility project components.

The following plans and programs describe the framework for managing the transportation resources in the project area.

Regional Transportation Plan. The Kern Council of Governments (COG) has prepared a Regional Transportation Plan (RTP) establishing regional transportation goals, policies, objectives, and actions for various modes of transportation. The RTP is a long-range (20-year) plan assessing environmental impacts of proposed projects, establishing air quality conformity as required by federal regulations, and discussing intermodal and multimodal

transportation activities. The Kern COG adopted an updated RTP in September, 1998 (Kern COG, 1999).

Transportation Improvement Program. The Kern COG is required by federal law to develop and publish a Transportation Improvement Program (TIP) at least every two years. The TIP is a short-range (7-year) program which incrementally implements the RTP. The TIP is comprised of project lists from the State Transportation Improvement Program (STIP) for urbanized and non-urbanized areas, as well as other programs using state and/or federal funding. The current 1998 Federal Transportation Improvement Program (1998 FTIP) was approved by the Kern COG on September 17, 1998. Federal approval was received October 9, 1998 for the 1998 State Transportation Improvement Program/Kern COG 1998 FTIP (Kern COG, 1999).

Congestion Management Plan. The Kern COG also has prepared a Congestion Management Plan (CMP) to ensure that a balanced transportation system is developed relative to population and traffic growth, land use decisions, level of service (LOS) performance standards, and air quality improvement. The CMP is intended to be an integral and complementary part of Kern County's plans and programs, and must be updated every two years. The current CMP was adopted by the Kern COG in 1998.

Kern County General Plan Circulation Element. The Circulation Element of the Kern County General Plan establishes local goals and guidance policies regarding building and transportation improvements. It introduces planning tools essential for achieving the local transportation goals and policies (Kern County, 1992). Relevant goals and policies include, in part, the following:

Private Development Access to Existing Roadway Network

- As a condition of private development approval, developers shall build roads needed to access the existing road network (Policy No. 1).

Growth Beyond 2010

- The County should monitor traffic volumes and patterns on County major highways (Policy No. 1).
- Development applications must demonstrate that sufficient transportation capacity is available to serve the proposed project at LOS "D" or better.

Trucks on Highways

- Make Caltrans aware of heavy truck activity on Kern County's roads (Policy No. 1).
- Start a program that monitors truck traffic operations (Policy No. 2).
- Promote a monitoring program of truck traffic operations (Policy No. 2).

Airport Land Use Compatibility

- Review land use designations and zoning near airports for compatibility (Policy No. 1).
- Allow only land use development applications that are appropriate for airport environs (Policy No. 2).

Truck Routes

- The Transportation Management Department should oversee truck travel patterns and be aware of locations where heavy trucks traverse residential areas (Policy No. 1).

Transportation of Hazardous Materials

- State-maintained highways are acceptable as commercial hazardous waste transportation routes (Policy No. 1).
- Kern County and affected cities should reduce use of County-maintained roads and city-maintained streets for transportation of hazardous materials (Policy No. 3).
- Restart commercial transportation of hazardous materials in accordance with Vehicle Code § 31303 (Policy No. 4).

Damaged Road Pavement

- Continue to maintain pavement conditions and check operating conditions by collection and review of traffic flow and accident data to rate the circulation system (Policy No. 1).

Central California Aviation System Plan. The Kern COG is participating with the Caltrans Aeronautics Program and 10 other county transportation agencies in California to prepare the Central California Aviation System Plan (CCASP). The Kern COG product resulting from this effort has been formatted as the Kern Regional Aviation System Plan, and has been

distributed to various airport operators in the County for review and comment. The plan was approved by Kern COG in September, 1999 (Kern COG, 1999).

5.11.1.1.1 Highways and Roadways. As the third largest county in the State of California, Kern County has an extensive transportation network of approximately 6,700 miles of public roads servicing an 8,000 square mile region (Kern COG, 1999). Kern County serves as a major transportation corridor between northern and southern California, with Interstate 5 (I-5) and State Highway 99 being the primary routes for north-south travel. The County's economy is based on farming, petroleum, and mining industries, functioning primarily as an export economy. Therefore, interstate and intrastate transportation is vital to the economy of Kern County.

As illustrated on Figure 5.11-1, the project area is primarily served by: I-5 and Highways 33 and 99, which are generally four-lane divided highways (oriented north/south); and Highways 58, 223, and 166, which are two-lane highways (oriented east/west). All of these highways are under the jurisdiction of the California Department of Transportation (Caltrans). Information regarding existing traffic volumes, truck traffic, capacity, and Level of Service (LOS) on these highways is discussed in detail in Section 5.11.1.2.

5.11.1.1.2 Railroads. The Burlington-Northern & Santa Fe (BN&SF) and Union Pacific Railroads provide rail service to the Bakersfield area. There are four rail line corridors within the region surrounding the project. These rail-lines are shown on Figure 5.11-1 and include: 1) the BN&SF Railroad main line, 2) the Union Pacific main line, 3) the Arvin Branch line, and 4) the BN&SF Sunset Branch line currently operated by Union Pacific Railroad.

The BN&SF Railroad line, located to the northwest of the project area, runs from Bakersfield northwest to Highway 43, where it continues north and parallel along Highway 43 through the Central Valley.

The Union Pacific Railroad line, also located northwest of the project area, runs parallel along Highway 58 westerly into Bakersfield, then proceeds north, parallel along Highway 99, until it branches in two at about Highway 46.

The BN&SF Union Pacific Railroad line is located north of the site, runs parallel along Highway 99, and southerly paralleling Highway 184 to DiGiorgio.

The Arvin Branch is owned by the San Joaquin Railroad Company. This line runs out of Algoto, Bakersfield, turning south, then east (parallel to DiGiorgio Road) and then south again (parallel to Derby Street) and continuing to the Arvin Branch Station in the town of Arvin, approximately 16 miles directly southeast of Bakersfield. This route winds through

May Fair, Fuller Acres, Lamont, and DiGiorgio to Arvin. These rail lines are currently used to transport food, agricultural and consumer products, forest products, ferrous ores and nonferrous metals, coal, construction material, minerals, machinery, chemicals, plastic and petroleum products, and automotive equipment. The Arvin Branch line is most active from May to July when the line is used regularly by farmers and agricultural groups, such as Porter Farms, for the daily transport of their crops during the harvest season.

The Sunset Railway (an inter-County rail line) also departs from Bakersfield in a southwesterly direction. It branches off from the Union Pacific Buttonwillow Branch at Gosford and terminates at Levee Station, about 1 mile south of the southeast corner of Buena Vista Lake Bed, at South Lake Road between the towns of Conners and Pentland. The Sunset Branch which formerly terminated at the City of Taft now is completely defunct between Levee Station and Taft, a distance of approximately 15 miles. In the interest of preserving the right of way, the Kern COG completed an inventory along the Sunset Branch and determined that the line is in very poor condition. The entire line from Levee Station to Taft is unsuitable for use and has been embargoed. Use of the Sunset Branch would require a substantial investment (estimated at \$500,000 per mile) in refurbishing the rail (Beardslee, 1998).

5.11.1.1.3 Pipelines. A large and extensive network of pipelines in the region is owned and operated by private oil companies to transport petroleum products and crude oil from the western portion of the County to locations throughout California. More oil and petroleum products are produced in Kern County than in any other region in the continental United States.

5.11.1.2 Pastoria Energy Facility

The generating plant site is located on a 30-acre parcel of undeveloped land owned by the Tejon Ranch located in southern Kern County, approximately 30 miles south of Bakersfield, California, and about 6.5 miles east of I-5 and Grapevine, CA. The transportation setting of the plant site within the surrounding region is depicted on Figure 5.11-1. Figure 5.11-2 (Local Transportation Setting) illustrates the major roads, potential access roads, and highways in the immediate vicinity of the proposed plant site.

Access to the generating plant site from any direction will occur from I-5 at the Edmonston Pump Plant Road (a private 2-lane road) via a new plant access road that will be constructed with the project. The proposed plant access road is approximately 0.85 mile long. The plant's administration and control building parking lot and the road encircling the power blocks will be asphalt paved. Other roads on the plant site will be gravel or crushed stone.

Table 5.11-1 presents data pertaining to the existing traffic characteristics on highways potentially affected by the proposed project, including:

- Interstate 5, from Mt. Pinos Road to Highway 46
- Highway 33, from Highway 166 to Highway 119
- Highway 43, from Interstate 5 to Highway 46
- Highway 58, from Highway 223 to Highway 202
- Highway 99, from Interstate 5 to Highway 155
- Highway 166, from Highway 33 (near Taft) to Highway 99
- Highway 223, from Interstate 5 to Highway 58.

The information provided in Table 5.11-1 includes the annual average daily traffic (AADT), annual average peak hour traffic, and annual average daily truck traffic, highway capacity, and Level of Service (LOS), respectively.

The LOS criteria for highways is established by Caltrans, and takes into account numerous variables such as AADT, capacity, grade, environment (urban or rural), and other considerations as appropriate. According to Caltrans policy, LOS D is acceptable for planning purposes, while LOS E and F are considered unacceptable. LOS criteria for local roadway intersections, shown below, are defined by the Kern County General Plan Circulation Element (Kern County, 1992). These LOS criteria are different than those established by Caltrans for highways; however, LOS D remains acceptable for planning purposes, while LOS E and F are considered unacceptable.

LEVELS OF SERVICE

LOS	Description	Average Vehicle/ Capacity Ratio
A	Free flow; insignificant delays	0.0 - 0.59
B	Stable operation; minimal delays	0.6 - 0.69
C	Stable operation; acceptable delays	0.7 - 0.79
D	Approaching unstable; queues develop rapidly but no excessive delays	0.8 - 0.89
E	Unstable operation; significant delays	0.9 - 0.99
F	Forced flow; jammed conditions	N/A

All of the highways potentially affected by the proposed project are currently operating at or better than LOS D. Thus, all of the highways in the project area are operating at acceptable levels. As shown in Table 5.11-1, Interstate 5 generally operates at LOS C; portions of Interstate 5 nearest the project site (near Highway 99) operate at LOS A, and drop to LOS D

at the Los Angeles/Kern County Line. Highway 33 generally operates at LOS D near Highway 119 and improves to LOS C near Highway 166. The LOS on Highway 43 varies along the route from LOS A to LOS C near Highway 166. The LOS on Highway 43 varies along the route from LOS A to LOS C. Highway 58 operates at LOS B along its entire course through the project area. From its origin at the junction of I-5, Highway 99 operates at LOS B until the junction of Highway 58-East, where it drops to LOS C, and varies from the junction of Highway 58-West from LOS D to LOS B at the junction of Highway 155. The LOS on Highway 166 varies from LOS B to LOS C. Highway 223 operates at LOS A near the junction of I-5 and drops to LOS B at the junction of Highway 58.

Truck traffic on highways serving the project area is heavy due to local agricultural and oil-related industries. As shown in Table 5.11-1, truck traffic (as a percent of total traffic) in the project area is heaviest along Interstate 5 and Highway 58, ranging from 21 to 37 percent of the total traffic on those highways. Truck traffic is lightest on Highway 43, ranging from 9 to 26 percent.

Access to the generating plant site from any direction will occur from Highway 5 at Edmonston Pump Plant Road (a private 2-lane road) via a new plant access road that will be constructed with the project. There are no other roads in the area that would provide access to the plant site. Because Edmonston Pump Plant Road is a private road, traffic data is not available from the Kern County Roads Department (Hayslett, 1999) and has been established based on field observations. Table 5.11-2 summarizes the existing conditions of Edmonston Pump Plant Road and identifies the roadway classification, AADT, capacity, and LOS. Since LOS data was not available from Kern County, it was calculated by dividing the volume of traffic (AADT) by the capacity, a standard acceptable practice as presented in the Kern County General Plan Circulation Element (Kern County, 1992).

Although traffic counts specifically for trucks are not available for this Edmonston Pump Plant Road, traffic in the project vicinity is generally characterized by a large ratio of trucks to cars due to its use as an access to an adjacent gravel mining operation. Based on field observations, it is assumed that 50 percent of the traffic along Edmonston Pump Plant Road is truck traffic. LOS on this road serving the project site is considered free-flowing (LOS A).

There are currently no new County roads planned within the vicinity of the project. Long-range improvements planned for the regional transportation system in and around Bakersfield include the following (Kern COG, 1999):

- **Route 58 - Kern River Freeway**. This project would construct a six-lane freeway from Highway 99 to Renfro Road, with future extension of a four-lane freeway from Renfro

Road to I-5. Funding has been allocated for the project and construction is set to begin in 2004.

- **Centennial Transportation Corridor**. This project would consist of a multimodal transportation corridor through the metropolitan Bakersfield area, and would close the gaps in Routes 58 and 178. No funding has been set aside. Construction is anticipated to begin after 2015.
- **South Beltway**. This project would establish a transportation corridor connecting Route 58 south and east of the metropolitan Bakersfield area to Highway 99, and south and west of Bakersfield to I-5. The City of Bakersfield and Kern County are currently evaluating alternative route alignments. The 1996 Regional TIP identifies partial funding for the project over the next 20 years. No state or federal funds have yet been committed. It is anticipated that construction would begin after 2020.
- **State Route 223**. This project would widen State Route 223 to four lanes on the existing alignment near Arvin. Caltrans plans to begin project assessment and environmental studies in December of 1999. It is anticipated that the construction could begin by mid-late 2000. Construction of SR-223 has the potential to occur concurrently with construction of the Pastoria Energy Facility project, which is scheduled to begin in 2001.

5.11.1.3 Transmission Line Route (Route 1)

The transportation setting along the transmission line route (Route 1) is characterized by I-5, Highway 99, existing oil field roads, existing transmission line rights of way, access trails constructed for the SCE Pastoria – Magunden transmission line, and Edmonston Pump Plant Road. The geographic area of concern relative to the transmission line route corresponds primarily to the transportation network existing along the route. These are areas where access to towers may occur both during construction and operation of the transmission line.

The transmission line route begins at MP 0.0 and continues to the Pastoria Substation at Route 1 MP 1.38. The transmission line route crosses Edmonston Pump Plant Road at MP 1.0 – MP 1.1 (See Map 3.2-1).

5.11.1.4 Water Supply Line (Route 2)

The proposed water supply line will originate at the project site (MP 0.0) and travel 300 feet to the west (MP 0.05). A new pipeline from the site will connect to the Wheeler Ridge-Maricopa Water Storage District's proposed 54-inch diameter water main west of the site. The pipeline will be buried underground.

5.11.1.5 Fuel Gas Supply Line (Route 3, Route 3A, and Route 3B)

Natural gas will be used as fuel for the proposed project. Fuel will be delivered via a new underground pipeline that will tie into an existing interstate gas pipeline jointly owned by the Kern River Gas Company and the Mojave Pipeline Company. Three routes for the proposed connection have been selected. The proposed route (Route 3) is approximately 11.65 miles long and ties into the existing natural gas line immediately north of Sebastian Road. The first alternative route (Route 3A) is approximately 13.8 miles long and would tie into a pipeline on David Road. The second alternative route (Route 3B) is approximately 18.5 miles long and would tie into a pipeline near the northwest boundary of the Tejon Ranch.

5.11.1.6 Wastewater Discharge Line (Route 4)

Wastewater will be discharged by injection approximately 1.7 miles northwest of the plant site into the Tejon Ranch Oil Field. Wastewater will be transported to the injection wells via a 10- to 12-inch pipeline, to originate at the northwest corner of the plant site (MP 0.0) and travel north to the point of discharge (MP 1.7).

5.11.1.7 Access Road (Route 5)

Access to the power plant will be from a new access road. The plant access road will originate from Edmonston Pump Plant Road and will be approximately 0.85 mile long.

5.11.2 Environmental Consequences

5.11.2.1 Significance Criteria

According to the guidelines established in the California Energy Commission Staff Application for Certification Instructions and those set forth in the California Environmental Quality Act (CEQA), Appendix G (1), (PRC Section 21000 et seq.), a project results in a significant effect when it will "cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system," or when it:

- Generates substantial additional vehicular movement
- Impacts existing parking facilities or promotes demand for new parking facilities
- Substantially impacts existing transportation systems
- Alters present patterns of circulation or the movement of people and/or goods
- Alters waterborne, rail, or air traffic
- Increases traffic hazards to motor vehicles, bicyclists or pedestrians.

Significant impacts would also include the failure to comply with federal and state regulations governing the transportation of hazardous materials, or the generation of traffic volumes violating local LOS standards.

5.11.2.2 Pastoria Energy Facility

The proposed generating plant may result in short-term impacts to traffic and the transportation system during the construction phase and long-term impacts during plant operations.

Construction of the generating plant will result in a temporary increase in traffic associated with the movement of construction vehicles, equipment, and personnel on the transportation network serving the project area. Operation of the plant will result in long-term, minor increases in traffic associated with plant employees and movement of vehicles serving the plant. Both construction and operation impacts are identified and discussed in detail below as they relate to traffic and transportation in the project area.

5.11.2.2.1 Construction-Related Impacts. In order to assess the magnitude and directional variation of vehicle trips associated with construction of the generating plant facility, vehicle trip generation and distribution were analyzed using the workforce data from Table 3.8-1.

Construction of the generating plant facility will occur over an estimated 24-month period and will require a total construction workforce of 193 workers on average, assuming a single shift and a 40-hour work week. Of the 193 workers, approximately 16 will be contractor-staff (there will be no contractor staff required for construction of the offsite facilities). Contractor-staff are considered non-local workforce and manual staff are considered local workers (refer to Section 5.10, Socioeconomics). During the peak construction period (in the 17th month after the notice-to-proceed) an estimated 365 construction workers will be required for the generating plant. Of the 365 workers, 350 are assumed to be local workers and the remaining 15 will make up the non-local workforce. The distribution of the workforce is therefore based on these numbers. Workforce vehicle trips were calculated based on this data.

Workforce Vehicle Trips. Table 5.11-3a (Plant Construction Workforce Distribution) summarizes the origins and distribution of the local construction workforce as well as the non-local workforce. Table 5.11-3b (Plant Construction Vehicle Trip Generation and Workforce Distribution) presents the projected vehicle trips to be generated by the construction of the generating plant including the peak and average vehicle trips.

Based on a worst-case scenario, it is assumed that on the average, each of the 193 workers will drive a separate vehicle to the project site, making two trips per day (one round trip from home to the site and back). Therefore, construction of the project could result in a total of approximately 386 vehicle trips per day on average, and about 730 vehicle trips per day during the peak construction period as shown in Table 5.11-3b. Parking for construction personnel and visitors will be provided in an area on or adjacent to the project site.

Workforce Trip Distribution. It is assumed that nearly all of the workers will come from Kern County, and that the few number of workers who might travel into the County from the Los Angeles area would be insignificant. As shown in Table 5-11.3a, the local and non-local construction workforce as follows:

- 69 percent to Bakersfield
- 11 percent to Delano
- 6 percent to Wasco
- 4 percent to Arvin
- 3 percent each to McFarland and Shafter
- 2 percent to Maricopa and Taft
- 2 percent to other areas of Kern County (including Tehachapi) and Southern California.

Preferred Routes of Travel by Workers. It is assumed that the route preferred by construction workers commuting from Bakersfield will be Highway 99 south to I-5 south, and east on Edmonston Pump Plant Road to the Pastoria Energy Facility project site.

Workers originating in Delano and McFarland will use Highway 99 to I-5 south, and east on Edmonston Pump Plant Road to the project site.

Workers originating in Wasco and Shafter will use Highway 43 to Highway 99 south, then take I-5 south, and east on Edmonston Pump Plant Road to the project site.

From Taft or Maricopa, workers will use Highway 166, then south on I-5, and east on Edmonston Pump Plant Road to the project site.

From Arvin, workers will use Highway 223 west, then south on Highway 99 to I-5, and east on Edmonston Pump Plant Road to the project site.

From Tehachapi, workers will use Highway 58 west, then west on Highway 223 to Highway 99 south to I-5, and east on Edmonston Pump Plant Road to the project site.

Construction-related workers coming from other cities or towns in Kern County or from Southern California will likely use I-5 north, then east on Edmonston Pump Plant Road to the project site.

Impacts of Workforce Traffic on Highways. Using the travel pattern assumptions described above, Table 5.11-4 (Distribution of Plant Construction-Related Traffic on Highways) presents the increased traffic on local highways anticipated as a result of the construction workforce commuting to and from the project site. During the peak construction period (estimated to be the 17th month following the Notice to Proceed), construction-related vehicle traffic will affect Highway 99 and 223 most heavily, resulting in traffic increases of 1 to 8 percent along portions of those highways. Over the duration of project construction, average increases in construction-related traffic along these same highway segments are estimated to range from 1 to 4 percent. The proposed project is not anticipated to reduce the existing LOS on any of the highways in the project area. No impacts are anticipated to local highways. In addition, these traffic increases would be short-term, occurring only during the peak construction period. Construction workforce traffic would generally occur between 6:00 a.m. and 7:00 a.m. in the morning, and again between 4:00 p.m. and 5:00 p.m. in the evening.

Impacts of Workforce Traffic on Local Roads. The two-lane, privately-owned road (Edmonston Pump Plant Road) providing access to the project site will be most affected by construction workforce traffic commuting to and from the project site. These impacts are presented in Table 5.11-5 (Distribution of Plant Construction-Related Traffic on Local Roads). During the peak construction period, traffic on Edmonston Pump Plant Road east of Interstate 5 will increase by 730 vehicle trips/day, resulting in a traffic increase of 101 percent. On average, construction-related traffic generated by the workforce along Edmonston Pump Plant Road east of Interstate 5 will result in an additional 386 vehicles trips per day, an increase of 54 percent over present conditions. Traffic increases will be most apparent during the morning and evening peak commute hours between approximately 6 a.m. and 7 a.m., and again between 4 p.m. and 5 p.m. each day. These increases would be short-term, occurring only during the peak construction period.

As shown in Table 5.11-2, Edmonston Pump Plant Road has a capacity of 9,000 vehicles per day. Because existing average daily traffic on this private road is negligible (720 average daily trips), the road is able to accommodate large increases in traffic without reducing its LOS to a

significantly adverse level (i.e., LOS E or F). Thus the peak-period traffic increases estimated above will still be far below the capacity of Edmonston Pump Plant Road and will not result in a significant adverse traffic impact. However, to reduce the potential for local residents to perceive peak period traffic as significant, construction-related traffic increases will be mitigated to the extent feasible through the use of traffic mitigation presented in Section 5.11.3.

Construction Equipment and Material Deliveries. Construction of the generating plant will require the use and installation of heavy machinery and associated systems and structures. Heavy equipment will be used throughout the construction period, including trenching and earthmoving equipment, forklifts, cranes, cement mixers, and drilling equipment.

In addition to deliveries of heavy equipment, construction materials such as concrete, wire, pipe, cable, fuels, reinforcing steel, and consumables will be delivered to the site by truck. An estimated total of 4,708 truck deliveries will be made to the plant site over the course of the 24-month construction period (see Table 3.8-5). Deliveries will include hazardous materials to be used during project construction, as described in Section 5.15, Hazardous Materials Handling. Deliveries will occur between 7:00 a.m. and 5:00 p.m. on weekdays. It is assumed that the majority of these materials will be transported from either Bakersfield or Los Angeles.

In some cases, vehicles used to transport heavy machinery and construction materials and equipment will require transportation permits where they are in excess of size thresholds set forth in the California Vehicle Code Section 35780; the Streets and Highways Code Sections 117 and 660-711; and 21 California Code of Regulations 1411.1 to 1411.6. Vehicles used during project construction that are over-size, over-weight, over-width, or over-length will require a transportation permit from Caltrans.

Transport of Heavy Equipment and Machinery. Whenever possible and cost-effective, rail lines will be used to transport heavy equipment and machinery identified in Table 3.8-2 in order to minimize truck transport. Union Pacific's and Southern Pacific Company Railroad Arvin Branch is the preferred rail line to transport heavy equipment and machinery.

Shipment and transport of cargo by rail, particularly large construction machinery, typically requires the use of a crane for loading onto flatbed cars. Loading and transferring of cargo of this type will also require unobstructed access to the track. Coordination with the Train Master in Bakersfield and/or Rail Traffic Manager in Arvin will therefore be required in order to arrange a pick-up or transfer point outside of Arvin Branch Station (Adame, 1999). There are train tracks (public access tracks) off of the branch line near the Arvin Branch Station that can facilitate loading/unloading of cargo. The train tracks provide access

conditions for truck transfers to and from the line (Adame, 1999). The cargo will be transported along this line to the Arvin Branch Station, the closest practical point to the project site, and will then be loaded on trucks for transport to the site. From the railroad termination in Arvin, heavy equipment will be transported along State Highway 223 (Bear Mountain Boulevard) to the 99 Freeway south and then on to the Pastoria Energy Facility project plant site, a distance of approximately 33 freeway miles.

Distribution of Truck Traffic and Routes of Travel. In total, construction of the Pastoria Energy Facility project is estimated to require approximately 4,708 truck deliveries to the plant site over a 24-month construction period (on average approximately 196 truck deliveries per month). Assuming 20 average work days per month and two trips for each truck delivery (one to and one from the site), the project will generate approximately 20 truck trips per day, on average.

It is assumed that about 70 percent of the truck deliveries would originate in Bakersfield and that drivers will utilize Highway 99 south to Interstate 5 south to the plant site. About 20 percent of the deliveries are assumed to originate from the Los Angeles area; drivers will use I-5 north to the site. The remaining truck deliveries will originate north of Bakersfield, and will travel via Highway 43 south to I-5 to the site, or I-5 south to the site.

Impacts of Truck Traffic on Highways. Table 5.11-6 (Distribution of Plant Construction-Related Truck Traffic on Highways) compares the construction-related truck traffic traveling to the generating plant site to existing automobile and truck traffic on highway routes. The average influx of 20 trucks per day on the highways that will be used for access to the site is minimal compared to existing truck traffic on these highways and will represent a negligible increase (0.003 to 0.3 percent) in truck traffic along the proposed routes of travel. Therefore, the impact of construction-related truck traffic on highways will not be significant.

Impacts of Truck Traffic on Local Roads. Trucks traveling to the site will proceed along Edmonston Pump Plant Road to the plant access road. As shown in Table 5.11-7 (Distribution of Plant Construction-Related Truck Traffic on Local Roads) construction-related truck traffic will result in a 3 percent increase in traffic on Edmonston Pump Plant Road. Due to the size and weight of the trucks, these increases will contribute to wear on the road, subsequently increasing the need for regular roadway maintenance to meet safety standards. Project-related roadway wear and tear is not, however, anticipated to result in a significantly adverse impact.

Construction debris and small quantities of hazardous wastes will be generated during project construction as described in Section 5.14, Waste Management. During construction, no more than several truck trips per month will be required to haul waste for disposal. Transportation

of hazardous materials to and from the project site will be conducted in accordance with California Vehicle Code Section 31300 et seq. since Kern County does not have local ordinances regulating the transportation of hazardous materials. Since the transport of hazardous wastes will be conducted in accordance with transportation regulations governing such transport, no significant impact is expected.

5.11.2.2.2 Operation-Related Impacts. Potential long-term traffic impacts are associated with the facility's operational workforce, delivery of hazardous and non-hazardous materials to the site, and hauling of waste generated during project operation.

Operation of the generating plant will require a labor force of approximately 25 full-time employees. Assuming that each employee will drive a separate vehicle to work and will make one round trip from home to work per day, operation of the plant will generate approximately 50 vehicle trips per day. Adequate parking will be available for employees on a paved lot adjacent to the administration building. It is assumed that the majority of the permanent workforce will reside in Bakersfield (see Section 5.10.2.2), and that their preferred route to work will be southerly along Highway 99 to Interstate 5, then east to Edmonston Pump Plant Road, then north along the plant access road to the project site. These avenues of travel will easily accommodate the operations-related traffic.

During project operation, about 11 truck deliveries per month of aqueous ammonia will be transported to the plant site. Other hazardous and non-hazardous materials, described in Section 5.15, Hazardous Materials Handling, will be delivered by truck to the plant site on an incidental basis. The anticipated travel routes for materials delivery will be along Highway 99 and/or Interstate 5. Overall, the number of hazardous materials truck deliveries to the site will be insignificant.

Some of the hazardous materials generated at the site during plant operation will be transported for disposal at a Class I landfill or transported offsite for recycling as described in Section 5.14, Waste Management. It is estimated that hazardous wastes generated onsite will be transported offsite for disposal about once every 90 days by licensed hazardous waste transporters.

In summary, operation of the proposed generating plant will generate traffic that can easily be accommodated by the existing roadway system. Operation of the proposed generating plant will not generate substantial vehicular movement; alter present patterns of circulation; alter waterborne, rail, or air traffic; substantially increase traffic hazards to motor vehicles, bicyclists, or pedestrians; violate adopted LOS standards; generate traffic for which impacted routes are not suitable; or create demand for new parking that cannot be accommodated by

the project design. Therefore, the proposed project is not expected to result in significant impacts on the local transportation system.

5.11.2.3 Transmission Line Route (Route 1)

Potential impacts associated with the transmission line route include both construction- and operation-related impacts. Construction-related impacts will result from the movement of heavy equipment, trucks, and workers' vehicles along access routes during construction of transmission line towers and the installation of conductors. While this work will not directly impact traffic operations at nearby facilities (as staging areas will be established within the existing rights of way or adjacent to existing rights of way on separate property), traffic generated during construction may impact existing traffic levels.

Operation-related impacts will result from the movement of vehicles on access routes during periodic maintenance of the transmission line. Construction and operation impacts are addressed below, and apply to the proposed transmission line route (Route 1).

Both construction of the transmission towers and installation of conductors, as well as maintenance during project operation, will require various types of authorization from owners of the affected sites. (See Appendix Q for a list of property owners potentially affected by the proposed Pastoria Energy Facility project.) Encroachment permits will be required for roadway crossings as discussed below. Refer to Section 5.9, Land Use, with respect to other jurisdictional right of way requirements.

5.11.2.3.1 Construction-Related Impacts. Several aspects of transmission line tower construction and conductor installation could potentially result in impacts. These include: 1) workforce-related traffic; 2) access to proposed tower structure locations; 3) transmission line roadway crossings; and 4) construction equipment and material deliveries. These issues are discussed below.

Workforce-Related Traffic. Construction of the transmission line along the route is anticipated to take 4 months and require 30 workers per month during surveying, site clearing, and grading (see Table 3.8-2.). Construction activities associated with the generating plant, transmission line, and pipelines (see Sections 5.11.2.4 and 5.11.2.5) will occur simultaneously during the 15 through 18th months following the Notice to Proceed. Construction of the transmission line will occur during the peak construction period (17th month) for the generating plant only. It is assumed that the plant site staging area will provide staging for the transmission line to store equipment and materials and to provide field offices. Employees will report to the staging area at the beginning and the end of each work day, then distribute themselves as needed to various work sites along the transmission line route. For

these reasons, and for the reasons discussed below related to tower access, local roadways and highways will not be significantly impacted by workforce-related traffic associated with construction of the transmission line.

Access to Tower Structures. Access to the tower structures for the transmission line will be along the existing access roads and pathways to the existing transmission line corridor. Transmission line construction will not adversely affect the existing roadways and will not result in any significant traffic and transportation-related impacts.

Roadway Crossings. The transmission line route will cross Edmonston Pump Plant Road at approximately Route 1 MP 1.0. The local roadway crossing will occur in accordance with permitting authority requirements. As appropriate, barricades and lights will be provided at the crossing in accordance with California Department of Transportation “Manual of Traffic Controls for Construction and Maintenance of Work Zones,” and California Vehicle Code, Section 21400.

Construction Equipment and Material Deliveries. Construction of the transmission line will require the use and installation of heavy equipment, including various trucks (pickup, truck crane, winch, concrete transit mixer, and backhoe), and a cable puller. An estimated 13 pieces of heavy equipment will be used during the transmission line’s peak construction period.

In addition to deliveries of heavy equipment, construction materials such as transmission tower foundation sections, transmission structure components, and consumables will be delivered by truck to the transmission line staging sites. An estimated total of 5 to 25 truck deliveries will be made to the staging sites over the course of the 4-month delivery period (months 15 through 18), peaking at 25 deliveries during months 17 and 18. Delivery hours and origins are assumed to be the same as identified for the generating plant.

In some cases, vehicles used to transport heavy machinery and construction materials and equipment may require a transportation permit from Caltrans.

Given the small number of truck deliveries, traffic impacts associated with construction equipment and materials deliveries for the transmission line are considered to be insignificant.

5.11.2.3.2 Operation-Related Impacts. Maintenance of the transmission line system will result in negligible vehicle travel along access to towers, and will not have an adverse impact on the existing roadways crossed by, or located in the vicinity of, the transmission line towers.

5.11.2.4 Water Supply Line (Route 2)

The proposed water supply line will originate at the project site (MP 0.0) and travel 0.05 mile west of the site (MP 0.05). The project will install a new pipeline from the site and connect to the District's proposed 54-inch diameter water main west of the site. The pipeline will be constructed below ground and installed by open-cut trenches. Potential traffic and transportation impacts associated with construction and operation of the water supply line would be similar to those identified for the transmission line, with the exception that no roadways will be crossed by the short water supply line.

5.11.2.4.1 Construction-Related Impacts. Construction of the water supply line is anticipated to occur during the 11th through 13th months following the Notice to Proceed. An average monthly workforce of 25 is estimated over the duration of pipeline construction. It is assumed that each worker will drive a separate vehicle, making 2 trips per day, for a total of approximately 50 vehicle trips per day during the peak construction month for the water supply line. A staging area for the pipeline will be located south of the plant site. Workers will report to this staging area at the beginning and the end of each work day, then distribute themselves as needed to various work sites along the pipeline route, similar to that described for the transmission line route. Given the generally small size of the construction workforce, no significant impacts are anticipated to local roadways and highways from construction worker traffic.

Construction Equipment and Material Deliveries. Construction of the water supply line will require the use and installation of heavy equipment, including a plate compactor, portable equipment, generators, dump trucks, air compressors, dozers, excavators, 15-ton cranes, pick-up trucks, and fuel trucks. An estimated 17 pieces of heavy equipment will be used during the water supply line's peak construction period (the 12th month following the Notice to Proceed).

In addition to the deliveries of heavy equipment, construction materials such as electrical equipment and supplies, piping, supports and valves, concrete and rebar, miscellaneous steel, consumables, and other construction equipment will be delivered to the water supply line/pump station staging sites by truck. An estimated maximum of 35 truck deliveries will be made to the staging sites over the course of construction (months 11 through 13). Delivery hours and origins are assumed to be the same as identified for the generating plant.

In some cases, vehicles used to transport heavy machinery and construction materials and equipment will require a transportation permit from Caltrans.

Given the small number of truck deliveries, and their distribution among multiple staging sites and work areas, traffic impacts associated with construction equipment and materials deliveries for the water supply line are considered to be insignificant.

5.11.2.4.2 Operation-Related Impacts. Maintenance activities along the water supply lines will result in minimal or no disruption of local roads and highways. Therefore, operation of the water supply lines is expected to have no long-term or significant impacts on traffic or transportation in the project area.

5.11.2.5 Fuel Gas Supply Line (Route 3, Route 3A and Route 3B)

Natural gas will be used as fuel for the proposed project. Fuel will be delivered via a new pipeline that will tie into an existing interstate gas pipeline jointly owned by the Kern River Gas Company and the Mojave Pipeline Company. Three routes for the proposed connection are under consideration. The proposed route (Route 3) is approximately 11.65 miles long and ties into the existing natural gas line immediately north of Sebastian Road. The first alternative route (Route 3A) is approximately 13.8 miles long and would tie into the pipeline on David Road. The second alternative route (Route 3B) is approximately 18.5 miles long and ties into the pipeline near the northwest boundary of the Tejon Ranch. The natural gas supply line will be buried to a depth of at least 3 feet. The Applicant plans to locate the pipeline in road rights of way where applicable and appropriate.

5.11.2.5.1 Construction-Related Impacts. Equipment and workforce requirements for construction of the natural gas supply line are included in the estimates for the power plant. At least one lane of access along David and Sebastian Road will be maintained throughout pipeline construction. Traffic impacts associated with construction of the pipeline will be insignificant.

5.11.2.5.2 Operation-Related Impacts. Maintenance activities along the pipeline route will result in minimal or no disruption of local roads and highways. Therefore, operation of the natural gas supply line is expected to have no long-term or significant impacts on traffic or transportation in the project area.

5.11.2.6 Wastewater Discharge Line (Route 4)

Wastewater will be discharged by injection approximately 1.7 miles northwest of the plant site into the Tejon Ranch Oil Field. Wastewater will be transported to the injection wells via a 10- to 12-inch pipeline, to originate at the northwest corner of the plant site (MP 0.0) and travel north to the Tejon Oil Field (MP 1.7). The wastewater discharge line will be buried to a depth of at least 4 feet. No road crossings will be required.

5.11.2.6.1 Construction-Related Impacts. Equipment and workforce requirements for construction of the wastewater discharge line are included in the estimates for the power plant. Traffic impacts associated with construction of the pipeline will be insignificant.

5.11.2.6.2 Operation-Related Impacts. Maintenance activities along the pipeline route will result in minimal or no disruption of local roads and highways. Therefore, operation of the wastewater discharge line is expected to have no long-term or significant impacts on traffic or transportation in the project area.

5.11.2.7 Access Road

Access to the power plant will be from a new access road. The plant access road will originate from the Edmonston Pump Plant Road and will be approximately 0.85 mile long.

5.11.2.7.1 Construction-Related Impacts. Equipment and workforce requirements for construction of the access road are included in the estimates for the power plant. No road closures will be required during construction of the access road. Traffic impacts associated with construction of the access road will be insignificant.

5.11.2.7.2 Operation-Related Impacts. Maintenance activities along the access road will result in minimal or no disruption of local roads and highways. Therefore, operation of the access road is expected to have no long-term or significant impacts on traffic or transportation in the project area.

5.11.2.8 Cumulative Impacts

Analysis of the available capacity of the regional highways described in this section shows that the regional transportation system serving the Kern County area (along the potentially affected highways) has ample capacity to accommodate the proposed project's construction- and operation-generated traffic. Cumulative impacts could occur, however, if construction of the Pastoria Energy Facility Generating project were to overlap with proposed projects whose workforce and/or equipment and materials deliveries were to concurrently travel the same local roadways.

The Kern County Planning Department has noted that an application for the Tejon Industrial Complex, located on the east side of Interstate-5 on Laval Road is currently being processed and that a Draft Environmental Impact Report is being prepared. The complex, if approved, will be located approximately 8 miles from the power plant site. The complex consists of approximately 320 acres of development, primarily for industrial and commercial uses; it is currently scheduled to be heard by the County's Planning Commission in March 2000 and, if

approved, could begin construction shortly thereafter (Sweeney, 1999). Caltrans is currently evaluating the need for improvements of the I-5/Laval Road intersection in response to the increase in traffic that would occur as a result of the complex. No improvements are planned at this time (Sorensen, 1999).

Construction of the Pastoria Energy Facility is anticipated to occur between the second quarter of 2001 and the second quarter of 2003, with peak activity occurring in 2002. Construction of the project's natural gas pipeline could make use of the I-5 Laval Road exit/entrance. Construction of the pipeline is currently scheduled to occur between December, 2001 and May, 2002.

In addition to the Tejon Industrial Ranch project, the County has noted that the Petro Stopping Center is located on the west side of the Laval Road entrance/exit, and that the Truck Stops of America, and several other commercial establishments primarily dedicated to traveler services, are located at the Grapevine entrance/exit of I-5. Although construction of the Pastoria Energy Facility will increase traffic volumes at this intersection, the impact on traffic and transportation is not considered to be significant due to its temporary nature.

The Kern County Board of Supervisors adopted the San Midio New Town Specific Plan on October 5, 1992. The Plan would include 9,447 acres of mixed-use development (residential and industrial), located west of I-5 and southwest of Tejon Industrial Complex. This Plan may never be implemented because the water entitlements were lost and a portion of the Plan area is owned by the Nature Conservancy (Sweeny, 1999).

If construction of the Tejon Industrial Complex and/or San Midio New Town were to coincide with both Caltrans improvements to the Laval Road exit/entrance to I-5 and construction of the project's fuel gas pipeline, impacts on traffic and transportation could occur. The impact would affect both the Laval Road and Grapevine exits/entrances of I-5. However, impacts would not be considered significant due to the temporary nature of the fuel gas pipeline construction period (6 months). In addition, assessing the level of significance associated with this impact is considered unduly speculative at this time due to the uncertainty of final construction plans and schedules.

Operation of the proposed generating plant will generate traffic that can easily be accommodated by the existing highway and roadway system. No impacts from plant operation are anticipated at the Laval Road exit/entrance to I-5, since plant workers will be arriving at the site using the I-5 to the Edmonston Pump Plant Road exit. No significant cumulative traffic impacts are expected.

5.11.3 Mitigation Measures

Project construction would add substantial traffic to local highways and roadways during the peak construction period. Due to the adequacy of existing highway and roadway capacity, however, these project-related traffic increases will not result in significant adverse impacts. Although not required based on this environmental analysis, the mitigation measures listed below are proposed to reduce traffic impacts to the extent feasible.

TRAN-1. If warranted, utilize proper signs and traffic control measures in accordance with Caltrans and County requirements during peak traffic hours.

TRAN-2. Coordinate construction activities with appropriate County departments to maintain traffic flow and safety.

With implementation of the Applicant-committed mitigation measures specified above, no significant unavoidable adverse traffic and transportation impacts are anticipated from the proposed project.

5.11.4 LORS Compliance

The laws, ordinances, regulations, and standards (LORS) applicable to traffic and transportation are identified in Section 7.5.11. Additionally, the Kern County General Plan Circulation Element, referred to in Section 7.5.11, contains goals and policies which have been specified in Section 5.11.1.1. These goals and policies were considered in the presentation of the transportation and traffic assessment contained herein. Since the goals and policies are directed toward County staff and guide the content and requirements of developer applications, the assessment will provide information sufficient for a finding by the County of compatibility with the Circulation Element.

Based on the information provided in this AFC, as summarized above, the Pastoria Energy Facility project is in compliance with the LORS applicable to traffic and transportation defined in Section 7.5.11.

5.11.5 References

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TABLE 5.11-1

EXISTING TRAFFIC CHARACTERISTICS OF HIGHWAYS IN THE PROJECT AREA

Highway	Milepost	Location	Annual Average Daily Traffic¹	Peak Hour Traffic¹	Annual Average Daily Truck Traffic²	Percentage of Truck Traffic³	Capacity (vphpd)⁴	LOS⁶
Interstate 5	0	Los Angeles-Kern County Line	52,000	7000	17820	34	5,520	D
	10.15	Grapevine	52,000	6,200	13,770	26	7360	C
	15.86	Jct. Rte 99 North	25,550	2,700	5,250	21	3560	A
	19.61	Jct. Rte 166	23,900	2,550	4,977	21	3520	C
	33.49	Jct Rte 223	23,200	2,450	4,830	21	3560	C
	38.78	Jct. Rte 119	23,600	2,500	4,914	21	3560	C
	41.19	Jct Rte 43	23,200	2,450	4,914	21	3600	C
	52.15	Jct Rte 58	24,100	2,600	7,353	31	3600	C
	62.61	Lerdo Hwy	24,300	2,550	7,953	32	3600	C
	73.02	Jct Rte 46	23,700	4,200	7,260	31	3560	C
Highway 33	11.56	Jct Rte 166-East	4,400	450	1,104	26	1,920	C
	12.91	County Road P263	6,200	610	NA	NA	1780	D
	17.89	Jct Rte 119-East	8,600	840	2,236	26	1860	D
Highway 43	47.89	Jct Rte 5	3,550	320	946	26	1740	B
	8.11	Jct Rte 58-East Rosedale Hwy	3,300	300	795	24	1690	B
	9.16	Jct Rte 58-West McKittrick Hwy	9,600	940	1,920	20	1640	A
	16.55	East Lerdo Hwy	7,600	670	684	9	1915	A

TABLE 5.11-1

(Continued)

Highway	Milepost	Location	Annual Average Daily Traffic¹	Peak Hour Traffic¹	Annual Average Daily Truck Traffic²	Percentage of Truck Traffic³	Capacity (vphpd)⁴	LOS⁶
	25.13	Jct Rte 46-West Famoso Hwy	7,200	650	864	12	1760	C
	25.19	Jct Rte 46-East	3,100	280	498	16	1760	B
	36.67	Garces Hwy (Jct Rte 155)	1,600	150	NA	NA	1760	A
Highway 58	75.62-	Jct Rte 223-West	18,500	1,750	6,301	34	2040	B
	77.25	Bear Mt. Ranch	18,200	1,800	5,249	28	2400	B
	90.72	Jct Rte 202	19,500	2,650	7,718	37	3320	B
Highway 99	0.75	Jct Rte 5	26,500	1,950	6,240	23	5280	B
	2.73	Jct Rte 166	28,000	3,050	6,600	24	5280	B
	13.41	Jct Rte 223	32,500	3,050	6,840	21	5280	B
	17.50	Jct Rte 119	42,000	3,650	8,250	20	5520	B
	23.51	Jct Rte 58-East	108,000	11,000	20,520	19	7280	C
	25.65	Jct Rte 58 West –Jct Rte 178 West	114,000	11,600	20,520	18	7170	D
	27.05	Jct Rte 204	73,000	5,800	27,170	29	5340	C
	29.88	Jct Rte 65	59,000	6,100	17,110	29	5340	C
	44.31	Jct 46	39,000	3,500	11,165	29	5340	B
	55.52	Jct Rte 155	36,000	2,700	9,940	27	3600	B
Highway 166	0.01	Jct. Rte. 33 North	3,600	410	862	23	1260	C

TABLE 5.11-1

(Continued)

Highway	Milepost	Location	Annual Average Daily Traffic¹	Peak Hour Traffic¹	Annual Average Daily Truck Traffic²	Percentage of Truck Traffic³	Capacity (vphpd)⁴	LOS⁶
	22.80	Jct. Rte. 5 Freeway	2,200	400	609	29	1820	B
	24.62	Jct. Rte. 99	2,600	450	725	29	1820	B
Highway 223	10.54	Jct Rte 5	680	70	124	18	1600	A
	10.94	Jct Rte 99	4,250	350	1,178	27	1760	B
	21.17	Derby Street	2,100	180	NA	NA	1690	B
		Jct Rte 58	1,150	100	290	25	1090	B

¹ Source: 1998 Traffic Volumes on the California State Highway System (Caltrans, 1999).

² Source: 1997 Truck Volumes on the California State Highway System (Caltrans, 1998).

³ Percentages calculated using 1996 average daily truck traffic as a percentage of 1998 annual average daily traffic (AADT).

⁴ vphpd = vehicles per hour per direction. Source: Oputa, 1999

⁵ Data not available from Caltrans. Extrapolated from data on adjacent highway segments.

⁶ Source: Oputa, 1999.

TABLE 5.11-2

**EXISTING TRAFFIC CHARACTERISTICS OF LOCAL ROADWAYS
IN THE PROJECT AREA**

Roadway	Location	Classification	Annual Average Daily Traffic (V)¹	Annual Peak Hour Traffic²	Capacity (C)³	LOS (V/C)⁴
Edmonston Pump Plant Road	South of Plant Site	2-lane local road	720	72	9,000	A

¹ Edmonston Pump Plant Road is a private road. Traffic count data is not available from the Kern County Roads Department (Hayslett, 1999). Based on a visual observation of traffic conducted 9/14/99, it is assumed that ADT for Edmonston Pump Plant is 720 trips per day (average of 60 trips per hour x 12 daytime hours).

² Based on 10 percent of AADT.

³ Kern County, 1998.

⁴ LOS calculated by dividing volume (V) by capacity (C); and, using the V/C ratio to define LOS (Kern County, 1998).

TABLE 5.11-3a

PLANT CONSTRUCTION WORKFORCE DISTRIBUTION

Origin of Vehicle Travel to Pastoria Energy Facility Site	Distribution of Local Workforce	Average Local Workforce	Peak Local Workforce	Distribution of Non-Local Workforce	Average Non-Local Workforce	Peak Non-Local Workforce	Total Average Workforce¹	Total Peak Workforce²
Bakersfield	69%	122	241	69%	11	10	133	251
Delano	11%	20	38	11%	2	2	21	40
Wasco	6%	11	21	6%	1	1	11	22
Arvin	4%	7	14	4%	1	1	8	15
McFarland	3%	5	11	3%	.5	.5	6	11
Shafter	3%	5	11	3%	.5	.5	6	11
Taft and Maricopa	2%	3.5	7	2%	.5	--	4	7.5
Other areas of Kern County (including Tehachapi) and Southern California	2%	3.5	7	3%	.5	--	4	7.5
TOTAL	100%	177	350	100%	16	15	193	365

¹Sum of average local workforce and average non-local workforce.

²Sum of total peak local workforce and total peak non-local workforce.

TABLE 5.11-3b

PLANT CONSTRUCTION VEHICLE TRIP GENERATION AND WORKFORCE DISTRIBUTION

Origin of Trip Distribution To/From Pastoria Energy Facility Project Generating Plant Site	Average Workforce¹	Average Vehicle Trips	Peak Workforce²	Peak Vehicle Trips
Bakersfield	133	266	251	502
Delano	21	42	40	80
Wasco	11	22	22	44
Arvin	8	16	15	30
McFarland	6	12	11	22
Shafter	6	12	11	22
Taft and Maricopa	4	8	7.5	15
Other areas of Kern County (including Tehachapi) and Southern California	4	8	7.5	15
TOTAL	193	386	365	730

Source: Based on workforce estimates provided in Section 3.8.1.

¹ See Table 5.11-3a, "Total Average Workforce".

² See Table 5.11-3a, "Total Peak Workforce".

TABLE 5.11-4

DISTRIBUTION OF PLANT CONSTRUCTION-RELATED TRAFFIC ON HIGHWAYS

Highway/Roadway	Existing AADT⁽¹⁾	Existing LOS⁽¹⁾	Projected Peak Vehicle Trips/Day	Peak Increase (%)	Projected Peak LOS¹³	Projected Average Vehicle Trips/Day	Average Increase (%)
Interstate 5							
@ jct. Hwy 99 North	25,550	A	730 ⁽¹⁾	3	A	386 ⁽¹⁾	.03
@ jct. Hwy 166	23,900	C	15 ⁽⁴⁾	.06	C	8 ⁽⁴⁾	.03
@ jct. Hwy 223	23,200	C	28 ⁽³⁾	.1	C	17 ⁽³⁾	.07
@ jct. Hwy 119	23,600	C	28 ⁽³⁾	.1	C	17 ⁽³⁾	.07
@ jct. Hwy 43	23,200	C	28 ⁽³⁾	.1	C	17 ⁽³⁾	.07
@ jct. Hwy 58	24,100	C	28 ⁽³⁾	.1	C	17 ⁽³⁾	.07
Highway 33							
@ jct. Hwy 166-East	4,400	C	15 ⁽⁴⁾	.3	C	8 ⁽⁴⁾	.2
@ jct. Hwy 119-East	8,600	D	15 ⁽⁴⁾	.2	D	8 ⁽⁴⁾	.09
Highway 43							
@ jct. Hwy 5	3,550	B	28 ⁽³⁾	.7	B	17 ⁽³⁾	.5
@ jct. Hwy 58-East Rosedale Hwy	3,300	B	28 ⁽³⁾	.8	B	17 ⁽³⁾	.5
@ jct. Hwy 58-West McKittrick Hwy	9,600	A	28 ⁽³⁾	.3	A	17 ⁽³⁾	.3
@ jct. Hwy 46-West	7,200	C	44 ⁽⁵⁾	.6	C	22 ⁽⁵⁾	.3

TABLE 5.11-4

(Continued)

Highway/Roadway	Existing AADT ¹	Existing LOS ¹	Projected Peak Vehicle Trips/Day	Peak Increase (%)	Projected Peak LOS ¹³	Projected Average Vehicle Trips/Day	Average Increase (%)
@ jct. Hwy 46-East	3,100	B	44 ⁽⁵⁾	1	B	22 ⁽⁵⁾	.7
Highway 58							
@ jct. Hwy 223-West	18,500	B	15 ⁽⁶⁾	.1	B	8 ⁽⁶⁾	.04
@ jct. Hwy 202	19,500	B	15 ⁽⁶⁾	.07	B	8 ⁽⁶⁾	.04
Highway 99							
@ jct. Hwy 5	26,500	B	730 ⁽²⁾	3	B	386 ⁽²⁾	1
@ jct. Hwy 166	28,000	B	619 ⁽⁷⁾	2.2	B	328 ⁽⁷⁾	1
@ jct. Hwy 223	32,500	B	619 ⁽⁷⁾	2	B	328 ⁽⁷⁾	1
@ jct. Hwy 119	42,000	B	604 ⁽⁸⁾	1.4	B	320 ⁽⁸⁾	.8
@ jct. Hwy e 58-East	108,000	C	604 ⁽⁸⁾	.6	C	320 ⁽⁸⁾	.3
@ jct. Hwy 58- West	114,000	D	604 ⁽⁸⁾	.5	D	320 ⁽⁸⁾	.3
Jct Rte 178 West							
@ jct. Hwy 204	73,000	C	604 ⁽⁸⁾	8	C	320 ⁽⁸⁾	.4
@ jct. Hwy 65	59,000	C	604 ⁽⁸⁾	1	C	320 ⁽⁸⁾	.5
@ jct. Hwy 46	39,000	B	102 ⁽⁹⁾	.3	B	54 ⁽⁹⁾	.1
@ jct. Hwy 155	36,000	B	80 ⁽¹⁰⁾	.2	B	42 ⁽¹⁰⁾	.1

TABLE 5.11-4

(Continued)

Highway/Roadway	Existing AADT¹	Existing LOS¹	Projected Peak Vehicle Trips/Day	Peak Increase (%)	Projected Peak LOS¹³	Projected Average Vehicle Trips/Day	Average Increase (%)
Highway 166							
@ jct. Hwy 33 North	3,600	C	15 ⁽³⁾	.4	C	8 ⁽³⁾	.2
@ jct. Hwy 5 Freeway	2,200	B	15 ⁽³⁾	.7	B	8 ⁽³⁾	.4
Highway 223							
@ jct. Hwy 5	680	A	45 ⁽¹¹⁾	7	A	24 ⁽¹¹⁾	4
@ jct. Hwy 58	1,150	B	45 ⁽¹¹⁾	4	B	24 ⁽¹¹⁾	2

¹ See Table 5.11-1.

² Assumes traffic from all directions

³ Assumes traffic from Wasco and Shafter

⁴ Assumes other areas of Kern County (including Taft and Maricopa)

⁵ Assumes traffic from Wasco only

⁶ Assumes traffic from other areas of Southern California and Tehachapi

⁷ Assumes traffic from Bakersfield, Delano, McFarland and other areas of Kern County

⁸ Assumes traffic from Bakersfield, Delano, and McFarland

⁹ Assumes traffic from Delano and McFarland

¹⁰ Assumes traffic from Delano only

¹¹ Assumes traffic from Arvin and other areas of Southern California and Tehachapi

¹² Projected LOS estimated based on percentage peak increase. LOS calculations not available from Caltrans

TABLE 5.11-5**DISTRIBUTION OF PLANT CONSTRUCTION-RELATED TRAFFIC ON LOCAL ROADS**

Local Road	Existing AADT	Projected Peak Vehicle Trips/Day	Peak Increase (%)	Projected Average Vehicle Trips/Day	Average Increase (%)
Edmonston Pump Plant Road	720	730 ⁽¹⁾	101	386 ⁽¹⁾	54

¹ Assumes traffic from all directions.

TABLE 5.11-6**DISTRIBUTION OF PLANT CONSTRUCTION-RELATED TRUCK TRAFFIC ON HIGHWAYS**

Highway	Existing AADT	Existing Truck AADT	Project Average Truck Trips/Day¹	Average Increase (%)
Interstate 5				
@ Grapevine	52,000	13,700	2 ⁽²⁾	.03
@ jct. Hwy 99	25,500	5,250	4 ⁽⁴⁾	.02
@ jct. Hwy 58	23,200	4,830	4 ⁽⁴⁾	.02
Highway 99				
@ jct. Hwy 5	2,650	6,240	7 ⁽⁴⁾	.3
@ jct. Hwy 223	32,500	6,840	1 ⁽³⁾	.003
Highway 43				
@ jct. Hwy 5	3,550	946	8 ^{(3), (4)}	.2

¹ Assumes an average of 435 truck deliveries each month, generating approximately 10 truck deliveries per day, i.e., 20 trips/day on average during construction period.

² 20% from Los Angeles area using I-5 north to project site.

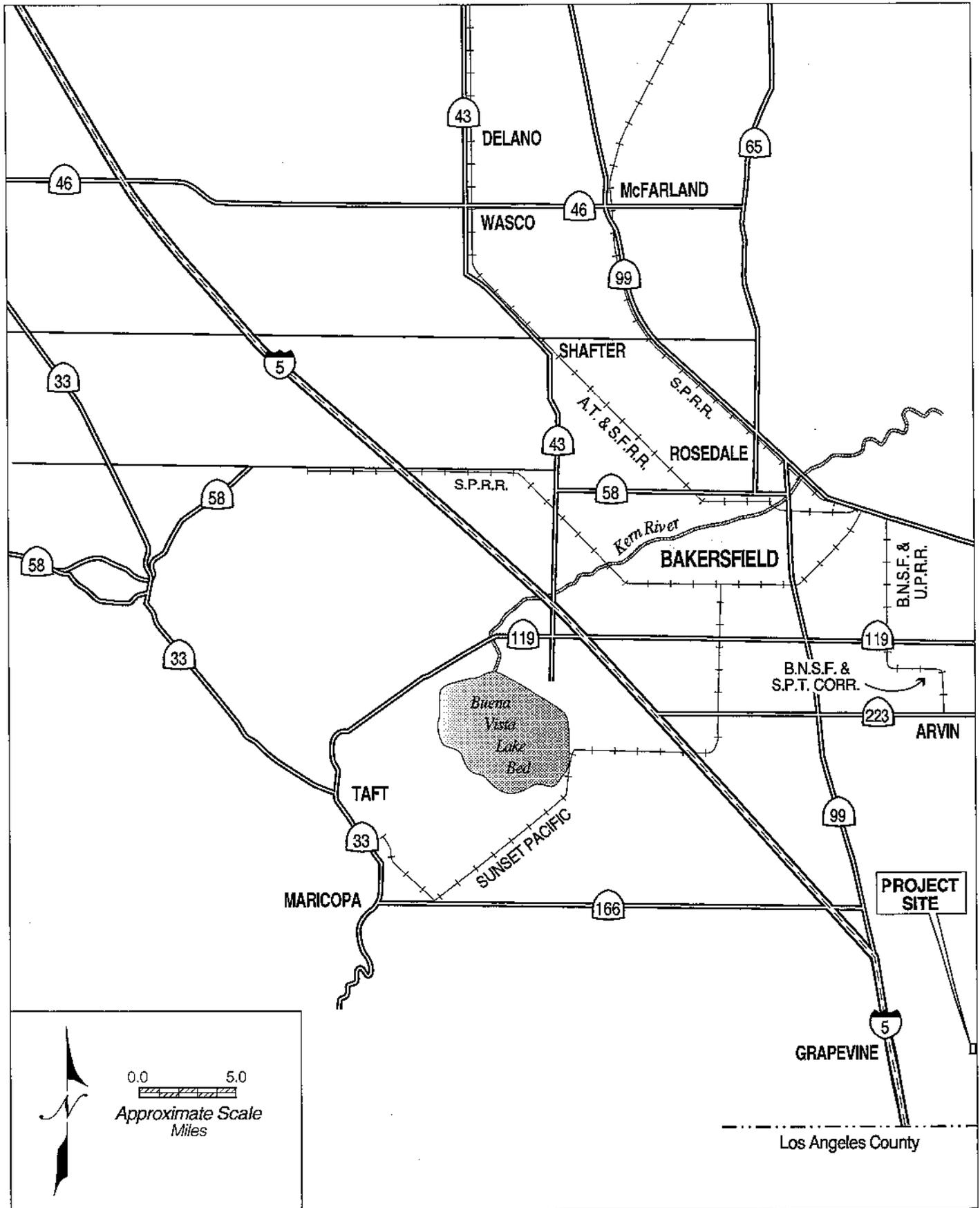
³ 10% from north of Bakersfield using Highway 43 south to the I-5 to the site or the I-5 south to the site.

⁴ Assumes 70% deliveries from Bakersfield using Highway 58 west to Highway 33 south.

TABLE 5.11-7

**DISTRIBUTION OF PLANT CONSTRUCTION-RELATED
TRUCK TRAFFIC ON LOCAL ROADS**

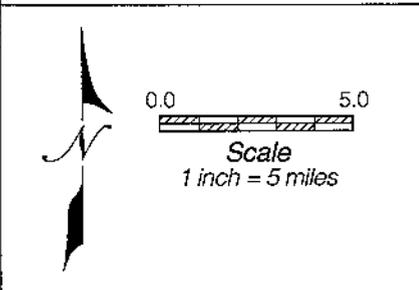
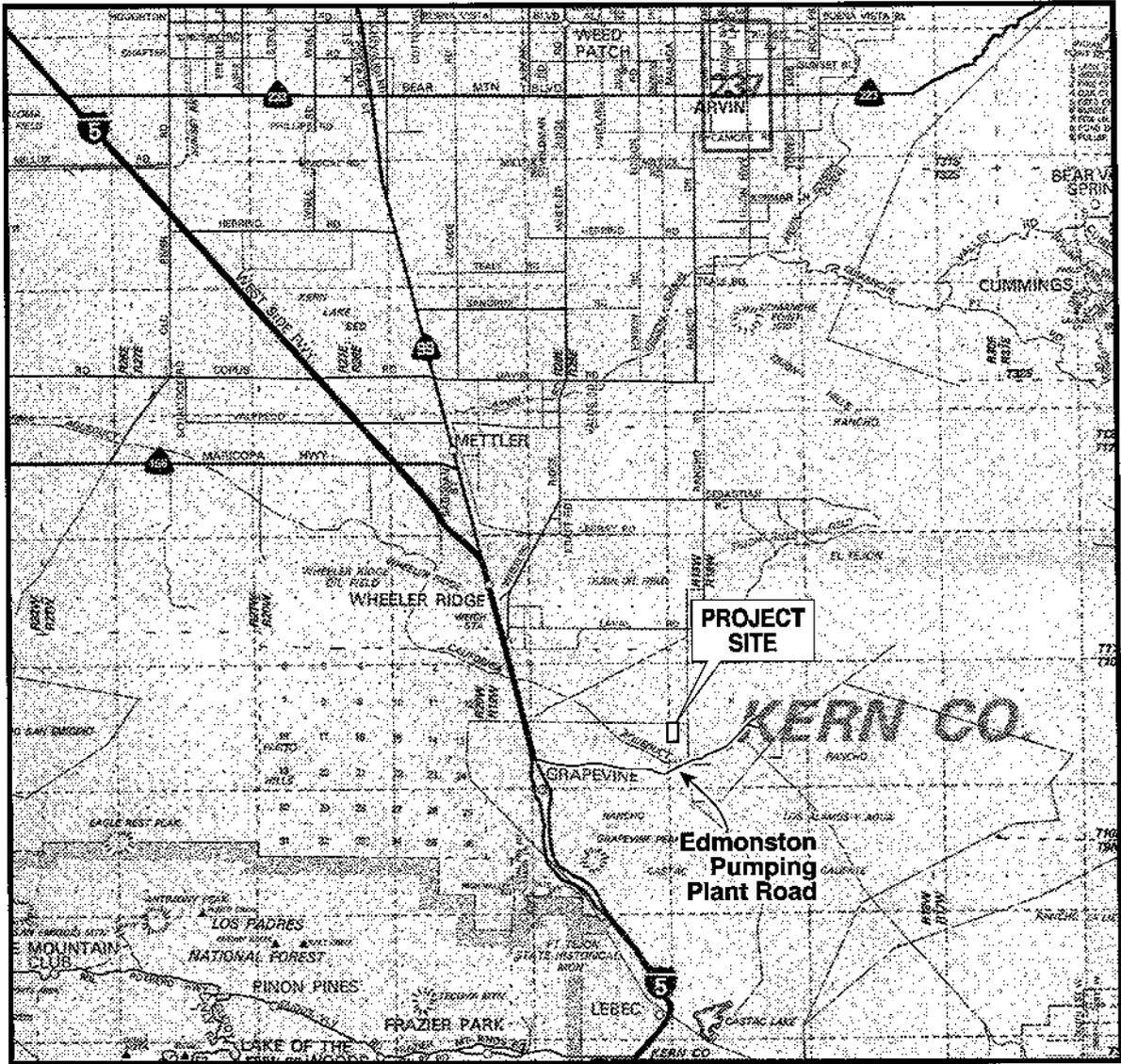
Local Road	Existing AADT	Project Average Truck Trips/Day	Average Increase (%)
Edmonston Pump Plant Road	720	20	3.0



Pastoria Energy Facility
 Pastoria Energy Facility, LLC

Figure 5.11-1. REGIONAL TRANSPORTATION SETTING

1999



Pastoria Energy Facility
Pastoria Energy Facility, LLC

Figure 5.11-2. LOCAL TRANSPORTATION SETTING

1999