

## 5.13 Traffic and Transportation

This section of the Application for Certification (AFC) assesses the potential impacts to the transportation system due to activities associated with construction and operation of the Palen Solar Power Project (PSPP or Project). The section addresses applicable laws, ordinances, regulations and standards (LORS); describes the existing transportation system (vehicular, rail, and air) and current traffic conditions; evaluates potential Project impacts; and identifies mitigation measures that would avoid, minimize, or compensate for adverse impacts.

The traffic and transportation evaluation presented in the following pages is intended to support compliance both by the California Energy Commission (CEC) with the requirements of the California Environmental Quality Act (CEQA), and by the Bureau of Land Management (BLM) with the requirements of the National Environmental Policy Act (NEPA). The two agencies are conducting a joint review of the Project and a combined CEQA/NEPA document will be prepared.

### Summary

The Project's traffic and transportation impacts would be less than significant. At the peak of the construction period, about 1,140 workers and vehicles will increase traffic volumes on the U.S. Interstate 10 (I-10) freeway, the primary access to the Project vicinity. However, current and expected future freeway volumes are light and the increased traffic would not affect traffic flow conditions. The few other local roadways in the area would be unaffected. Site access will be from the I-10 interchange at Corn Springs Road, an existing stop sign-controlled diamond interchange. Corn Springs Road will be improved and extended a short distance into the Project site. Traffic operations at the intersection of the westbound I-10 off ramp at Corn Springs Road would be congested (Level of Service E) during the morning peak period at peak construction if all 1,140 workers in individual vehicles arrived at the work site at the same time. However, with Applicant-proposed mitigation that would reduce peak employee vehicle volumes substantially (van pools, park and ride, shuttle buses, etc., or staggered shift start times), the intersection would operate at an acceptable level.

The total work force of 134 people associated with 24-hour/7-days a week plant operation would have minimal traffic impacts. The Project would have minimal impacts on rail traffic (maximum of a few rail deliveries during construction). The Project is not near an airport and would not include structures of sufficient height to interfere with aviation activities; thus aviation impacts would not be significant.

All access ways to and from the proposed Project, including I-10 East, I-10 West, I-10 Eastbound and Westbound ramps, Corn Springs Road, and Chuckwalla Valley Road, are forecast to operate at LOS A-B in morning and afternoon hours through year 2014 with or without the Project assuming recommended mitigation. This includes the year 2012 when Project construction traffic is anticipated to be at its peak. A substantial number of large renewable energy projects are proposed in the corridor and, if construction schedules overlap, the cumulative increase in traffic volumes along I-10 would be sizable (a maximum of perhaps as many as 4,000 workers involved in energy construction in the area). There is ample remaining capacity on I-10, however, and there is no other project close enough to the PSPP site to need to use the I-10 Corn Springs Road interchange. Each project would be responsible for addressing its own congestion issues at and near its own site. Thus, the PSPP would not have cumulatively considerable traffic and transportation impacts.

### 5.13.1 LORS Compliance

The Project will comply with all applicable LORS pertaining to traffic and transportation. The applicable Federal, state, and local LORS are summarized in Table 5.13-1, and discussed in the text following the table. Non-applicable federal and state LORS are also discussed, and justification for eliminating these LORS from further evaluation is provided.

**Table 5.13-1 Summary of Applicable Traffic and Transportation LORS**

LORS	Applicability	Where Discussed in AFC
<b>Federal:</b>		
Title 49 Code of Federal Regulations (CFR) Subtitle B, Parts 171-173, 177-178, 350-359, 397.9 and Appendices A-G	Addresses safety considerations for the transport of goods, materials, and substances. Governs the transportation of hazardous materials including types of materials and the marking of the transportation vehicles.	Sections 5.13.3 and 5.13.4
Title 14 CFR Aeronautics and Space, Chapter I, FAA-DOT, Part 77	Establishes standards for determining obstructions in navigable air space and sets forth notification of Federal Aviation Administration (FAA) requirements when there is any change.	Section 5.13.3
Objects Affecting the Navigable Air Space: Title 14 CFR Part 77	Describes the criteria used to determine the need for a FAA "Notice of Proposed Construction or Alteration" in cases of potential obstruction hazards and requires applicant to submit form for construction near airport.	Section 5.13.3
Federal Communications Commission (FCC) Regulations: Title 47 CFR Section 15.2524	Prohibits operation of devices that can interfere with radio-frequency communication.	Sections 5.13.3 and 5.14.3
<b>State:</b>		
California Vehicle Code Sections 353 and 2500-2505	Defines hazardous materials and authorizes the issuance of licenses for the transport of hazardous materials.	Sections 5.13.3 and 5.13.4
California Vehicle Code Sections 13369; 15275 and 15278	Addresses the licensing of drivers and the classification of licenses required for the operation of particular types of vehicles; also require certificates permitting operation of vehicles transporting hazardous materials.	Sections 5.13.3 and 5.13.4
California Vehicle Code Sections 31303-31309	Regulates the highway transport of hazardous materials, the routes used, and restrictions on those facilities.	Sections 5.13.3 and 5.13.4
California Vehicle Code Sections 35780	Requires permits for any load exceeding Caltrans weight, length, or width standards for public roadways.	Sections 5.13.3

**Table 5.13-1 Summary of Applicable Traffic and Transportation LORS**

<b>LORS</b>	<b>Applicability</b>	<b>Where Discussed in AFC</b>
California Vehicle Code Sections 31600-31620	Regulates the transportation of explosive materials.	Sections 5.13.3
California Vehicle Code Sections 32100-32109	Establishes special requirements for the transportation of inhalation hazards and poisonous gases.	Sections 5.13.3
California Vehicle Code Sections 32000-32053	Regulates the licensing of carriers of hazardous materials including noticing requirements.	Sections 5.13.3 and 5.13.4
California Vehicle Code Sections 34000-34121	Establishes special requirements for the transportation of flammable and combustible liquids over public roads and highways.	Sections 5.13.3
California Vehicle Code Sections 34500-et seq.	Regulates the safe operation of vehicles, including those that are used for the transportation of hazardous materials.	Sections 5.13.3
California Health and Safety Code Section 25160 et. seq.	Requires an authorized representative of the generator or facility operator that is responsible for loading hazardous waste into a transport vehicle shall, prior to loading, ensure that the driver of the transport vehicle is in possession of the appropriate class of driver's license and any endorsements required to operate the transport vehicle with the intended load.	Sections 5.13.3 and 5.13.4
California Streets and Highways Code, Sections 117, 660-72	Requires permits for any load exceeding Caltrans weight, length, or width standards on County Roads.	Sections 5.13.3
California Streets and Highways Code, Sections 117, 660-670, 1450, 1460 et seq., and 1480 et seq.	Regulates permits from Caltrans for any roadway encroachment for facilities that require construction, maintenance, or repairs on or across State highways and county roads.	Sections 5.13.3 and 5.13.4
California Vehicle Code, Section 35100 et seq., Section 35250 et seq., and Section 35400 et seq.	Specifies limits for vehicle width, height, and length.	Sections 5.13.3
<b>Local:</b>		
Riverside County General Plan Circulation Element and Palo Verde Valley Area Plan	Specifies long-term planning goals and procedures for transportation infrastructure system quality; standards and procedures for air transportation; and transportation safety in Riverside County.	Sections 5.13.3 and 5.13.4
Riverside County General Plan Circulation Element	System Design, Construction, and Maintenance specifies standards for new road construction and future extensions of existing streets.	Sections 5.13.3

**Table 5.13-1 Summary of Applicable Traffic and Transportation LORS**

<b>LORS</b>	<b>Applicability</b>	<b>Where Discussed in AFC</b>
Riverside County General Plan Circulation Element	LOS standards are used to assess the performance of a street or highway system and the capacity of a roadway.	Sections 5.13.3
Riverside County Municipal Code Title 10, Chapter 10.08, sections 10.08.010 – 10.08.180	Specifies limits and permit requirements for oversize loads.	Sections 5.13.3 and 5.13.4
Riverside County Municipal Code Title 12, Chapter 12.08, sections 12.08.010 – 12.08.100	Specifies permit requirements for encroachment permits.	Sections 5.13.3 and 5.13.4

### 5.13.1.1 Federal LORS

Federal laws and regulations that could apply to this Project include the following:

- Title 49 CFR Subtitle B, Chapter I, Hazardous Materials Regulations, addresses the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of vehicles transporting hazardous materials.
- Title 49 CFR Subtitle B, Chapter I; Parts 171-173 and 177-178 contain national safety standards for the transport of goods, materials, and substances over public highways and require proper handling and storage of hazardous materials during transportation.
- Title 49 CFR Subtitle B, Chapter III, Subchapter B addresses safety considerations for the transport of goods, materials, and substances over public highways.
- Title 14 CFR Part 77 establishes standards for determining obstructions in navigable air space and sets forth notification requirements to the FAA when there is a change in land use that would involve the development of any structures over 200 feet above ground level. Notification is also required if the obstruction is less than the specified height and is located within restricted air space in the approach to airports.
- FAA Advisory Circular No. 70/7460-2K, “Proposed Construction and/or Alteration of Objects that May Affect the Navigable Air Space” describes FAA Standards for marking and lighting of obstructions identified by 14 CFR Part 77.

Because the Project will involve truck shipments of hazardous materials (e.g., propane), the three items above from Title 49 CFR apply to the PSPP. Because the Project is not near an airport and involves no structures approaching 200 feet in height, the two aviation LORS above do not apply to the PSPP.

### 5.13.1.2 State LORS

State laws that could apply to the Project include the following:

- California Vehicle Code Division 1, Section 353 defines hazardous materials.
- California Vehicle Code Division 14, Transportation of Explosives, Sections 31303-31309 regulate the transportation of hazardous materials, the routes used, and restrictions thereon.
- California Vehicle Code Division 14.1, Transportation of Hazardous Materials, Sections 32000-32053 regulate the licensing of carriers of hazardous materials including noticing requirements.

- California Vehicle Code Division 14.3, Sections 32100-32109 create a special category of inhalation hazards and poison gases and establishes special safeguards for their transport.
- California Vehicle Code Division 14.7 Flammable and Combustible Liquids, Sections 34000-34121 address the transportation of flammable and combustible liquids over public roads and highways.
- California Vehicle Code Division 14.8 Safety Regulations, Sections 34500 *et seq.*, address the safe operation of vehicles, including those that are used for the transportation of hazardous materials.
- California Vehicle Code Division 2 Administration, Chapter 2.5, Article 1, Sections 2500-2505 authorizes the issuance of licenses by the Commissioner of the California Highway Patrol for the transportation of hazardous materials.
- California Vehicle Code Division 6 Driver's Licenses, Division 6, Chapter 2, Article 3, Section 13369; and Chapter 7 Article 6, Sections 15275-15278 address the licensing of drivers and the classification of licenses required for the operation of particular types of vehicles; also require certificates permitting operation of vehicles transporting hazardous materials.
- California Vehicle Code Division 15 Size, Weight, and Load, Chapter 5, Article 6 Section 35780 states that overload approvals from the State Department of Transportation (Caltrans) are required for transportation of oversized or excessive loads over State highways.
- Health and Safety Code Section 25160.7 requires an authorized representative of the generator or facility operator that is responsible for loading hazardous waste into a transport vehicle shall, prior to loading, ensure that the driver of the transport vehicle is in possession of the appropriate class of driver's license and any endorsements required to operate the transport vehicle with the intended load.
- California Streets and Highways Code Sections 117, 660-711 require permits for the transport of oversize loads.
- California Streets and Highways Code Sections 660, 670, 1450, and 1460 *et seq.* regulate right-of-way encroachment and the granting of permits for encroachment on State and county roads.
- California Government Code Sections 65352, 65940, and 65944 require evaluation of compatibility with military activities for any land use proposal located near a military installation or airspace. Since the Project would not be located near any military installations or airspaces, the required evaluations would not be necessary.
- California Vehicle Code, Sections 35100-35559, specify limits for vehicle width, height, length, and gross weight. Specifically, Section 35550 states: "The gross weight imposed upon the highway by the wheels on any one axle of a vehicle shall not exceed 20,000 pounds and the gross weight upon any one wheel, or wheels, supporting one end of an axle, and resting upon the roadway, shall not exceed 10,500 pounds."

Project construction and operation will involve the transport of various hazardous materials, such as liquid fuels (gasoline and diesel), and propane (fuel for facility startup). The Project also will involve a small number of oversized loads during construction (a few large Project components), and road improvements to provide site access. The above LORS cover a broad range of regulatory requirements that apply to the above Project activities.

### 5.13.1.2 Local LORS

Applicable local LORS include the following:

- Riverside County General Plan Circulation Element, Section 2.1 sets a County Policy objective of maintaining Level of Service (LOS) C on county roads and LOS C on conventional Highways. The Circulation Element also establishes classification, design, and right-of-way (ROW) requirements for the future extension of existing roads and construction of new roads.
- Riverside County General Plan Desert Center Area Plan establishes that I-10, from its junction with State Route 62 to the Colorado River, is identified as a candidate route that should be included in the California State Scenic Highway Program, but has to be designated as an eligible or official scenic highway. I-10 provides a panoramic view of the immense Colorado Desert. Regardless of its designation, it is consistent with the Riverside County Vision to protect the scenic value of this route.
- Riverside County General Plan Palo Verde Valley Area Plan establishes that I-10, from its junction with State Route 62 to the Colorado River, has been nominated for County Scenic Highway status, due to its scenic value. While this segment has not been designated as eligible for official Scenic Highway status in accordance with the California Scenic Highways Program, it should be preserved as a potential scenic corridor for the State Program according to the Palo Verde Valley Area Plan.
- Riverside County Municipal Code 10.08.010 – 10.08.180 establishes requirements and permits for oversize and overweight vehicles.
- Riverside County Municipal Code 12.08.010 – 12.08.100 establishes requirements and permits for excavations and encroachments on county roads.

The above County LORS relate to traffic flows, the scenic qualities of I-10, and road usage and improvement. All of these issues apply to the Project.

### 5.13.1.3 Agencies and Agency Contacts

Table 5.13-2 identifies agency contacts for traffic and transportation matters associated with the Project.

**Table 5.13-2 Agencies and Agency Contacts**

Agency Contact	Phone/E-mail	Permit/Issue
Dan Castillo Transportation Engineer/Technician Riverside County Desert Permit Assistance Center 38686 El Cerrito Road Palm Desert, CA 92211	(760) 863-7044 dcastillo@rctlma.org	Encroachment Permit for work in the County ROW and permits for Oversize Loads on County Roadways
Reza Moslemi Transportation Engineer/Permit Writer Caltrans, District 8 464 W. 4 <sup>th</sup> Street, Mail Station 619 San Bernardino, CA 92401	(909) 383-5955 reza_moslemi@dot.ca.gov	Encroachment Permit for work in Caltrans' ROW
L.R. Collier Transportation Engineer/Permit Writer Caltrans, District 8 464 W. 4 <sup>th</sup> Street	(909) 383-6787 lr_collier@dot.ca.gov	Permits (single) for Oversize Loads on State Highways

**Table 5.13-2 Agencies and Agency Contacts**

<b>Agency Contact</b>	<b>Phone/E-mail</b>	<b>Permit/Issue</b>
Mail Station 618 San Bernardino, CA 92401		
Blythe DMV Office 430 S. Broadway Blythe, CA 9222	(916) 657-5771 <a href="https://eg.dmv.ca.gov/foa">https://eg.dmv.ca.gov/foa</a>	Licenses for Transport of Hazardous Materials and Wastes
Sergeant Headrick Hazmat Route Coordinator California Highway Patrol Commercial Vehicles Section 444 North 3 <sup>rd</sup> Street Sacramento, CA 95811	(916) 445-1865 mheadrick@chp.ca.gov	Approved Routes for Transport of Hazardous Materials and Wastes
Federal Motor Carrier Safety Administration California Field Office 1325 J Street, Suite 1540 Sacramento, CA 95814	Phone: (916) 930-2760 Fax: (916) 930-2778	License for Hazardous Material Safety Permit or Temporary Permit

**5.13.1.4 Required Permits and Permitting Schedules**

Table 5.13-3 identifies the required traffic and transportation permits and permit schedule.

**Table 5.13-3 Required and Permit Schedule**

<b>Permit/Approval Required</b>	<b>Due Date</b>
Riverside County Encroachment Permit (for work in County ROW)	Submit application and required plans showing work at least 14 working days prior to beginning construction work in public ROW. Most permits are issued within 14 working days.
Riverside County Oversize Load Permit	Apply at least five working days prior to oversize load on County roadways
Caltrans Encroachment Permit	Maintain ongoing consultation; obtain permit prior to start of construction activities. Required permitting time a function of complexity of construction.
Caltrans Oversize Load Permit	Apply at least four working days prior to oversize load on State highways. Permits are issued for a seven day period.
Hazardous Materials Safety Permit (Federal Motor Carrier Safety Administration)	Motor carriers will be required to apply for the HM Safety Permit, or a Temporary HM Safety Permit, the next time they renew their biennial update (filing the MCS-150) after January 1, 2005.

## 5.13.2 Affected Environment

### 5.13.2.1 Regional Setting

The Project site is located approximately 10 miles east of the unincorporated town of Desert Center to the north of I-10 in eastern Riverside County. Regional access is provided to the Project site and the surrounding area by the I-10, as indicated in Figure 5.13-1. I-10 is a primary east/west regional arterial which extends from the Los Angeles area to Phoenix, Arizona, before it turns south and continues to Tucson, Arizona (and ultimately turns east for an additional 2,000 miles across the country). In the Project area, I-10 is fully improved to freeway status with two lanes in each direction. Access from I-10 to the Project site will be provided using the Corn Springs Road exit and extending the end of Corn Springs Road on the north side of the interchange to connect to the proposed access road which will run east into the Project site.

### 5.13.2.2 Local Setting

Circulation in the area surrounding the Project other than I-10 has a very rural character, consisting of what are often unpaved local roadways extending in different directions. Access to the Project site will be from an existing diamond interchange on the north side of I-10, at Corn Springs Road. Corn Springs Road will be extended to connect to the proposed access road which is to run east into the Project site. The access road will be a paved, two-way, two-lane facility with graded shoulders. The diamond configured interchange currently includes single lane ramps with ramp junctures with Corn Springs Road controlled with stop signs.

Chuckwalla Valley Road on the southerly side of the interchange is a minor local access road extending between the Corn Springs and Ford Dry Lake Road interchange approximately 10 miles to the east. It is a two-lane frontage road providing access to parcels along the southerly side of I-10. The Corn Springs Road/Chuckwalla Valley Road intersection has stop sign control on the Chuckwalla Valley Road approaches.

### 5.13.2.3 Roadway Operating Characteristics

Existing daily traffic volumes on roadways providing access to the Project site are summarized below. The volumes are from Caltrans and represent Year 2007 Average Annual Daily Traffic (AADT) volumes or the annual average of 24-hour volumes. I-10 currently accommodates a two-way AADT volume of approximately 22,800 vehicles between Desert Center/Rice Road (SR 177) and Corn Springs Road. The same section of roadway accommodates a two-way peak hour volume of 2,650 vehicles. The interchange ramps at Corn Springs Road and the minor local roadways currently accommodate minimal traffic volumes because of the current lack of development in the area.

Use of the roadways is subject to the California Vehicle Code and vehicles without special permits are required to be no more than 60 feet long with a gross vehicle weight limitation of 80,000 pounds. A semi-truck (tractor and semi-trailer) can have a maximum length of 65 feet. A set of doubles (tractor and two trailers) can have a maximum length of 75 feet.

Existing and future roadway operations have been characterized using a peak hour LOS analysis. LOS provides a standardized means of describing a roadway or an intersection's operation by relating traffic volumes to facility capacity. LOS is identified through a letter designation. As shown in Table 5.13-4, LOS range from "A" representing the best conditions (free flow) to "F" representing the worst (most congested) conditions.

Table 5.13-5 shows that roadways in the Project vicinity currently operate at LOS A (free flow). The LOS presented is based on existing ratios of traffic volumes to vehicle capacity. The table also shows that roadways are forecast to operate at similar, primarily free flowing conditions under Baseline Year 2012 conditions, which assume continued growth in traffic volumes consistent with growth rates experienced

between 2004 and 2007 in the Project area. Year 2012 is when the construction work force is expected to peak and to generate associated worst-case traffic related impacts.

**Table 5.13-4 Level of Service Description for Roadway Sections**

LOS	Interpretation	Nominal Range Volume to Capacity Ratio	Average Vehicle Delay at a Stop Controlled Approach
A	Low volumes; primarily free-flow operations. Density is low and vehicles can freely maneuver within the traffic stream. Drivers can maintain their desired speeds with little or no delay.	0.00-0.60	0-10
B	Stable flow with potential for some restriction of operating speeds due to traffic conditions. Maneuvering is only slightly restricted. The stopped delays are not bothersome, and drivers are not subject to appreciable tension.	0.61-0.70	>10-15
C	Stable operations; however, the ability to maneuver is more restricted by the increase in traffic volumes. Relatively satisfactory operating speeds prevail, but adverse signed coordination or longer queues cause delays.	0.71-0.80	>15-25
D	Approaching unstable traffic flow, where small increases in volumes could cause substantial delays. Most drivers are restricted in their ability to maneuver and in their selection of travel speeds. Comfort and convenience are low but tolerable.	0.81-0.90	>25-35
E	Operations characterized by significant approach delays and average travel speeds of one-half to one-third free-flow speed.	0.91-1.00	>35-50
F	Forced flow operations with high approach delays at critical signalized intersections. Speeds are reduced substantially, and stoppages may occur for short or long periods of time because of downstream congestion.	Not Meaningful	>50

Source: Transportation Research Board, 1985, 2000

**Table 5.13-5 Baseline Peak Hour Roadway Traffic Volumes, Design Capacities, and Levels of Service (Without the Project)**

Roadway/Segment	Existing Conditions <sup>1</sup>				Year 2012 Conditions <sup>2</sup>			
	Travel Lanes	Volume	Capacity <sup>3</sup>	LOS	Travel Lanes	Volume	Capacity <sup>3</sup>	LOS
I-10 West of the Project Site	4	2,650 <sup>1</sup>	8,000	A	4	3,145	8,000	A
I-10 East of the Project Site	4	2,650 <sup>1</sup>	8,000	A	4	3,145	8,000	A
Corn Springs Road	2	Negligible <sup>4</sup>	2,000	A	2	Negligible <sup>4</sup>	2,000	A

<sup>1</sup> Caltrans, 2009  
<sup>2</sup> Year 2007 traffic volumes expanded to Year 2012 (estimated time of peak construction workforce) at historical rates Year 2004 to 2007 (3.74 percent/year)  
<sup>3</sup> Approximate two-way capacity in vehicles per hour  
<sup>4</sup> Currently there is a negligible amount of traffic on Corn Springs Rd. and the east and westbound I-10 ramps

As described earlier, I-10 is the primary access to the Project site. In the Project vicinity, Caltrans traffic counts on I-10 show approximately 43 percent of the traffic stream consists of trucks.

**Table 5.13-6 Existing and Baseline Peak Hour Intersection Levels of Service (Without the Project)**

Intersection	Existing Conditions <sup>1</sup>				Year 2012 Conditions <sup>2</sup>			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay <sup>3</sup> (sec)	LOS <sup>4</sup>	Delay <sup>3</sup> (sec)	LOS <sup>4</sup>	Delay <sup>3</sup> (sec)	LOS <sup>4</sup>	Delay <sup>3</sup> (sec)	LOS <sup>4</sup>
I-10 Westbound Ramps/ Corn Springs Road	- <sup>5</sup>	A	- <sup>5</sup>	A	- <sup>5</sup>	A	- <sup>5</sup>	A
I-10 Eastbound Ramps/ Corn Springs Road	- <sup>5</sup>	A	- <sup>5</sup>	A	- <sup>5</sup>	A	- <sup>5</sup>	A
Chuckwalla Valley Road/ Corn Springs Road	- <sup>5</sup>	A	- <sup>5</sup>	A	- <sup>5</sup>	A	- <sup>5</sup>	A
<sup>1</sup> Caltrans, 2009 <sup>2</sup> Year 2007 traffic volumes expanded to Year 2012 (estimated time of peak construction workforce) at historical rates Year 2004 to 2007 (3.74 percent/year). <sup>3</sup> Average Vehicle Delay in seconds. Existing traffic volumes and intersection delay are negligible currently and forecast to remain so without project in 2014. <sup>4</sup> Intersection as a whole <sup>5</sup> Currently there is a negligible amount of traffic on the east and westbound I-10 ramps.								

#### 5.13.2.4 Safety

No roadway features have been identified as potential safety hazards in the Project vicinity. I-10 is two lanes in each direction separated by a dirt median, approximately 100 feet in width. Caltrans actively monitors traffic operations and accident histories on I-10.

#### 5.13.2.5 Rail and Bus Transportation

There is no regional passenger railroad or bus transportation in the Project area. The nearest national rail passenger service is an Amtrak Station in Palm Springs to the west, which connects to Yuma, Arizona to the east. Freight rail transportation is provided by the Arizona and California Railroad (AZCR), which connects to the Burlington Northern Santa Fe Railroad (BNSF). The AZCR is a short line railroad that runs from Cadiz, California west to Mathie, Arizona. At Rice, California, there is an offshoot to Ripley, California, which provides a stop in Blythe, approximately 45 miles east of the Project site. The Union Pacific Railroad has a siding in Indio which is currently under consideration as a rail delivery point. From one of these locations, the equipment would be transported by truck to the Project site. The trucks from the Indio Yard would follow either Indio Boulevard to 46th Avenue to Golf Center Parkway to I-10 or Indio Boulevard to Dillon Road to I-10. This would occur no more than a few times during Project construction; no rail deliveries would be required during Project operation.

National bus service is provided by Greyhound, with the closest stations at Indio, California (approximately 50 miles west of the Project site) and Blythe, California (approximately 45 miles east of the Project site).

Local bus service near the Project is limited to the Red Route of the Desert Roadrunner bus service for Blythe. The Desert Roadrunner is administered by the Palo Verde Valley Transit Agency. The Red

Route provides service to the Ironwood/Chuckwalla Valley State Prison, Monday through Friday, with three trips in the morning and three trips in the afternoon. The Ironwood/Chuckwalla Valley State Prison is approximately 21 miles east of the Project.

### **5.13.2.6 Bicycle and Pedestrian Circulation**

No bicycle or pedestrian facilities are located in the Project vicinity. Bicycle and pedestrian circulation is limited to shoulders of rural highway and county roads and is not allowed on freeways such as I-10.

### **5.13.2.7 Airport Operations**

Three airport facilities are located in the general vicinity of the Project site: Desert Center Airport (currently unattended, but runway could be used for emergencies), Blythe Airport and Palm Springs International Airport (both operational). The location and general characteristics of these facilities are described briefly below.

#### **Desert Center Airport**

Desert Center Airport is a former airport located at the end of an unnamed road approximately one mile east of Route 177 (Rice Road), five miles northeast of the town of Desert Center, and approximately three miles west of the Project site. The airport was built in the early 1940s as Desert Center Army Airfield and used as a support base for the Air Technical Services Command. At that time it had 5,500-foot runways with taxiways, a parking apron, and more than 40 buildings, which included an operations building, power house, Link Trainer building, hangar and various supply buildings.

Following the end of World War II, the airfield was turned over to Riverside County and reused as a civil field, although most of the buildings were dismantled. In 1946, the airfield was turned over to the Army Corp of Engineers and the buildings were auctioned off to the public. The airport was reopened as a civil airport (owned by Riverside County) at some point between 1966 and 2002. However, as of 2002 it was all but abandoned. There were no aircraft based at the field, and the Airport Facility Directory data listed a total of 150 takeoffs and landings per year. The sole remaining maintained runway is 5/23, which consists of a 4,200-foot asphalt strip that was overlaid over remains of the original military runway. Two buildings were still standing.

In 2003, the airfield was being used to fly unmanned aircraft. The hangar had been converted to a workshop and an inclined launching ramp was constructed. In 2004, the airfield was again put up for sale by Riverside County. It is currently unattended, but the runway could be used for emergencies.

#### **Blythe Airport**

Blythe Airport is a public facility located approximately six miles west of the City of Blythe and approximately 30 miles east of the Project site. The airport has two runways, Runway 8/26 which is 6,500 feet long and Runway 17/35 which is 5,800 feet long.

The airfield was opened in April 1940. During World War II, the airfield was known as Bishop Army Airfield and later became a sub-base of Muroc Army Air Field (now Edwards Air Force Base). At the end of the war, the base was declared excess to requirements and returned to civilian control.

Today Blythe Airport is primarily used for general aviation and aircraft operations are limited. For the 12-month period ending in 2006, operations averaged 69 takeoffs or landings per day. Of these, 50 percent were characterized as transient general aviation, 50 percent local general aviation and less than one percent military.

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### **Palm Springs International Airport**

Palm Springs International Airport is a public airport located approximately two miles east of the central area of Palm Spring where it serves the Coachella Valley area of Riverside County. The airport is approximately 80 miles west of the Project location. It covers a 940-acre area and includes two runways. Operations are highly seasonal, in that many flights do not operate during the summer.

The airport was originally constructed as an Army Air Force airfield in 1939. The City of Palm Springs purchased the facility in 1961 and converted it to commercial use which began in 1964 as the Palm Springs Municipal Airport. Palm Springs International Airport has a single terminal for all flights and is serviced by 10 airlines and approximately 100 daily flights connecting to hundreds of cities worldwide.

### **5.13.3 Environmental Impacts**

This section discusses the potential impacts of the PSPP on traffic and transportation. The impact of the Project is measured by the potential change in traffic and transportation conditions of surrounding intersections and I-10.

#### **5.13.3.1 Evaluation Methodology and Significance Criteria**

For purposes of this evaluation, impacts are considered significant if the Project would:

- Reduce a roadway segment or intersection LOS below acceptable levels, as defined below:
  - Riverside County's target for peak hour operations on County roads is LOS C or better and LOS C or better on State highways. The threshold of significance is that a significant Project-related impact occurs if the addition of Project-generated trips causes a County facility (roadway segment or intersection) operating at LOS C or better, to degrade to LOS D or worse or for a State facility operating at an LOS C or better, to de-grade to LOS D or worse.
- The Project adversely affects traffic circulation and parking conditions in neighboring areas because of inadequate onsite parking and/or inadequate onsite circulation.
- The Project creates a traffic related safety hazard.

#### **5.13.3.2 Construction Phase Impacts**

Construction of the Project would be completed over an approximately 39-month period. The Project construction work force will peak during Month 17 at approximately 1,141 workers per day. The workforce will average approximately 566 workers over the course of construction.

Construction of a transmission line extending from the Project site to a new Southern California Edison (SCE) substation west of the PSPP site at a location not yet finalized would have minimal traffic impacts. Transmission line construction is forecast to generate a need for a maximum of approximately 30 workers over a several month period and all work is expected to occur in undeveloped desert areas with no need for encroachment into a public street ROW. Construction of the transmission line is not expected to coincide with the peak of Project site construction employment.

A worst-case scenario, where all workers commute in autos with only one occupant per vehicle, yields a peak trip generation of approximately 1,141 inbound trips during the morning peak period and another 1,141 outbound trips during the evening peak hour. There would be a peak of 2,282 one-way worker commute trips per day and an average of 1,132 one-way trips per day. Construction is also forecasted to generate an average of approximately 20 to 30 one-way, truck trips per day with a peak of approximately 40 truck trips per day.

A temporary parking area of approximately 10 acres would be required for construction personnel parking (assuming 350 square feet per vehicle) with additional area required for the staging/laydown of equipment, materials, and supplies. The Project will include onsite laydown and parking areas during construction which will be relocated around the Project site as construction progresses.

It is anticipated that the Project construction workforce will be drawn from the surrounding local and regional area, including a limited number from the greater Los Angeles Basin. As shown in Figure 5.13-4, Project construction traffic from the Los Angeles, Palm Springs, and Indio areas is expected to follow I-10 east to the Project site while traffic approaching from Blythe (where a portion of Project construction workers may reside temporarily) and the Arizona communities of Quartzsite, Ehrenberg, and Cibola will follow I-10 west to the Project site. A small portion of the Project construction workforce is expected to come from or at least be temporarily housed in smaller communities local to Indio (e.g., Coachella, Thermal, and Mecca); these workers will also approach the Project site following I-10 from the west.

Table 5.13-7 summarizes Year 2012 plus Project construction-related peak hour traffic volumes on roadways in the surrounding area. As shown in Table 5.13-7, in comparison to baseline conditions without the Project (Table 5.13-5), Project construction related increases in traffic will be noticeable but will not have a significant adverse impact. Project traffic will be utilizing an existing four-lane freeway with excess capacity and local roadways that currently accommodate very little, if any, traffic such that it would not cause a degradation of existing or baseline peak hour LOS and would not have a significant impact on existing roadway operations. I-10 is forecast to continue operating at existing without-Project LOS during peak construction when 1,141 workers are commuting to and from the site daily.

Traffic operations at the intersection of the westbound I-10 off-ramp at Corn Springs Road is forecast to deteriorate from an LOS A to LOS E during the morning peak hour during peak construction periods if all 1,141 workers arrive at the work site in individual vehicles at the same time. However, with Applicant-proposed mitigation that would reduce peak employee vehicle volumes substantially, the intersection would operate at acceptable levels. For example, if the peak was reduced in half, the intersection is forecast to operate at a LOS B, which is considered clearly acceptable. A somewhat smaller reduction in the peak would still leave the intersection at an acceptable LOS C. There a number of approaches that could be considered to accomplish the objective of significantly reducing the peak traffic volume, such as temporarily splitting the work shift to have two start times one hour apart. Other approaches could be considered such as requiring contractors to arrange employee busing, park and ride, carpooling, etc. that achieve similar substantial reductions in peak Project traffic.

**Table 5.13-7 Peak Hour Roadway Traffic Volumes, Design Capacities, and Levels of Service (With Project Related Traffic)**

Roadway/Segment	Year 2012 Conditions with Project Construction Traffic <sup>1</sup>				Year 2014 Conditions with Project Operations Traffic <sup>2</sup>			
	Travel Lanes	Volume	Capacity <sup>3</sup>	LOS	Travel Lanes	Volume	Capacity <sup>3</sup>	LOS
I-10 West of the Project Site	4	3,716 <sup>1</sup>	8,000	A	4	3,245	8,000	A
I-10 East of the Project Site	4	3,717 <sup>1</sup>	8,000	A	4	3,245	8,000	A
Corn Springs Road	2	1,141	2,000	B	2	125	2,000	A

<sup>1</sup> Assumes Month 17 peak construction traffic levels with 1,141 workers  
<sup>2</sup> Assumes normal future Project operations with total work force of 134 employees.  
<sup>3</sup> Two-way capacity in vehicles per hour

**Table 5.13-8 Project Construction and Operation Peak Hour Intersection Levels of Service**

Intersection	Year 2012 Conditions with Project Construction Traffic <sup>1,2</sup>				Year 2014 Conditions with Project Operations Traffic <sup>2</sup>			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay <sup>3</sup> (sec)	LOS	Delay (sec)	LOS	Delay <sup>3</sup> (sec)	LOS	Delay <sup>3</sup> (sec)	LOS
I-10 Westbound Ramps/ Corn Springs Road Westbound Off-Ramp	38.1	E <sup>4</sup>	5	A	8.7	A	8.4	A
I-10 Eastbound Ramps/ Corn Springs Road Eastbound Off-Ramp	23.0	C	5	A	9.2	A	9.4	A

<sup>1</sup> Assumes Month 17 peak construction traffic levels with 1,141 workers  
<sup>2</sup> Year 2007 traffic volumes expanded to Year 2012 and 2014 (estimated construction completion) at historical rates Year 2004 to 2007 (3.74 percent/year)  
<sup>3</sup> Existing traffic volumes and intersection delay are negligible currently and forecast to remain so without project in 2014  
<sup>4</sup> The approach is forecast to operate at an LOS E if all 1,141 workers arrive at the site/start work concurrently. The intersection is forecast to operate at an LOS B if the peak work force is reduced by approximately half by approaches such as staggered shift start times or other methods (e.g., contractor busing, park and ride, carpool/vanpools) that achieve similar results. At average conditions (566 vehicles) the intersection would operate at LOS B without additional measures.

Project construction will involve transport to the site of several pieces of equipment that exceed roadway load or size limits and will require special permits for on-road transport. Oversized equipment includes the steam turbine generator and main transformers. These items will likely be shipped by rail to either the City of Indio or Blythe and then transported by truck to the Project site. The equipment would be transported via multi-axle trucks along I-10 to the Project site. The maximum allowable load without a special permit is 80,000 pounds. Transport of this equipment will likely require the use of a truck and trailer with multiple axles, advance and trailing warning vehicles, and possibly police control in Blythe or Indio dependent upon where the equipment is off loaded from the railroad. The moving contractor will be required to file for and obtain a permit from Caltrans following the determination of the size of the truck and configuration of the axles. Oversize load permits will also be required from the City of Indio, dependent upon where oversize equipment is off-loaded from the railroad.

Project site access will be provided via a new driveway/access road extending easterly from Corn Springs Road in the southwestern area of the plant. Traffic will use the existing grade-separated interchange on I-10 at Corn Springs Road. As indicated in Table 5.13-8, the westbound off-ramp is forecast to operate at an LOS E or capacity with an extended queue backing down the off ramp during the morning peak hour if all 1,141 construction workers arrive concurrently in separate vehicles during Month 17 (peak period of construction activity in terms of manpower loading). During this period, it is planned for Project contractors to implement measures such as staggering start times by an hour for half the crew, or other measures that would achieve a sizable reduction in peak vehicle volumes. For example, the ramp approach would operate at an LOS B in the morning if the work force were staggered by an hour such that at peak, only half the workers (and half the vehicles) would arrive at the same time. The ramp also would operate at an LOS B in the morning peak during average workforce periods (566 workers) over the 39-month construction period without additional measures.

Further review of Table 5.13-8 shows that the intersection of the eastbound I-10 ramps with Corn Springs Road is forecast to operate at an LOS C or acceptable during the morning peak commute period without vehicle reduction measures. It would operate even better if peak workforce vehicle volumes would be reduced. Both the east and westbound ramp junctures with Corn Springs Road are forecast to operate at LOS A during the evening peak period.

Overall, transportation impacts associated with construction of the Project should not be significant for the following reasons:

- Construction workers commuting to and from the plant site will be following I-10 from either the east or west and using the Corn Springs Road interchange to reach the site. Because current (and expected future) I-10 traffic volumes are light and traffic using the Corn Springs Road interchange (and Corn Springs Road itself) is negligible. I-10 and Corn Springs Road itself are forecast to continue operating well, even during the peak period of Project construction activity when the workforce may reach 1,141 construction workers.
- The Applicants will implement short-term measures during peak construction periods to avoid congestion at the west bound off ramp from I-10 at Corn Springs. Reducing vehicle volumes at such times would reduce the potential for vehicle queues to back down the I-10 westbound off-ramp at Corn Springs Road during the morning peak hour. Vehicle reduction approaches could include splitting the construction crew with staggered start times to reduce peak arrivals by about half. Other approaches could be considered such as contractor-provided employee busing, park and ride/shuttle busing, vanpools, etc. that achieved a similar substantial peak volume reduction.
- The requirements to obtain special permits to move oversize or overweight materials and equipment to and from the site would ensure use of proper vehicles, scheduling, routes, and escorts to minimize impacts.
- No bike lanes are currently present in the Project area that could be impacted by construction traffic.

### 5.13.3.3 Operation Impacts

Project operations are forecast to generate a limited volume of vehicular traffic. The Project operations phase workforce is estimated at a total of 134 workers, who will cover operations on a 24-hour x 7-day basis (i.e., peak hour weekday traffic will be less than 100 vehicles even if every employee commutes alone in their own vehicle). Year 2014 plus Project operation traffic volumes and the resulting LOS on selected roadways in the Project vicinity are summarized in Table 5.13-7. Year 2014 is when the Project is expected to be completed and operational. As shown, Project operations will not alter baseline roadway LOS and will not have significant impacts on roadway operations. Both the east and westbound I-10 ramp junctures at Corn Springs Road are forecast to continue operating at an LOS A, as are I-10 and Corn Springs Road.

Project operations will also involve truck traffic for the delivery of materials and supplies as well as for other purposes such as the offsite shipment of wastes. Up to approximately six truck trips per day are expected, with including offsite shipments (e.g., solid waste) and deliveries of materials and supplies. These volumes would not affect LOS on roadways in the Project vicinity.

Project truck travel will include approximately one delivery per month of hazardous materials. Section 5.6, Hazardous Materials Handling describes the types and estimated quantities of hazardous materials to be transported to or from the Project. Hazardous materials shipments will utilize I-10 to access the Project site from either the east or west. Hazardous materials shipments will comply with applicable regulations in terms of route selection (prior to reaching I-10), operator training and qualifications, etc. (also see Section 5.7, Hazardous Materials Handling).

Transportation impacts associated with operation of the Project would not be significant for the following reasons:

- The Project will generate a maximum of 268 one-way employee commute trips per day spread over a 24-hour period. As indicated in Tables 5.13-5 and 5.13-6, surrounding roadways are generally expected to operate well below capacity. The addition of this traffic volume to the existing roadway network will not alter existing or future roadway operating characteristics (LOS).
- Truck travel and other non-employee site visits will be small and will typically occur during non-peak periods.
- Project design will not impact the ability to provide bike lanes in the future and Project traffic levels would not have significant adverse impacts on bike lanes that might be developed.

#### **5.13.3.4 Potential Impacts on Aircraft Operations**

This section addresses the potential impacts of Project operations on aircraft operations in the Project vicinity. Aircraft facilities in the Project vicinity include the Blythe Airport (35 miles east) and Palm Springs International Airport (80 miles west). The Desert Center Airport is a former airport located three miles west of the Project and has not been in use since 2003. Blythe Airport is the nearest active airport to the Project. Project operations are unlikely to cause concern with respect to aircraft flight operations at any of these three facilities. A letter from a Department of Defense representative indicates that the PSPP will pose no conflicts for military over flights (see correspondence in Appendix K)

Aircraft flight operations could potentially be impacted in a number of ways, as listed immediately below and discussed individually further below:

- Facility structures (e.g., transmission towers and buildings) conceivably could produce a hazard to low flying aircraft if the structures extended into restricted airspace;
- Transmission lines or facility control systems' use of specific electronic frequencies potentially could cause concerns with respect to interference with aircraft communications or avionics; and
- The solar collector mirrors might be considered a potential source of glare, resulting in visual distraction to pilots.

#### **Structure Height and Potential Air Space Obstruction**

The maximum structure height for proposed Project facilities will be approximately 120 feet (the Air Cooled Condenser (ACC) will be 120 feet; the transmission structures will be approximately 110 feet. These are by far the tallest Projects structures. The threshold of concern for the FAA with respect to possible aviation obstructions is 200 feet, a height well above the tallest Project structure. The Riverside County Zoning Ordinance indicates that review is required for the Project where maximum structure height is more than 80 feet. The Applicants have consulted with the applicable agencies and no significant impacts are expected. The nearest active airport is in Blythe 35 miles to the east. Potential impacts on airport operations would be less than significant (also see Section 5.7, Land Use).

#### **Transmission Line Interference Potential**

As discussed in Section 5.14, Transmission Line Safety and Nuisance, transmission line interference, if it affected aircraft communications or avionics, would be considered a hazard to aircraft operations. Transmission line-related radio-frequency interference (RFI) is one of the indirect effects of transmission line operation and is produced by the physical interactions of line electric fields. Such interference is due to the radio noise produced by the action of the electric fields on the surface of the energized conductor. The process involved is known as corona discharge and can occur within gaps between the conductor and insulators or metal fittings. Since the level of interference depends on factors such as line voltage,

distance from the line to the receiving device, orientation of the antenna, signal level, line configuration and weather conditions, maximum interference levels are not specified as design criteria for modern transmission lines.

The level of RFI that occurs usually depends on the magnitude of the electric fields involved and the distance from the line. The potential for such impacts is, therefore, minimized by reducing the line electric fields and locating the line away from inhabited areas. The Project transmission line would be built and maintained in keeping with standard practices that minimize surface irregularities and discontinuities. Moreover, the potential for such corona-related interference is usually of concern for lines of 345 kV and above, and not the Project 230 kV line. There is currently no available information to suggest that such issues have arisen from the operation of existing transmission lines in the general Project vicinity.

Impacts on aviation safety would be less than significant. Project use of the electronic spectrum is limited and very unlikely to interfere in any way with aviation activities due to Federal Communication Commission regulation of the use of the electronic spectrum and devices that use that spectrum. As discussed in Section 2.0, Project Description, the Project will provide information on planned use of the electronic spectrum at Project facilities to the FAA and the Riverside County Economic Development Agency (EDA), and as needed, will modify the facility's planned frequency use based on the feedback provided by FAA and/or EDA.

#### **Solar Array Visual Distraction Potential**

The Project will use solar thermal equipment comprised of arrays of parabolic trough mirrors. Each solar collector mirror is parabolic in shape and focuses the sun's energy on the glass-encased metal receiver tube containing the heat transfer fluid, thus limiting the potential for stray reflections. The receiver tube may glow as the reflected sun rays enter the collector. The reflections from the curved surface of the receiver tube are greatly diminished in intensity from those that would be associated with a reflection of the sun in a mirror. These reflections are similar to the reflections one would observe from a body of water with waves on it if the viewer is in the right spot. The glow could be observed by a pilot if the aircraft were positioned at the right angle above the array, but it would not be a bright source of glare and would be short-lived due to the motion of the aircraft.

The Solar Electric Generating Station (SEGS) power plants in the Mojave Desert at Harper Lake and Kramer Junction have been operating since the 1980's and thus provide a reference for the issue of potential glare impacts to pilots. In the nearly 20 years that the SEGS facilities have been in operation, glare has not been reported as a distraction to pilots. As an additional data point, on October 4, 2007, Caltrans Aeronautics and CEC staff flew over the Kramer Junction and Harper Lake solar thermal facilities during a sunny mid-morning at about 1,500 feet above ground level and no glare was observed, although from a distance of four miles the solar facility appeared to be a lake or pond and reflected some sunlight.

Given this history of aircraft operations in the vicinity of nearby existing solar thermal power plants and no recorded aviation safety issues, it is not expected that the Project solar array will cause adverse effects on aviation operations in the Project vicinity.

#### **5.13.3.5 Cumulative Impacts**

As described in Section 5.1.2, Cumulative Evaluation Approach, multiple large energy projects have been proposed along the I-10 corridor. It is anticipated that Project construction workforce would draw from the surrounding local and regional area from both west of the site (Riverside and San Bernardino Counties) and east of the site (Blythe, Arizona communities). The PSPP construction period conceivably could overlap with one or several other proposed renewable energy along the I-10 corridor. It is possible that one or more than one of these overlapping projects could be in the same general area of the I-10 corridor,

near Desert Center. Construction traffic from these projects should their construction schedules overlap, would result in increased traffic along the regional roadways, I-10 and to a lesser extent SR 177.

The I-10 freeway has (and will continue to have) ample additional capacity because current traffic volumes are small. The construction projects may be separated by several miles or more along I-10 and it is less likely that the *peak* construction periods of multiple projects would coincide than that there would some overlap in overall schedules. Nonetheless, there could conceivably be periodic short-term congestion at a number of locations near major construction sites along I-10.

The PSPP would not be a cumulatively considerable contributor to traffic congestion impacts in the I-10 corridor. The Project traffic analysis presented above included future baseline projections with and without Project traffic (see Tables 5.13-5 through 5.13-8), and found that the Project would not contribute significantly to potential cumulative impacts on roadways in the vicinity. This is largely because of low current traffic volumes that provide substantial available capacity on I-10. None of the other projects are closer than a several miles from the PSPP and would not use the same freeway interchange.

### 5.13.4 Mitigation Measures

Although no significant adverse traffic or transportation impacts are expected during Project construction or operation, the following measures are proposed to minimize potential adverse but non-significant impacts during Project construction. No mitigation measures are required or proposed during Project operations.

- TR-1** The Project owner will develop and implement a construction phase Traffic Management Plan (TMP) in consultation with Caltrans and Riverside County for the roadway network potentially affected by construction activities at the Project site and offsite linear facilities. The Traffic Management Plan will include a plan to split the workforce and stagger arrival times during peak construction periods and a traffic LOS and queue monitoring program.
- TR-2** The Project owner will conduct construction activities in accordance with Caltrans and other applicable limitations on vehicle sizes and weights, Construction Excavation Permits obtained from the Riverside County, Encroachment Permits from Caltrans, as well as permits and licenses from the California Highway Patrol and Caltrans for the transport of hazardous substances.
- TR-3** The Project owner will coordinate with applicable traffic management agencies (e.g., Caltrans, Riverside County) as well as CEC CPM and BLM representative, and as appropriate and necessary, with other proponents of renewable energy project in the I-10 corridor, to address issues related to cumulative traffic associated with the possible concurrent construction of several large projects with large work forces for a few years beginning roughly in 2012.

### 5.13.5 References

California Energy Commission, 2008. Final Staff Assessment Victorville 2 Hybrid Power Plant Project (AFC 07-01). April.

County of Riverside General Plan, 2008. Circulation Element.

County of Riverside General Plan, 2008. Desert Center Area Plan.

California Department of Transportation (Caltrans), 1996. Traffic Manual.

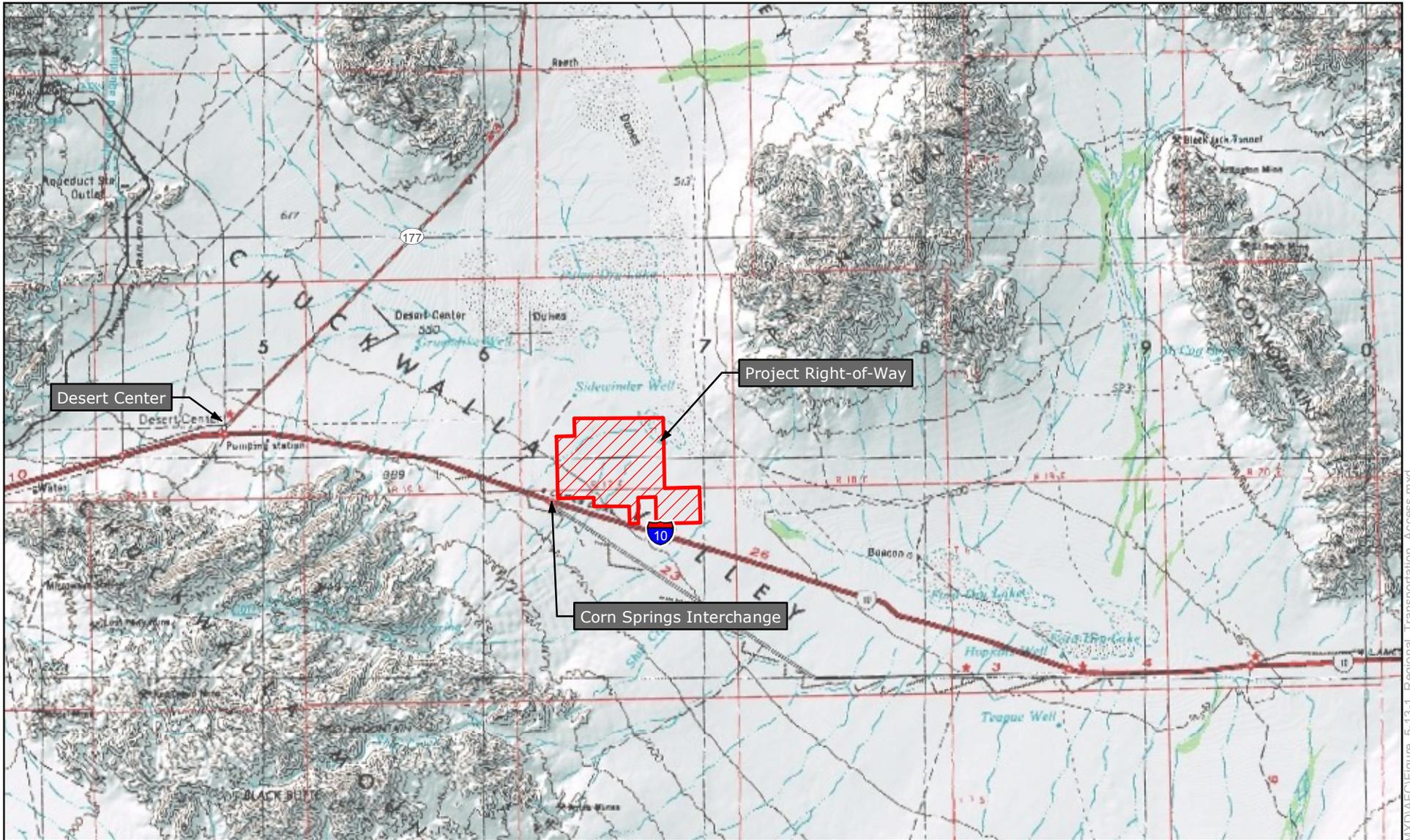
Caltrans, 2007. Traffic Volumes on California State Highways.

Castillo, Dan, Transportation Engineer/Technician, Desert Permit Assistance Center. Personal communication, Milan Gill, Wilson Engineering. April 16, 2009.

Moslemi, Reza, Transportation Engineer/Permit Writer, Caltrans, District 8. Personal communication, Milan Gill, Wilson Engineering. April 16, 2009.

Collier, L.R., Transportation Engineer/Permit Writer, Caltrans, District 8. Personal communication, Milan Gill, Wilson Engineering. April 16, 2009.

Sergeant Headrick, Hazmat Route Coordinator, California Highway Patrol. Personal communication, Milan Gill, Wilson Engineering. April 17, 2009.



**Legend**

 Project Right-of-Way

1:250,000

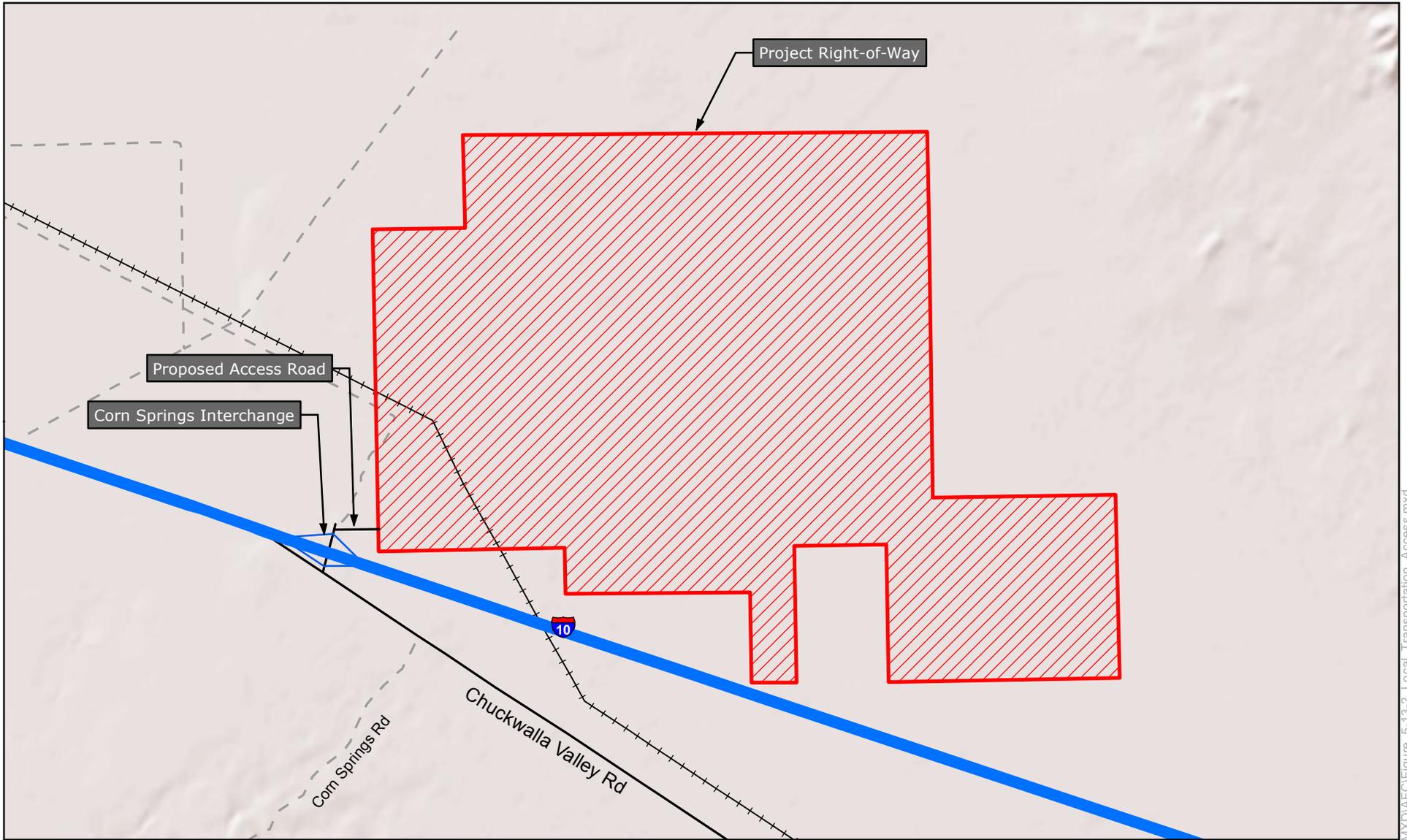
0 4 8 12 Miles



**Palen Solar Power Project**  
**Figure 5.13-1**  
**Regional Transportation Access**




Date: August 2009



**Legend**

- Project Right-of-Way
- Electrical Distribution Line

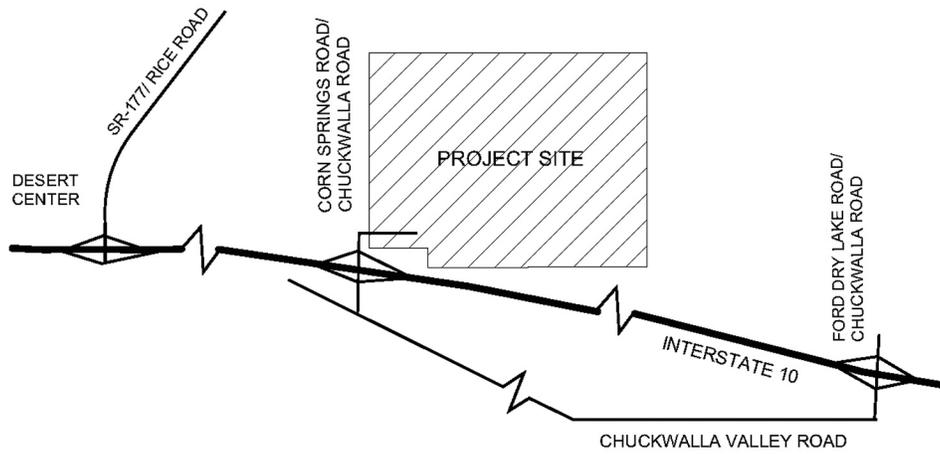
**Road Type**

- Interstate
- Ramp
- Paved
- Dirt

1 inch equals 4,000 feet

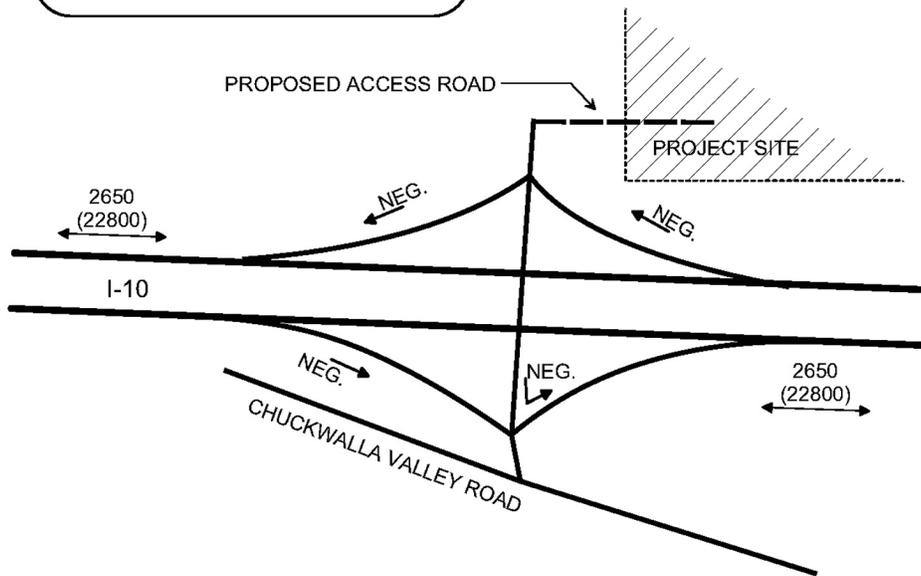
**Palen Solar Power Project**  
**Figure 5.13-2**  
**Local Transportation Access**

Date: August 2009



**Legend**

- 000 = Two-Way Peak Hour Traffic
- ↔ (000) = Two-Way Average Daily Traffic
- NEG = Negligible Traffic

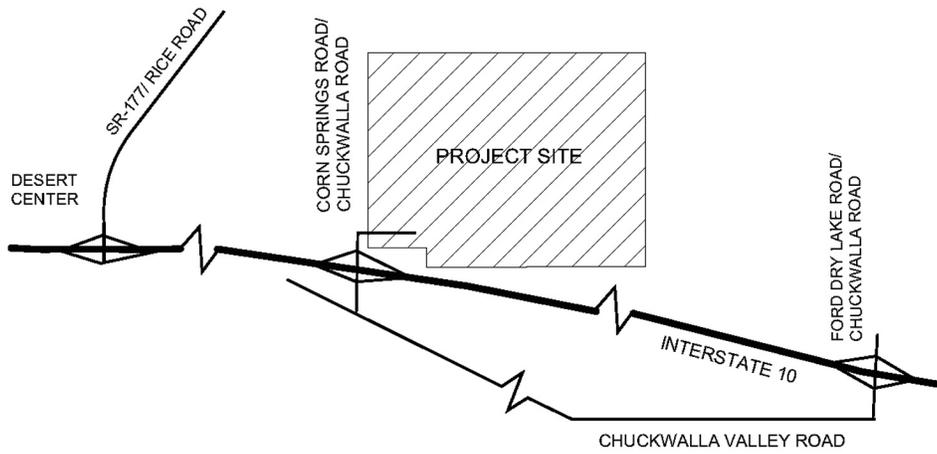


**Palen Solar Power Project**

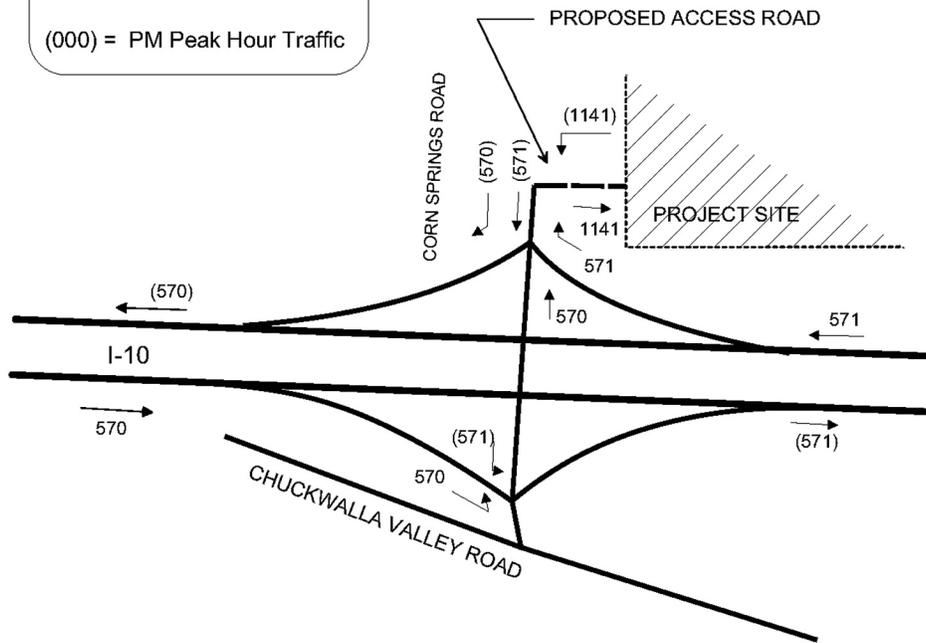
**Figure 5.13-3  
Existing Traffic  
Volumes**



Date: August 2009



**Legend**  
 000 = AM Peak Hour Traffic  
 (000) = PM Peak Hour Traffic



**Palen Solar Power Project**

**Figure 5.13-4  
 Peak Month  
 Construction  
 Commute Traffic**



Date: August 2009