

5.11 TRAFFIC AND TRANSPORTATION

This section addresses potential impacts associated with traffic and transportation systems in the project area that may result from construction and operation of the Palomar Energy Project. The analysis considers regional and local roadways and railroads, current and project-related traffic conditions, access to the project site, project construction- and operations-related traffic, and transportation of project-related hazardous materials and wastes.

5.11.1 Affected Environment**5.11.1.1 Regional Setting**

The regional setting includes the existing and planned public roads and rail lines considered in the transportation impact analysis. Figure 5.11-1 depicts the existing major highways and other transportation facilities in the area that are likely to be affected by Palomar facility construction and operation. The following plans and programs describe the framework for managing the transportation resources in the project area.

Regional Transportation Plan

The San Diego Association of Governments (SANDAG) has prepared a Year 2020 Regional Transportation Plan (RTP) that establishes regional transportation goals, policies, objectives, and actions for various modes of transportation. The current RTP, adopted in 2000, is a long range (20-year) plan that assesses the transportation impacts of proposed projects, establishes air quality conformity as required by federal regulations, and discusses intermodal and multimodal transportation activities.

Transportation Improvement Program

SANDAG is required by federal law to develop and publish a Regional Transportation Improvement Program (RTIP) at least every two years. The RTIP is a short range (four-year) program that incrementally implements the RTP. The RTIP 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 RTIP was adopted by SANDAG in July, 2000.

Congestion Management Program

SANDAG is the designated Congestion Management Agency (CMA) for San Diego County under the 1990 Congestion Management Program (CMP). As the CMA, SANDAG must develop, adopt, and update the CMP for the region. SANDAG's most current update of the CMP, completed in 1999, has been incorporated into the RTP. Implementation guidelines for the CMP have been developed jointly by the San Diego Traffic Engineer's Council (SANTEC) and the Institute of Transportation Engineers (ITE). The objective of CMP is to

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Figure 5.11-1. Existing Street Network

ensure that enhanced capacity analysis is conducted on freeways and designated Regionally Significant Arterials (RSAs) in San Diego County, and that deficiency plans are developed to ensure that these facilities attain the minimum performance standard of Level of Service (LOS) D.

Long Range Improvement Plans

Long-range improvements planned for the regional transportation system in and around Escondido include the following (SANDAG, 2000):

- **Interstate 15 - Escondido Freeway.** This project would construct four high-occupancy vehicle/managed lanes on I-15 between SR-56 in Rancho Peñasquitos and State Highway 78 (Highway 78) in Escondido. The Managed Lane concept involves reversible high-occupancy vehicle lanes oriented in the peak direction of travel (in the case of I-15, southbound in the morning peak hour and northbound in the afternoon peak hour). According to the RTIP, completion of the HOV/Managed Lanes is anticipated in Fiscal Year 2003.
- **Oceanside to Escondido Commuter Light Rail.** This project would provide east/west light rail service between the western portion of Escondido to the City of Oceanside, west of I-5. The proposed service would provide an alternative for commuters travelling in the Highway 78 corridor. In the project vicinity, light rail service would initiate at the existing Escondido Transit Center and proceed westerly on the San Diego Northern right-of-way along the south side of West Washington Avenue/Mission Road. A future transit station is proposed adjacent to the Mission Road/Citracado Parkway intersection. According to the RTIP, construction of this project will be completed in FY 2008.

5.11.1.2 Highways and Roadways

San Diego County has an extensive transportation network of approximately 600 miles of state highways (including 300 miles of freeways and expressways), and 7,200 miles of other public roads. San Diego County serves as a major transportation corridor between the Los Angeles area and the US-Mexico border. Interstates 5 and 15 (I-5 and I-15) are primary routes for north-south travel.

As illustrated in Figure 5.11-1, the project area is served primarily by I-15 and Highway 78. Both facilities are freeways operated and maintained by Caltrans, District 11. Section 5.11.1.4 addresses existing traffic volumes, truck traffic, capacity, and Level of Service (LOS) on these freeways and surrounding arterial roadways.

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5.11.1.3 Railroads and Bus Transportation

The San Diego Northern Railroad provides rail service between Escondido and Oceanside, located to the west of the project area. As discussed in Section 5.11.1.1, the RTP includes a plan to implement light rail commuter service on this corridor to help alleviate peak hour congestion in the Highway 78 corridor. This light rail system would include a station northwest of the Palomar site on Nordahl Road near Highway 78. There also are a number of bus routes in the project vicinity. The nearest route to the Palomar site runs along Vineyard Avenue to the north and east of the site. Figure 5.11-2 shows the local bus routes and the planned future commuter rail service route.

5.11.1.4 Existing Traffic on Nearby Highways and Local Roads

Figure 5.11-3 depicts the classification of existing and proposed future streets based on the City of Escondido General Plan's current Circulation Element. As shown in this figure, the Circulation Element anticipates the future construction of Enterprise Street as a continuous facility between Vineyard Avenue and Andreasen Drive, which would bisect the Palomar site on a north/south axis. Removal of this segment of Enterprise Street will require an amendment to the City of Escondido General Plan. The Palomar facilities will be developed within a planned industrial park. As discussed in Section 5.7, Land Use, the General Plan amendment to delete the extension of Enterprise Street through the Palomar site will be part of the development process for the Escondido Research and Technology Center (ERTC) industrial park.

The City of Escondido does not have weight and load limits that apply to the city roadways in the study area. The local roadways affected by the Palomar Energy Project are subject to a load limitation of 80,000 pounds per truck, per California Vehicle Code Section 35550.

The Palomar site is located south of Vineyard Avenue and east of the future Citracado Parkway extension through the Quail Hills Specific Plan Area (SPA). Development of the Citracado Parkway extension between Vineyard Avenue and Harmony Grove Road is planned as part of the proposed ERTC industrial park. Primary access to the Palomar site will occur from the following route:

- From I-5 or I-15 to Highway 78
- Exit Highway 78 at the Nordahl Road exit
- South on Citracado Parkway
- East on Vineyard Avenue

- South on future Citracado Parkway.

A windshield survey of the route to and from the project site did not identify reasonably discernible features that would effect public safety.

Figure 5.11-2. Existing and Future Transit Service

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Figure 5.11-3. Circulation Element Street Classifications

Citracado Parkway does not yet exist south of Vineyard Avenue. During initial industrial park development and preceding power plant construction, Citracado Parkway will be rough graded from Vineyard Avenue south to allow construction traffic to access the power plant site. At completion of Palomar construction, a two lane paved roadway off the completed Citracado Parkway extension right-of-way will provide permanent access to the power plant site. The power plant's administration building parking lot and the road encircling the power blocks also will be asphalt paved. Other roadways on the Palomar site will be gravel.

LOS criteria for freeway segments have been established by Caltrans, District 11, and take into account factors such as Annual Average Daily Traffic (AADT) volumes, peak hour factors, directional splits, and heavy vehicle use. The resulting peak hour directional volume is divided by the peak directional capacity to determine the Volume/Capacity (V/C) ratio. This ration represents the percentage of available capacity that is consumed by a given traffic volume. As shown in Table 5.11- 1, the V/C ratio is compared to a number of thresholds to identify LOS.

Table 5.11-1 LOS Thresholds for Freeway Segments

LOS	DESCRIPTION	V/C RATIO	
		6 Lanes (Highway 78)	8 Lanes (I-15)
A	Free Flow	<0.39	<0.42
B	Free to Stable Flow	0.40-0.59	0.43-0.62
C	Stable Flow	0.60-0.74	0.63-0.79
D	Approaching Unstable Flow	0.75-0.92	0.80-0.92
E	Extremely Unstable Flow	0.93-1.00	0.93-1.00
F(0)	Forced Flow	1.01-1.25	1.01-1.25
F(1)	Very Heavy Congestion	1.26-1.35	1.26-1.35
F(2)	Extremely Heavy Congestion	1.36-1.45	1.36-1.45
F(3)	Gridlock	>1.46	>1.46

LOS criteria for surface streets have been established in the SANTEC/ITE traffic study guidelines. LOS is determined by comparing the AADT on a segment to LOS thresholds identified for each roadway functional classification. In the study area, Nordahl Road and Citracado Parkway function as four lane major (i.e., divided) arterials. Vineyard Avenue is a two-lane collector with commercial/industrial fronting property. Table 5.11-2 summarizes the LOS thresholds for both two-lane collector and four-lane arterial roadways.

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Table 5.11-2 LOS Thresholds for Two-Lane Collectors and Four-Lane Arterials

LOS	AADT THRESHOLD	
	2 Lane Collector	4 Lane Major Arterial
A	2,500	15,000
B	3,500	21,000
C	5,000	30,000
D	6,500	35,000
E	8,000	40,000
F	>8,000	>40,000

It should be noted that, while ADT-based analysis is a useful planning tool for roadway sizing, it has less relevance in identifying roadway capacity than intersection analysis. The reasons for this are two-fold. First, flow on segments is controlled by the operation of intersections. Second, AADT-based analysis does not take into account traffic conditions during peak commuting periods, typically the most congested time of the day.

Level of Service for intersections was determined using 1997 Highway Capacity Manual Chapter 9 (Signalized Intersection) procedures published by The Transportation Research Board. Table 5.11-3 summarizes the LOS thresholds for peak hour intersection operations.

Table 5.11-3 LOS Thresholds for Peak Hour Intersection Operations

LOS	Delay per Vehicle (seconds)
A	10.0 or less
B	10.1-20.0
C	20.1-35.0
D	35.1-55.0
E	55.1-80.0
F	80.1 or greater

Table 5.11-4 presents data on the existing traffic characteristics on freeways potentially affected by the proposed project. The information provided in Table 5.11-4 includes the annual average daily traffic (AADT), annual average peak hour traffic, and annual average daily truck traffic, volume-to-capacity ratios, and LOS for the potentially affected freeways.

Table 5.11-5 summarizes the existing conditions of the surrounding roadway network and intersections that potentially will be affected by the proposed project. The table identifies the roadway classification and AADT data, the capacity of the roads, and LOS. LOS was determined based on the thresholds established by SANTEC/ITE, as described above.

Table 5.11-4 Existing Traffic Characteristics of Freeways in the Project Area

Highway	Milepost	Location	Annual Average Daily Traffic ¹	Peak Hour Traffic ¹	Annual Average Daily Truck Traffic ²	Percentage of Truck Traffic ³	V/C ⁴	LOS ¹
Highway 78	14.24	San Marcos Bl. to Nordahl Road	143,100	8%	5,700	4%	1.03	F(0)
	15.49	Nordahl Rd. to Jct. I-15	148,500	7%	6,000	4%	1.01	F(0)
I-15	30.63	Valley Pkwy. to Highway 78	184,800	8%	7,000	4%	0.97	E
	32.68	Highway 78 to El Norte Parkway	102,500	7%	4,000	4%	0.65	C

¹ Source: Year 2000 Traffic Volumes on the California State Highway System (Caltrans District 11, 2000).

² Estimated based on truck percentages supplied by Caltrans

³ Estimated based on 1987 counts

⁴ V/C = peak hour volume to capacity ratio. This is calculated by applying peak hour, directional split, and heavy vehicle factors to the AADT to determine the peak directional volume. This volume is then divided by the peak directional capacity to determine the V/C ratio. Caltrans has established LOS thresholds based V/C ratios for various types of freeways and highways.

**Table 5.11-5 Existing Traffic Characteristics of Local Roads
and Intersections in the Project Area**

Roadway	Location	Annual Average Daily	Capacity (E)	LOS
Nordahl Road	South of Highway 78	35,000	40,000	D
Citracado Parkway	South of Mission Road	16,400	40,000	B
Vineyard Avenue	East of existing Citracado Parkway	16,700	8,000	F

Intersection	AM Peak		PM Peak	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Nordahl Road/Highway 78WB	16.7	B	29.6	C
Nordahl Road/Highway 78EB	9.6	A	30.2	C
Mission Road/Nordahl Road/Citracado Parkway	27.2	C	25.0	C

Source: SANDAG, 2001

Vehicle classification counts conducted in May 2001 indicate that trucks comprise approximately 35 percent of the total traffic volume on Citracado Parkway south of Mission Road and on Vineyard Avenue, east of Citracado Parkway.

As shown in the Table 5.11-5, Vineyard Avenue is exceeding its ADT-based capacity under existing conditions. However, as discussed in preceding paragraphs, the ADT-based thresholds understate capacity, since they do not take into account peak hour operations at controlling intersections. At the intersections expected to be most impacted by project workforce traffic, peak hour LOS is characterized by LOS C or better conditions.

5.11.2 Environmental Impacts

The significance criteria used to evaluate Palomar project impacts on local roadways, intersections and freeways are based on Guidelines for Traffic Impact Studies in the San Diego Region (SANTEC/ITE, Final Draft, March 2, 2000). LOS D is the minimum acceptable for planning purposes; LOS E and F are considered unacceptable. Significance criteria for the transportation facilities analyzed in this report are summarized in Table 5.11-6.

Table 5.11-6 Traffic Impact Significance Thresholds

Facility	Measurement Of Effectiveness	Significance Threshold ⁽¹⁾
Roadway Segment (ADT-based)	Volume-to-Capacity Ratio (V/C)	V/C Change >0.02
Intersection (Peak Hour)	Seconds of Delay	Change >2.0
Freeway Segment (Peak Hour)	V/C	V/C Change >0.02

(1) Where the roadway or intersection is characterized by LOS D, E, or F conditions.

As shown in Table 5.11-6, significant impacts depend both on the additional traffic volumes generated by a project, and on the existing traffic conditions on the affected roadways. When a roadway is at LOS D, E, or F, changes greater than 0.02 (2 percent) in V/C represent a significant impact. If the roadway is operating at Level C or better, such a change would not cause a significant impact.

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

The following sections assess Palomar project traffic and transportation impacts during both construction and operations. Project construction 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. Project operations will result in long-term, minor increases in traffic associated with plant employees and the movement of vehicles serving the plant.

5.11.2.1 Construction Phase Impacts

In order to assess the magnitude and directional variation of vehicle trips associated with Palomar facility construction, vehicle trip generation and distribution were analyzed, using the workforce data shown in Table 5.11-7.

Construction of the power plant facility will occur over an estimated 21-month period and will require a average construction workforce of 240 workers per month, assuming a single shift and a 40-hour workweek. During the peak construction period (the eleventh month after initiation), an estimated 350 construction workers will be required.

Workforce Vehicle Trips

Table 5.11-7 summarizes the origins and distribution of the workforce. Table 5.11-8 presents the projected vehicle trips generated by construction of the power plant, including the peak and average vehicle trips.

Table 5.11-7 Project Construction Workforce Distribution

Origin of Vehicle Travel to Palomar Energy Project	Distribution of Workforce¹	# of Workers (Average)	# of Workers (Peak)
To/From North via Nordahl Road	20%	48	70
To/From West via Highway 78	20%	48	70
To/From East via Highway 78	20%	48	70
To/From West via Mission Road	15%	36	53
To/From East via Mission Road	5%	12	17
To/From East via Vineyard Avenue	20%	48	70
TOTAL	100%	240	350

¹ Determined by percentage distribution from turning movement counts conducted by Southland Car Counters, May 2001

Table 5.11-8 Project Construction Vehicle Trip Generation and Workforce Distribution

Origin of Trip Distribution To/From Palomar Energy Project	Average Workforce	Average Vehicle trips	Peak Workforce	Peak Daily Vehicle Trips
To/From North via Nordahl Road	48	96	70	140
To/From West via Highway 78	48	96	70	140
To/From East via Highway 78	48	96	70	140
To/From West via Mission Road	36	72	53	106
To/From East via Mission Road	12	24	17	34
To/From East via Vineyard Avenue	48	96	70	140
TOTAL	240	480	350	700

In a worst-case traffic scenario, it is assumed that each of the 240 workers will drive a separate vehicle to the Palomar site, making two trips per day (one round trip from home to the site and back). Therefore, as shown in Table 5.11-8, project construction could result in a total of approximately 480 vehicle trips per day on average, and about 700 vehicle trips per day for the 350 workers during the peak construction period. As shown in Table 5.8-6, the peak workforce of about 350 workers will last for about three months, from months 10 to 12 in the 21-month project construction schedule. Parking for construction personnel and visitors will be provided in an area adjacent to the power plant construction site, but within the overall ERTC industrial park site. Access from existing streets to the plant site for construction traffic will be provided via a rough graded access road along the alignment of the future Citracado Parkway.

There is the potential for some workers to commute via public transit and/or carpooling. A travel behavior survey in the San Diego region (SANDAG, 1987) indicated that the peak home-to-work vehicle occupancy was 1.05. However, a vehicle occupancy factor of 1.0 was assumed for this analysis, in order to provide a worst-case evaluation.

Preferred Routes of Travel by Workers

It is assumed that the route preferred by Palomar project construction workers would be consistent with existing travel patterns in the study area. Data on existing traffic patterns were based on traffic counts by Southland Car Counters in May 2001. Morning peak hour inbound turning movement volumes were used to estimate the orientation of project trips.

Impacts of Workforce Traffic on Freeways

Using the travel pattern assumptions described above, Table 5.11-9 shows that the addition of Palomar project construction traffic would not result in significant traffic-related impacts or a deterioration of freeway segment LOS. The construction phase traffic increases shown in Table 5.11-9 would be short-term, occurring only during the peak construction period. Construction workforce traffic would generally occur between roughly 6:30 a.m. and 7:30 a.m., and again between 4:00 p.m. and 5:00 p.m.

Table 5.11-9 Distribution of Project Peak Construction Traffic on Freeways

Highway	Existing V/C	Existing LOS	Existing Daily Volume	Project Peak Daily Traffic	Existing + Project V/C	Existing + Project LOS
Highway 78						
San Marcos Bl. to Nordahl Rd.	1.03	F(0)	143,000	140	1.03	F(0)
Nordahl Rd. to Jct. I-15	1.01	F(0)	168,500	140	1.01	F(0)
I-15						
Valley Pkwy. to Highway 78	0.97	E	184,800	140	0.97	E
Highway 78 to El Norte Parkway	0.65	C	102,500	96	0.65	C

Impacts of Workforce Traffic on Local Roads and Intersections

The City of Escondido roadways providing access from Highway 78 to the project site (specifically Citracado Parkway) will be the ones most affected by construction workforce traffic commuting to and from the project site. Anticipated increases in local traffic are presented in Table 5.11-10. During the peak construction period, traffic on Citracado Parkway north of Vineyard Avenue will increase by 560 vehicle trips/day. On average, construction related traffic generated by the workforce along Citracado Parkway will increase by 356 vehicle trips/day. Traffic increases will be most apparent during the morning and evening peak commute hours between approximately 6:30 a.m. and 7:30 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 5.11-10, Citracado Parkway has a capacity of 40,000 vehicles per day. The capacity of this roadway is more than sufficient to accommodate existing and project peak construction traffic without generating a significant impact as defined by SANTEC/ITE, or causing LOS to decline below the minimum performance standard of LOS D. On Vineyard Avenue, LOS will be characterized by congested LOS F conditions with or without the project when evaluated in terms of ADT rather than intersection capacity. However, even in terms of ADT, the impact of project traffic on Vineyard Avenue will be below the level of significance defined by SANTEC/ITE (a project-caused increase of two percent). Peak hour intersection capacity will continue to be characterized by LOS C or better conditions during both peak hours, even with the addition of Palomar project traffic.

Table 5.11-10 Distribution of Project Peak Construction Traffic and Impacts on Local Roads and Intersections

Local Road	Existing AADT	Average Project Trips/Day	Peak Project Trips/Day	Capacity (E)	LOS	Increase
Nordahl Road South of Highway 78	35,000	288	420	40,000	D	1.1%
Citracado Parkway South of Mission Road	16,400	384	560	40,000	B	1.4%
Vineyard Avenue East of existing Citracado Parkway	16,700	96	140	8,000	F	1.8%

Intersection	AM Peak		PM Peak	
	Delay (seconds)	LOS	Delay (seconds)	LOS
Nordahl Road/Highway 78WB	18.6	B	33.6	C
Nordahl Road/Highway 78EB	11.9	B	34.9	C
Mission Road/Nordahl Road/Citracado Parkway	31.2	C	28.1	C

Construction Equipment and Material Deliveries

Construction of the power plant will require the use and installation of heavy machinery and associated systems and structures. Heavy equipment will be used throughout the construction

period and will include trenching and earthmoving equipment, forklifts, cranes, cement mixers, and drilling equipment. Construction materials, such as concrete, wire, pipe, cable, fuels, reinforcing steel, and consumables, also will be delivered to the site by truck.

The peak number of truck deliveries will be about 30 per day. Deliveries will include periodic deliveries of small quantities of hazardous materials for project construction. These would include paints, solvents, gasoline, diesel fuel and lubricants for construction equipment. Whenever possible, deliveries will be scheduled for the hours on weekdays outside the 7-9 a.m. and 4-6 p.m. peak traffic periods. It is assumed that the majority of these materials will be transported from within San Diego County. Vehicles used during project construction that are over-size, over-weight, over-width, or over-length will require a transportation permit from Caltrans.

Distribution of Truck Traffic and Routes of Travel

Project construction is expected to generate an average of 12 truck deliveries per day and a peak of 30 deliveries per day. It is assumed that all truck traffic would access the site via the following route:

1. Highway 78 to Nordahl Road
2. Nordahl Road to Citracado Parkway
3. Citracado Parkway to Vineyard Avenue
4. Vineyard Avenue to project access

Impacts of Truck Traffic on Freeways

Table 5.11-11 compares the construction-related truck traffic traveling to the Palomar Energy site to existing automobile and truck traffic on the I-15 and Highway 78 freeways. The average project-related truck trips per day on the freeways 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

Table 5.11-11 Impacts of Project Peak Construction Truck Traffic on Freeways

Freeway	Existing AADT	Existing Truck AADT	Projected Peak Truck Trips/Day	Increase
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Highway 78

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San Marcos Bl to Nordahl Rd.	143,100	5,700	30 ¹	Less than 1%
Nordahl Rd. to I-15	148,500	6,000	30 ¹	Less than 1%

¹ Assumes a 50/50 east-west orientation of truck traffic on Highway 78.

Impacts of Truck Traffic on Local Roadways

Trucks traveling to the site will use Nordahl Road and Citracado Parkway via Highway 78. As shown in Table 5.11-12, construction-related truck traffic will result in a 1.1 percent increase in truck traffic on Citracado Parkway. Due to the size and weight of these trucks, these increases would likely contribute to some wear on Citracado Parkway, which may hasten the need slightly for regular roadway maintenance. However, project-related roadway wear and tear is not expected to result in a significant adverse impact.

Table 5.11-12 Distribution and Impact of Construction Truck Traffic on Local Roads

Local Road	Truck Existing AADT	Projected Peak Truck Trips/Day ¹	Increase
Citracado Parkway			
North of Vineyard Av.	5,700	60	1.1 %

¹ Assumes 30 truck trips/day during the peak construction period, to/from all directions.

Construction debris and small quantities of hazardous wastes will be generated during project construction. During construction, an average of approximately two truck trips per month will be required to haul waste for disposal. Hazardous wastes that will be used during construction include fuels for construction equipment and vehicles and small quantities of solvents and parts. Transportation of hazardous materials to and from the project site will be conducted in accordance with California Vehicle Code Section 31300 et seq. Transport of hazardous wastes will be conducted in accordance with all applicable transportation regulations; therefore, no significant impact is expected.

Pipeline Construction Impacts

Water and wastewater pipelines will be installed within the right-of-way of Harmony Grove Road between the future extension of Citracado Parkway at the south end of the Quail Hills Specific Plan Area (which is being retitled the Escondido Research and Technology Specific Plan Area), and the north side of the bridge over Escondido Creek, a distance of approximately 3,000 feet. Also, a 2,600-foot segment of natural gas pipeline will be upgraded along Metcalf Street and Lincoln Avenue in central Escondido. Both Lincoln and Metcalf have ADT volumes of approximately 2,000 (SANDAG, 2001). These volumes indicate that operations on both roadways are characterized by good traffic conditions (LOS C or better).

The water/wastewater pipeline construction work will take less than six months, while the gas pipeline upgrade will take up to three months. In both cases, pipeline construction activities will temporarily disrupt traffic flows along the affected roadways.

5.11.2.2 Operations Phase Impacts

Palomar Energy Project Operations

Operation of the power plant will require a labor force of approximately 20 full-time employees. Assuming that each employee will drive a separate vehicle to work and that they will make one round trip from home to work per day, operation of the plant will generate approximately 40 vehicle trips per day. On-site parking will be available for employees on a paved lot adjacent to the administration building. It is assumed that the permanent workforce would use the same routes to access the site as the construction workers (see Table 5.11-7). These travel routes will easily accommodate the operations related traffic.

During project operation, about five truck deliveries per month of aqueous ammonia will be made to the plant site. Other materials will be delivered by truck to the plant site on an infrequent basis. The anticipated travel routes for materials delivery will be on Nordahl Road/Citracado Parkway via Highway 78. Overall, the number of truck deliveries to the site will be insignificant.

Some of the hazardous wastes 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 5.13, Waste Management. It is estimated that hazardous wastes generated onsite will be transported offsite by truck for disposal periodically by licensed hazardous waste transporters. An average of three shipments per month would be expected. Traffic impacts would not be significant.

Palomar project operations will generate traffic that can easily be accommodated by the existing roadway system. Operation of the proposed power plant: 1) will not generate substantial vehicular movement; 2) will not alter present patterns of circulation; 3) will not alter waterborne, rail, or air traffic; 4) will not substantially increase traffic hazards to motor vehicles, bicyclists, or pedestrians; 5) will not violate adopted LOS standards; 6) will not generate traffic for which affected routes are not suitable; and 7) will not create demand for new parking that cannot be accommodated by the project design. Therefore, the proposed project is not expected to result in significant long-term impacts on the local transportation system.

Water Supply, Wastewater and Natural Gas Pipeline Operations

Occasional maintenance activities along the various pipelines during project operations will result in minimal disruption of local roads, intersections and freeways, and will cause no significant impact.

5.11.3 Mitigation Measures

5.11.3.1 Construction Phase

Project construction will add a moderate amount of traffic to local highways and roadways during the peak construction period. However, the project will represent a minor increment to existing volumes, will not cause any transportation facility to deteriorate below the minimum performance standard of LOS D, and will not generate significant traffic-related impacts, as defined by SANTEC/ITE. Traffic impacts during project operations will be minimal because of the small operational work force (20 employees spread over multiple shifts). The following mitigation measures are proposed to minimize potential adverse but non-significant construction phase impacts.

- TR-1.** Utilize proper signage and traffic control measures in accordance with City of Escondido requirements.
- TR-2.** Coordinate offsite pipeline construction activities with appropriate City of Escondido agencies and implement traffic control plans to minimize impacts and ensure continuous operations on Harmony Grove Road, Metcalf Street, and Lincoln Street during pipeline construction activities.
- TR-3.** Construct offsite pipelines in accordance with applicable City of Escondido encroachment permit requirements. Cover trenches (e.g., using metal plates) in roadways during non-working hours.
- TR-4.** Restrict construction phase truck traffic (e.g., materials and equipment deliveries) to utilize the Highway 78/Nordahl Road/Citracado Road /Vineyard Avenue route to and from the site. Construction phase truck traffic should be discouraged from using Auto Park Way/Vineyard Avenue.
- TR-5.** Restrict transportation of hazardous materials and wastes during both construction and operations to the Highway 78/Nordahl Road/Citracado Road/Vineyard Avenue route to and from the site. Transportation of these materials/wastes should be discouraged via Auto Park Way/Vineyard Avenue.

5.11.3.2 Operations Phase

The total number of trips generated by employees and truck deliveries during peak hours will be very small and will have a minimal impact on local traffic and transportation facilities. Other than the restriction of hazardous materials/wastes transportation routes to and from the power plant site to the freeways/major streets i.e., Highway 78/Nordahl Road/Citracado Parkway/Vineyard Avenue (see TR-5 above), no mitigation is needed.

5.11.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse traffic impacts are anticipated as a result of the Palomar Energy Project.

5.11.5 Cumulative Impacts

The projects included in the cumulative assessment are two small (<50 MW) electric generating plants (CalPeak and RAMCO) currently under development in the project vicinity and the overall industrial park within which the Palomar site is located. The two small power plant projects are expected to be in operation in 2001, well before the Palomar Energy Project begins construction.

The transportation analysis of the available capacity of the regional state routes shows that the regional transportation system serving the project vicinity has sufficient capacity to accommodate Palomar construction and operation-related traffic. Roadways predominantly affected by all four projects (Palomar Energy Project, ERTC industrial park, and the two small power plants) include I-15, Highway 78, Nordahl Road, Citracado Parkway and Vineyard Avenue. As stated above, construction of the two nearby power plants will be completed before Palomar construction begins. There will be no full time employees onsite at the two small power plants, because the facilities are remotely operated. Thus, the two small power plant projects will have no cumulative effects, when considered together with the Palomar project, during either construction or operation.

The cumulative effects of the Palomar Energy Project together with the industrial park project are analyzed in the following paragraphs.

Overall ERTC Industrial Park Construction

Industrial park construction, and thus the associated traffic flows and potential impacts, is expected to begin in 2002 and continue until 2008. Assuming that each construction worker would drive a separate vehicle to and from work, construction traffic volumes would be expected to be approximately 80 trips per day in 2002, and 300 trips per day from 2003 to 2008. Potential cumulative traffic impacts would be greatest late in 2003 when Palomar construction is at its peak (700 trips per day, as analyzed in Section 5.11.2 above). Thus, late in 2003, the combined construction-related traffic volumes could be up to 1,000 trips per day. Late in 2003 and early in 2004, there also would be the initial traffic volumes associated with operations at the industrial park, as the first industrial park facilities are completed and occupied. This would add up to additional 1,560 trips per day to the roadways in the project vicinity. However, by the beginning of 2004, Palomar project construction traffic volumes would be declining as the peak construction period would have passed.

The Environmental Impact Report being prepared as part of the City of Escondido's CEQA review of the ERTC industrial park project will address in detail the traffic impacts of the industrial park, and identify possible mitigation measures, as required. Possible mitigation measures could include carpooling by construction workers and industrial park permanent employees that would reduce the incremental traffic volumes.

Planning Area 1 Construction Phase Earthwork

Earthwork for Planning Area 1 (the Palomar site) and for the overall industrial park will be performed in an integrated manner. Total traffic volumes during the initial earthwork for the overall industrial park, including Planning Area 1, are estimated at 80 trips per day. As shown in Section 5.11.2, peak Palomar project construction phase traffic volumes of 700 trips per day would not have a significant adverse impact on traffic conditions on local roadways. The traffic volumes during the earthwork phase that precedes the other construction activities for the power plant and the rest of the ERTC industrial park would be only approximately 11 percent of the peak power plant construction volumes (80 trips per day compared to 700 during peak power plant construction). Thus, no significant traffic impacts would be expected during the initial earthwork phase.

ERTC Industrial Park Operations

Because of its small operational workforce (20 workers), the Palomar project will have a minimal impact on cumulative traffic conditions during its operational phase. As mentioned above, the traffic issues associated with the ERTC industrial park will be analyzed in the CEQA document being prepared under the auspices of the City of Escondido.

5.11.6 LORS Compliance

Design, construction and operation of the proposed will be conducted in accordance with all LORS applicable to traffic and transportation. The applicable LORS are discussed in Section 6.4.11.

5.11.7 Involved Agencies and Agency Contacts

Agencies and agency contacts relevant to traffic and transportation for the Palomar Energy Project are provided in Table 5.11-13.

Table 5.11-13 Involved Agencies and Agency Contacts

Agency/Address	Contact/ Telephone	Permits/Reason for Involvement
Escondido Public Works Department 201 N. Broadway Escondido, CA 92025	Fred Ludke (760) 839-4573	Encroachment Permits
California Department of Transportation South Region Permits Office	(909) 383-4637	Oversize/Overweight Load Permits

5.11.8 Permits Required and Permit Schedule

Agency-required permits related to traffic and transportation are summarized below in Table 5.11-14. The listed agencies will be contacted to obtain the necessary permits at the appropriate time.

Table 5.11-14 Permits Required and Permit Schedule

Permit/Approval Required	Schedule
City of Escondido Encroachment Permit	6-8 weeks for processing prior to construction
Oversize/Overweight Load Permits	As needed, four weeks prior to delivery

5.11.9 References

San Diego Association of Governments. 2001. San Diego Region Average Weekday Traffic Volumes, 1996-200.

San Diego Association of Governments. 2000. 2000 Regional Transportation Improvement Program.

San Diego Association of Governments. 2000. 2020 Regional Transportation Plan.

City of Escondido. 1990. City of Escondido General Plan. May 1990.

California Department of Transportation, District 11. 2000. Year 2000 Traffic Volumes, Adjustment Factors and LOS Thresholds.

San Diego Traffic Engineers' Council (SANTEC)/Institute of Transportation Engineers (SANTEC/ITE).2000. SANTEC/ITE Guidelines of Traffic Impact Studies in the San Diego Region, Final Draft. March 2, 2000.

Southland Car Counters. May 2001. Traffic Counts in Vicinity of Palomar Energy Project Site.