

5.11 Socioeconomics

This section discusses the potential socioeconomic impacts of the construction and operation of the PHPP. It includes an evaluation of Project-related impacts on public services and infrastructure (e.g., schools, protective services, and housing), as well as an evaluation of impacts on community issues such as environmental justice.

5.11.1 LORS Compliance

A summary of potentially applicable LORS is presented in Table 5.11-1 and in the text following the table. The Project will comply with all applicable Federal, State, and local LORS.

Table 5.11-1 LORS Applicable to Socioeconomics

LORS	Applicability	Where Addressed in AFC
Federal:		
Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations."	As a result of the Executive Order, U.S. Environmental Protection Agency (EPA) issued guidelines requiring Federal agencies and State agencies receiving Federal funds to develop strategies to address environmental justice issues.	Section 5.11.3
State:		
California Government Code (GC) Sections 65995-65997 (amended by SB 50).	Public agencies may impose fees, charges or other financial requirements on developers to offset the cost for school facilities.	Sections 5.11.1 and 5.11.3
Title 14 California Code of Regulations (CCR), Section 15131.	California Environmental Quality Act (CEQA) and its guidelines state that economic or social factors of a project may be included in an Environmental Impact Report (EIR), but shall not be treated as significant effects on the environment.	Section 5.11.3
Local:		
Palmdale General Plan (Land Use and Public Services Elements).	Establishes goals and implementing policies to achieve a diversified economic base and adequate City services and infrastructure.	Sections 5.11.2 and 5.11.3

5.11.1.1 Federal LORS

Executive Order 12898

This law requires Federal agencies and State agencies receiving Federal funds to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low income populations. Federal agency permits and approvals are considered “activities,” making this requirement more broadly applicable than merely to agencies receiving Federal funds. Because the PHPP will require a Federal agency approval (a PSD permit under the Clean Air Act), the Executive Order applies to the PHPP.

5.11.1.2 State LORS

California Government Code Sections 67995-65997

These codes state that public agencies may impose fees, charges, or other financial requirements on developers to offset the cost of school facilities. For the Project, the administering agencies implementing school impact fees are the Palmdale School District, Westside Union School District, and the Antelope Valley Union High School District.

Title 14, CCR, Section 15131

CEQA and its guidelines state that economic or social factors of a project may be included in a CEQA document, but shall not be treated as significant effects on the environment. However, economic or social effects of a project may be used to determine the significance of physical changes caused by the project. Additionally, economic, social, and particularly housing factors should be considered by public agencies, together with technological and environmental factors, in deciding whether changes in a project are feasible, to reduce or avoid the significant effects on the environment.

5.11.1.3 Local LORS

City of Palmdale General Plan

Although the proposed Project does not require socioeconomic-related permits, the Palmdale General Plan contains goals related to maintaining and improving the socioeconomic aspects of the county. One goal of the Public Services Element is to “ensure that adequate public services and facilities are available to support development in an efficient and orderly fashion.” Goals of the Land Use Element of the General Plan are to “create a vision for long term growth and development in the City of Palmdale which provides for orderly, functional patterns of land uses within urban areas, a unified and coherent form, and a high quality of life for residents; adopt land use and development policies which encourage growth and diversity of the City’s economic base; and to plan for and reserve land to accommodate uses needed for public benefit, including open space, recreation, public improvements, schools, and community facilities.”

5.11.1.4 Involved Agencies and Local Contacts

No socioeconomic-related permits are required by the proposed Project. Therefore, there are no applicable permitting agencies or agency contacts.

5.11.1.5 Required Permits and Permitting Schedule

There are no required permits related to socioeconomics.

5.11.2 Affected Environment

This subsection discusses existing socioeconomic conditions in the areas potentially affected by the PHPP. For purposes of this evaluation, the regional area is defined as Los Angeles County, San Bernardino County, and Kern County, including the cities of Palmdale, Lancaster, Santa Clarita, Victorville, Hesperia Adelanto, and Apple Valley. The local area is defined as the cities of Palmdale and Lancaster and the unincorporated communities of Quartz Hill, Lake Los Angeles, Acton, Little Rock, Sun Village, and Pearblossom. The socioeconomic characteristics discussed include population, housing, employment and economy, public services, utilities, schools, local government finance, and environmental justice.

5.11.2.1 Regional Setting

The Project site is located in an area of the High Desert known as the Antelope Valley; all Project facilities with the exception of parts of the transmission line and reclaimed water pipeline routes are located in the City of Palmdale; the rest of the transmission line and reclaimed water pipeline routes are in unincorporated Los Angeles County. The City of Palmdale and the adjacent City of Lancaster are the two largest communities of the Antelope Valley. The regional setting is illustrated in Figure 5.11-1. The nearest sizeable cities include Santa Clarita (25 miles west), Adelanto (39 miles east) Victorville (40 miles east), Hesperia (41 miles east), and Apple Valley (44 miles east). The City of Palmdale is bordered by the City of Lancaster and the unincorporated community of Quartz Hill to the north; the unincorporated communities of Lake Los Angeles, Sun Village, Littlerock and Pearblossom to the east; the unincorporated community of Acton to the south; and the unincorporated community of Leona Valley to the west.

5.11.2.2 Local Setting

The 377-acre PHPP plant site consists of undeveloped land in an industrial area of the City of Palmdale near the boundary with the City of Lancaster. Air Force Plant 42 is located to the south and east. Areas northeasterly of the site are undeveloped; the area northwesterly of the site is primarily industrial although it also contains a few scattered residences.

5.11.2.3 Population

Los Angeles County is the most populous county in southern California, and is the twelfth largest county in land area in the State, covering more than 4,000 square miles. The population of Los Angeles County grew from 8,863,164 in 1990 to 9,519,338 in 2000 and reached an estimated 9,878,554 in 2007 (U.S. Census Bureau, 2008). This growth represents a population increase of approximately 11.46 percent in 17 years. The population growth experienced during the 1990s has continued into the first decade of the twenty-first century. Population estimates and future population projections for the local and regional area are summarized in Table 5.11-2.

Table 5.11-2 Population Estimates and Projection

County/Community	Year				
	2000	2007 ³	2010	2020	2030
Los Angeles County ¹	9,578,960	10,331,939	10,718,007	11,501,884	12,221,799
Lancaster	119,416	143,818	168,032	215,468	259,696
Palmdale	117,729	145,468	176,506	259,712	299,324
Santa Clarita	151,088	177,159	181,092	211,367	289,376
Acton	2,390	n/a	10,754	14,473	17,527
Little Rock	1,402	n/a	19,289	25,585	30,753
Quartz Hill	9,890	n/a	19,573	27,244	33,481
Lake Los Angeles	11,658	n/a	11878	12041	14667
San Bernardino County ¹	1,709,434	2,028,013	2,059,420	2,397,709	2,713,149
Adelanto	18,176	27,139	25,939	35,351	44,129
Victorville	64,871	102,538	81,592	103,353	123,641
Apple Valley	54,585	70,297	70,873	83,707	95,675
Hesperia	62,835	85,876	95,800	139,049	179,383
Adelanto	18,176	27,139	25,939	35,351	44,129
Kern County ²	665,519	801,648	1,086,113	1,352,628	1,808,239
Bakersfield	246,899	323,213	342,700	433,800	549,100
n/a = not available					
<p>Note 1: Population data in this table is a compilation of three sources. For Victorville, actual population growth, as estimated by the California Department of Finance, has exceeded expectations (most recent available projections) of the regional planning agencies, which means that the table seems to predict a population decline between 2007 and 2010. This is an anomaly of the data, but the forecasts for growth are consistent for all communities shown in the table.</p> <p>Note 2: Census data is not available for the unincorporated communities of Sun Village, Pearblossom, and Leona Valley.</p> <p>Note 3: California Department of Finance information is compiled only for incorporated cities of California.</p> <p>Note 4: Southern California Association of Governments compiles projection data for census tracts. The population estimates for 2010, 2020, and 2030 for the unincorporated communities of Acton, Little Rock and Quartz Hill contain populations of census tracts that encompass areas that extend beyond the boundaries of the community, thus inflating the estimates.</p> <p>Sources: ¹ Southern California Association of Governments, 2004; ² Kern Council of Governments, 2007; ³ California Department of Finance, 2007.</p>					

The population of Palmdale in 1990 was 66,842. As shown in the table, the population grew to 117,729 in 2000. In 2007, the population of Palmdale was estimated at 145,468, which represents a more than doubling of the population in 17 years. Palmdale is estimated to grow by another 153,856 people by 2030. The estimated population of Lancaster in 2007 was 143,818, an increase of 20 percent since 2000. The growth projections in Lancaster for 2010 and 2020 are 168,032, and 215,468, respectively (California Department of Finance, 2007; Kern Council of Governments, 2004). Santa Clarita, the fourth largest city in Los Angeles County had an estimated population of 177,159 in 2007. The estimated populations for the Cities of Victorville and Adelanto, both in San Bernardino County, are approximately 102,538 and 27,139, respectively. These San Bernardino County cities are expected to grow to 123,641 and 44,129, respectively by 2030.

Average annual population growth rates in the local and regional areas are shown in Table 5.11-3. As shown in the table, between 2000 and 2007, the fastest growth in the vicinity of the Project, based on percentage of population, has occurred in Kern County, San Bernardino, and then Los Angeles County. In percentage terms, Victorville represents the fastest growing community in the overall area of interest. Growth rates in Palmdale for the years 2010 to 2020 and 2020 to 2030 are predicted to increase (2010 to 2020) and then decrease (2020 to 2030) from the rates of the recent past, but still are expected to exceed the growth rates of the other nearby communities.

The largest unincorporated community in the local vicinity is Lake Los Angeles with a population of 11,657 in 2000. The communities of Acton, Little Rock, Quartz Hills and Lake Los Angeles are expected to experience moderate growth to the year 2030. While Lake Los Angeles is predicted to grow by 22.8 percent between 2020 and 2030, its population is expected to stay below 15,000. Census information was not available for the communities of Pearblossom, Sun Village or Leona Village.

5.11.2.4 Housing

In 2005, Palmdale had 39,988 housing units, with a vacancy rate of 3.7 percent and Lancaster contained approximately 43,889 housing units, with a vacancy rate of 3.7 percent. Renter-occupied housing units represent 29.1 percent of the Palmdale housing occupancy and 41.1 percent of the Lancaster housing occupancy (U.S. Census Bureau, 2008). Lake Los Angeles has 3,469 housing units with a vacancy rate of 8.3 percent. Renter-occupied housing units represent 22.3 percent of the Lake Los Angeles housing occupancy.

In 2005, Los Angeles County contained approximately 3,339,763 housing units and had a housing vacancy rate of 4.7 percent (U.S. Census Bureau, 2008). Renter-occupied units totaled 1,621,543 units, or 50.9 percent of the market. In addition to owner-occupied and rental housing, there are motel/hotel accommodations available throughout the local area. Specifically, Palmdale has 14 motels/hotels and Lancaster has 16 motels/hotels (California Hotel and Lodging Association, 2008). As a comparison, Kern County as a whole contained approximately 262,651 housing units with a vacancy rate of 9.3 percent and San Bernardino County had 668,378 housing units with a vacancy rate of 11.3 percent (U.S. Census Bureau, 2008).

Table 5.11-3 Average Annual Population Growth Rates

County/City	Annual Growth Rates		
	2000-2007 ³	2010-2020	2020-2030
Los Angeles County ¹	1.12%	0.73%	0.62%
Lancaster	2.92%	2.82%	2.05%
Palmdale	3.11%	4.71%	1.52%
Santa Clarita	2.50%	1.67%	3.69%
Acton	n/a	3.46%	2.11%
Little Rock	n/a	3.26%	2.02%
Quartz Hill	n/a	3.92%	2.29%
Lake Los Angeles	n/a	1.37%	22.81%
San Bernardino County	2.66%	1.64%	1.31%
Adelanto	7.04%	3.6%	2.48%
Victorville	8.29%	2.67%	1.96%
Apple Valley	4.11%	1.81%	1.43%
Barstow	1.90%	2.68%	1.97%
Hesperia	5.24%	4.51%	2.90%
Kern County ²	2.92%	2.45%	3.37%
Bakersfield	4.41%	2.66%	2.66%
n/a = not available			
<u>Note 1:</u> Growth rates based on population estimates and projections in Table 5.11-2. Growth rates are unavailable for Sun Village, Pearblossom, Leona Valley, and Antelope Center.			
<u>Note 2:</u> California Department of Finance information is compiled only for incorporated cities of California.			
Sources: ¹ Southern California Association of Governments, 2004; ² Kern Council of Governments, 2007; ³ California Department of Finance, 2007.			

5.11.2.5 Economy and Employment

The 2005 employment by industrial sector for Los Angeles, San Bernardino, and Kern Counties is summarized in Table 5.11-4. As of November 2006, Los Angeles County employment was 4,100,200, and San Bernardino employment was 1,345,100. As shown in Table 5.11-4, the government, construction, manufacturing, and retail trade sectors are the largest employers in all three counties. Los Angeles County also has a large professional and business services sector that employs 14.5 percent of the working population.

Table 5.11-4 2006 Employment by Industry for Los Angeles, San Bernardino and Kern Counties

Sector	Los Angeles County		San Bernardino County		Kern County	
	Employment	Employment	Employment	Percentage	Employment	Percentage
Government	588,600	231,600	231,600	14.4%	57,300	20.7%
Agriculture	7,600	16,000	16,000	0.2%	44,600	16.1%
Construction and Manufacturing	619,000	255,000	255,000	15.1%	32,900	11.9%
Retail Trade	423,200	181,500	181,500	10.3%	29,200	10.5%
Professional and Business Services	594,700	152,700	152,700	14.5%	25,000	9.0%
Education and Health Services	481,300	129,900	129,900	11.7%	22,900	8.3%
Leisure and Hospitality	387,500	136,000	136,000	9.5%	20,700	7.5%
Finance, Information, Insurance and Real Estate	457,700	69,400	69,400	11.2%	11,600	4.2%
Transportation and Utilities	165,700	69,200	69,200	4.0%	9,300	3.4%
Natural Resources and Mining	4,000	1,400	1,400	0.1%	9,300	3.4%
Wholesale Trade	225,200	57,100	57,100	5.5%	7,500	2.7%
Other Services	145,700	45,300	45,300	3.6%	6,900	2.5%
Total	4,100,200	1,345,100	1,345,100	100%	277,200	100%

Source: California Employment Development Department, 2007.

The employed labor force in the City of Palmdale was 48,286 in 2000 and grew to approximately 60,116 by 2005. The employed labor force in the City of Lancaster was 49,136 in 2000 and grew to approximately 58,115 by 2005 (U.S. Census Bureau, 2007). The employed labor force in the City of Victorville was 22,385 in 2000 and grew to approximately 23,150 by 2004. Trends indicate that the labor force will continue to grow. The Southern California Association of Governments, in its Ninth Annual Regional Economic Forecast for Southern California 2006-2007, reported that “the strongest job growth is associated with California’s inland counties and Southern California” with total non-farm employment in Riverside/San Bernardino Counties estimated to have increased 2.2 percent between 2004 and 2005; 3.9 percent between 2005 and 2006; and 4.7 percent between 2006 and 2007 for an average annual change of 3.6 percent between 2004 and 2007 (SCAG, 2006). Employment data by industrial sector for the City of Palmdale are provided in Table 5.11-5. As illustrated in the table, the major sectors of employment in the City are Education, Health, and Social Services, Retail Trade, and Manufacturing.

In 2000, the cities of Palmdale and Lancaster had annual unemployment rates of 6.1 and 6.5 percent, respectively (U.S. Census Bureau, 2007). Santa Clarita’s unemployment rate in May 2007 was 2.7 percent compared to 4.4 percent for Los Angeles County as a whole and 4.9 percent for the State of California (California Employment Development Department 2007). In 2005, the Cities of Victorville and Adelanto had annual unemployment rates (not adjusted) of 6.0 percent and 7.8 percent, respectively, which were both above the rate of 5.0 percent for San Bernardino County for a whole in that year.

In 2006, Los Angeles County’s workforce makes up approximately 49 percent of its population, with the remaining 51 percent including, among others, children, the retired, military personnel, and prisoners. In 2000, Los Angeles County’s workforce represented 45 percent of the population. Between 2000 and 2006, Los Angeles County’s workforce grew from 4,312,264 to 4,888,595, representing a total employment growth of 13 percent. Between 2001 and 2006, the County’s labor force grew at an average annual rate of 1.7 percent, adding 5,800 members. Kern County’s labor force increased from 322,600 in 2005 to 328,400 in 2006, while employment grew by approximately 7,000 jobs during this same period. Total employment grew 2.4 percent between 2005 and 2006, from 296,500 to 303,500 (Kern Economic Development Corporation, 2007a). As job growth exceeded labor force growth from 2005 to 2006, unemployment decreased from 26,100 to 24,900. Transformation from a resource-based economy to an industrial and service-oriented economy has contributed to a drop in the County’s unemployment rate from 8.1 percent in 2005 to 7.6 percent in 2006, two percent above the state average.

In Kern County, industries that experienced rapid growth between 2005 and 2006 included energy and chemicals; transportation, logistics, and warehousing; business and professional services; and tourism, recreation, and entertainment (Kern Economic Development Corporation, 2007b). Between 2002 and 2006, the construction employment sector experienced the fastest growth rate of all major industries, increasing by 50 percent. The construction sector employed an estimated 4.6 percent of the workforce (Table 5.11-5).

As of January 2008, unemployment rates for the U.S., Los Angeles County, Kern County, and San Bernardino County were estimated at 4.8, 4.5, and 7.6 percent, respectively. Available 2006 census data for local communities indicates that unemployment rates for Palmdale and Lancaster were 8.6 and 11.7 percent, respectively.

Los Angeles County's total employment is expected to grow about 10.3 percent between 2004 and 2014; adding approximately 450,500 new jobs by 2014. Non-farm wage and salary employment, which accounts for 91.6 percent of the total employment, is expected to grow 11.3 percent over the 10 year period. Nearly 73 percent of all non-farm wage and salary jobs are forecasted to occur in construction, professional and business services, government, retail trade, and education and health services (California Employment Development Department, 2007).

Table 5.11-5 Employment by Industry (Year 2006 Annual Average)

Industrial Sector	Palmdale Employment (%)	Lancaster Employment (%)	Victorville Employment (%)	Adelanto Employment (%)*2000	Hesperia Employment (%)
Public Administration	2,570 (4.5%)	4,011 (8.2%)	1,348 (3.8%)	329 (6.8%)	1,864 (5.2%)
Education, Health, and Social Services	11,256 (19.9%)	10,886 (22.3%)	6,859 (19.2%)	900 (18.5%)	4,880 (13.5%)
Professional Services	5,645 (10.0%)	3,680 (7.5%)	2,905 (8.1%)	289 (5.9%)	2,928 (8.1%)
Arts, Recreation, and Food Services	4,875 (8.6%)	4,468 (9.1%)	2,201 (6.2%)	233 (4.8%)	3,262 (9.1%)
Retail Trade	7,915 (14.0%)	6,484 (13.3%)	5,768 (16.2%)	602 (12.4%)	5,636 (15.6%)
Manufacturing	7,004 (12.4%)	4,236 (8.7%)	3,712 (10.4%)	964 (19.8%)	4,064 (11.3%)
Transportation and Public Utilities	2,141 (3.8%)	1,924 (3.9%)	3,261 (9.1%)	454 (9.3%)	3,402 (9.4%)
Construction	6,047 (10.7%)	4,379 (9.0%)	2,397 (6.7%)	306 (6.3%)	5,461 (15.2%)
Finance, Insurance, and Real Estate	3,863 (6.8%)	3,037 (6.2%)	1,679 (4.7%)	168 (3.5%)	697 (1.9%)
Agriculture and Mining	356 (0.6%)	389 (0.8%)	212 (0.6%)	98 (2.0%)	0 (0.0%)
Other Services	4,907 (8.7%)	5,372 (11.0%)	5,367 (15.0%)	523 (10.7%)	3,856 (10.7%)
Total	56,579 (100%)	48,866 (100%)	35,709 (100%)	4,866 (100%)	36,032 (100%)

5.11.2.6 Public Services and Utilities

This subsection describes public services and utilities in the Project area.

Law Enforcement

The Los Angeles County Sheriff's Department is under contract with the City of Palmdale to provide police protection and public safety services. These services include traffic and neighborhood police protection and public safety services. The Palmdale Sheriff Station is manned by 189 sworn deputies and 56 non-sworn employees (Palmdale Sheriff Station Operations, 2008). This station provides law enforcement services to an estimated 700 square miles. The County Sheriff would respond to the PHPP plant site from the Palmdale Station located at 750 E Ave Q, which is located approximately 4.2 miles south of the site. According to the Palmdale Sheriff's Station, average response time to the PHPP site would depend on the severity of the incident and the location of the deputies on call. In extreme cases, the Lancaster Sheriff Station may respond to emergencies (Palmdale Sheriff Station Operations, 2008). The Lancaster Sheriff Station is located at 501 West Lancaster Blvd. in Lancaster, approximately 3.7 miles to the north of the PHPP plant site. The Lancaster Station is manned by 189 sworn personnel and 74 civilian personnel (Lancaster Sheriff Station Operations, 2008).

The California Highway Patrol (CHP) is the primary law enforcement agency for State highways and roads. Services include law enforcement, traffic control, accident investigation, and the management of hazardous materials spill incidents.

Fire Protection

Fire protection in the Project area is provided by the Los Angeles County Fire Department. The Los Angeles County Fire Department is a full-service department providing fire management, fire operations, fire and environmental safety, and emergency medical services to the residents of Los Angeles County. There are ten fire stations in the City of Palmdale (FS 24, 37, 93, 136, 79, 80, 81, 92, 114, and 131) and seven stations in the City of Lancaster (FS 33, 112 CFF, 117, 129, 130, 134, and 135). The nearest fire station is Station Number 129 located one mile to the west of the PHPP plant site at 42110 6th St W in the City of Lancaster. Average response time is estimated to be less than two minutes. This station employs nine full-time fire fighters and is trained to handle hazardous materials releases.

Hospitals

Emergency medical services in the Project area are provided by American Medical Response (AMR), which provides transportation, including ambulance service and monitoring, service area performance standards, and communication systems. According to staff at AMR, patients are transferred to the appropriate hospital based on the injury and availability of space at the local hospitals (AMR, 2008). The nearest hospitals to the PHPP plant site include Antelope Valley Hospital Medical Center (five miles northwest), the LAC/High Desert Hospital (10 miles northwest), and Lancaster Community Hospital (3.2 miles northwest) (Palmdale Chamber of Commerce, 2008). A hospital, the Palmdale Regional Medical Center, is currently under construction in Palmdale. Table 5.11-6 provides a summary of the hospital services in the Project area.

Table 5.11-6 Hospitals Serving the Project Area

Hospital/Address	Available Services
Antelope Valley Hospital and Medical Center 1600 W Ave. J, Lancaster	24-hour Emergency Room, Obstetrical Services, Critical Care Units, Rehabilitation, Maternal Child Health Care, Physical Therapy, Home Care Services, Radiology, Transportation Services, and Mental Health Care. An estimated 420 beds are available.
High Desert Hospital 44900 N 60th St., Lancaster	Multi-service Ambulatory Care Center. An estimated 170 certified beds are available.
Lancaster Community Hospital 43830 10 th St W, Lancaster	Emergency Department, Acute Rehabilitation Unit, Center for Wound Care and Hyperbaric Medicine, Cardiac Center. An estimated 117-licensed acute care beds are available.

Natural Gas and Electricity

Natural gas services in the Project area are provided by the Southern California Gas Company. Electrical service to local consumers is provided by Southern California Edison.

Water and Wastewater

The Palmdale area receives its potable water from surface sources such as the California Aqueduct and local groundwater. The Project will use reclaimed water supplied by the City of Palmdale Water Reclamation Plant (PWRP) for cooling tower makeup and other industrial uses. The PWRP's current treatment capacity is 15 million gallons per day (mgd), and in 2004 the PWRP treated an average flow of 9.4 mgd (Los Angeles County Sanitation District, 2005). The current 15 mgd capacity for the PWRP is projected to be reached by 2013, and the Los Angeles County Sanitation District 20 (District 20), which encompasses Palmdale, plans to expand the capacity of the PWRP to 22.4 mgd by 2025.

Treated wastewater management is a particular challenge in District 20 because the Antelope Valley is a closed basin with no outlet to the Pacific Ocean. Historically, treated wastewater was disposed of through land application or agricultural reuse. In 2000, the Lahontan RWQCB revised its discharge requirements for the PWRP due to suspected nitrate contamination in groundwater attributed in part to land application and agricultural reuse of treated wastewater. Land application and agricultural use above rates that can be utilized by crops or vegetation are no longer acceptable and the PWRP must devise alternative uses for treated wastewater. District 20 estimates that 7.8 mgd could be used for municipal reuse for irrigating parks, school grounds, golf courses, and similar areas, but this is still much less than the projected flow rate of 22.4 mgd in 2025 (Los Angeles County Sanitation District, 2005). Therefore the District is looking for additional uses for reclaimed water, including the proposed Project.

The small quantity of potable water required by the Project's workforce will be provided by the Los Angeles County Waterworks District No. 40. This agency uses both surface water from the California Aqueduct and from Little Rock Reservoir (60 percent of their supply) and groundwater from local wells (40 percent of their supply).

Solid Waste

Waste Management of Antelope Valley operates two landfills within the Antelope Valley. They are also responsible for the operation of two special waste facilities and provide information to the residents of Palmdale and Lancaster regarding recycling and waste reduction techniques. The nearest landfills that serve the Project site include the Antelope Valley Landfill and the Lancaster Landfill, which are located at 1220 W. City Ranch Road in the City of Palmdale and 600 E Ave F in the City of Lancaster, respectively (also see Section 5.16, Waste Management).

5.11.2.7 Schools

Educational needs in the Project area are served by the Palmdale School District (PSD), Westside Union School District (WUSD), and the Antelope Valley Union High School District (AVUHSD). As of May 2008, there were 21 elementary schools, including four kindergarten through 5th grade, eleven kindergarten through 6th grade, and six kindergarten through 8th grade, and four intermediate schools, two 6th through 8th grade and two 7th through 9th grade within the PSD. Table 5.11-7 summarizes location, grades served, and student enrollment for schools within the PSD. Total enrollment in the PSD was approximately 21,500 students during the 2007-2008 school year.

Table 5.11-7 Summary of Schools and Enrollment in Palmdale School District

School Name	Grades	Location (within the City of Palmdale)	Students
Barrel Springs Elementary School	K – 5	3636 Ponderosa Way	805
Buena Vista Elementary School	K – 8	37005 Hillcrest Drive	915
Cactus Intermediate School	6 – 8	38060 20 th St E	1,104
Chaparral Elementary School	K – 6	37500 50 th St E	1,020
Cimarron Elementary School	K – 6	36940 45 th St E	936
Desert Rose Elementary School	K – 5	37730 27 th St E	1,114
Desert Willow Intermediate School	6 – 8	36555 Sunny Lane	929
Golden Poppy Elementary School	K – 8	37802 Rockie Lane	884
Joshua Hills Elementary School	K – 5	3030 Fairfield	840
Juniper Intermediate School	7 – 8	39066 Palm Tree Way	964
Los Amigos Elementary School	K – 8	6640 E Ave R-8	858
Manzanita Elementary School	K – 6	38620 33 rd St E	711
Mesa Intermediate School	K – 8	3243 E Ave R-8	1,068
Mesquite Elementary School	K – 6	37622 43 rd St E	1,000
Oak Tree Learning Center	K – 8	39139 10 th St E	86
Ocotillo Elementary School	K – 6	38737 Ocotillo School Dr.	1,162
Palmdale Learning Plaza	K – 8	38043 Division Street	890

School Name	Grades	Location (within the City of Palmdale)	Students
Palm Tree Elementary School	K – 6	326 E Ave R	918
Quail Valley Elementary School	K – 6	37236 58 th St E	829
Shadow Hills Intermediate School	7 – 8	37315 60 th St E	848
Summerwind Elementary School	K – 6	39360 Summerwind Dr.	756
Tamarisk Elementary School	K – 5	1843 E Ave Q-5	834
Tumbleweed Elementary School	K – 6	1100 E Ave R-4	1,139
Wildflower Elementary School	K – 6	39136 35 th St E	887
Yellen Elementary School	SDC	37015 Goldenview Way	46
Yucca Elementary School	K – 6	38440 2 nd St E	778
Source: Palmdale School District, 2007-2008 School Year.			

The Project area is also served by the WUSD. The WUSD consists of 12 schools/programs servicing kindergarten through 8th grade students within the Antelope Valley. Table 5.11-8 summarizes current student enrollment at the 12 schools/programs within the WUSD. Total enrollment for the WUSD was approximately 8,900 students for the 2006-2007 school year as of June 2007 (WUSD, 2008).

Table 5.11-8 Summary of School Enrollment in Westside Union School District

School Name	Grades	Location	Students
Anaverde Hills Elementary School	K – 8	39360-B Summerwind Drive Palmdale, CA	420
Cottonwood Elementary School	K – 6	2740 W Ave P-8 Palmdale, CA	828
Del Sur School	K – 8	9023 W Ave H Palmdale, CA	910
Esperanza Elementary	K – 6	40521 35 th St W Palmdale, CA	1,122
Hillview Middle School	7 – 8	40525 Peonza Lane Palmdale, CA	979
Joe Walker Middle School	7 – 8	5632 W Ave L-8 Palmdale, CA	890
Leona Valley Elementary School	K – 8	9063 West Leona Avenue Leona Valley, CA	164
Quartz Hill Elementary School	K – 6	41820 50 th St W Quartz Hill, CA	957
Rancho Vista Elementary School	K – 6	40641 Peonza Lane Palmdale, CA	896
Sundown Elementary School	K – 6	6151 W Ave L-8 Lancaster, CA	861
Valley View Elementary School	K – 6	3310 W Ave L-8 Lancaster, CA	861
Mountain School-Home School Program	K – 8	Offices at Anaverde Hills Elementary School	Unknown
Source: Westside Union School District, 2007			

The Project area is also served by the AVUHSD. The AVUHSD consists of 15 schools/programs serving students in grades 9 through 12. Table 5.11-9 summarizes current student enrollment at the 15 schools/programs within the AVUHSD. Total enrollment for the AVUHSD was approximately 24,700 students for the 2007-2008 school year as of May 27, 2008 (AVUHSD, 2008).

Table 5.11-9 Summary of School Enrollment in Antelope Valley Union High School District

School Name	Grades	Location	Students
Antelope Valley High School	9 - 12	44900 N. Division Street Lancaster, CA	2,149
Palmdale High School	9 – 12	2137 E Ave R Palmdale, CA	3,378
Quartz Hill High School	9 - 12	6040 W Ave J Quartz Hill, CA	3,428
Knight High School	9 - 12	37423 70 th St E Palmdale, CA	3,471
Lancaster High School	9 - 12	44701 N. 32 nd St W Lancaster, CA	3,248
Highland High School	9 - 12	39055 25 th St W Palmdale, CA	3,308
Little Rock High School	9 - 12	10833 E Ave R Little Rock, CA	2,056
Eastside High School	9 - 12	3200 E Ave J-8 Lancaster, CA	1,995
Desert Winds Continuation High School	9 – 12	45030 3 rd St E Lancaster, CA West Valley Campus: 6300 Wt Avenue L Quartz Hill, Ca	672
R. Rex Parris Continuation High School	9 – 12	38801 Clock Tower Plaza Palmdale, CA	585
Phoenix Community High School	9 – 12	North: 228 E Avenue H-8 Lancaster, CA South: 2270 E Avenue Q Palmdale, CA	170
S.O.A.R.	9 – 12		128
Home Study Program	9 – 12	Offices at Lancaster High School	51
Desert Pathways	9 – 12	6300 W Avenue L, Rm. 23 Quartz Hill, CA	43
Source: Antelope Valley Union High School District, 2008.			

5.11.2.8 Fiscal Resources

The local jurisdictions that will contain PPHP facilities and that have taxing power are the City of Palmdale and Los Angeles County. For the fiscal year (fy) 2006-2007, net assets as of June 30, 2007 for Los Angeles County totaled approximately \$15.44 billion, which was an increase of over \$1.3 billion (nine percent) from fiscal year 2005-2006. Los Angeles County's key expenditures were on public protection, which comprised 36.5 percent of total expenditures. A summary of Los Angeles County's expenses and revenues for the fiscal year is provided in Table 5.11-10.

Table 5.11-10 County of Los Angeles Expenses and Revenues for FY 2006-2007

	Amount (in billions)	Percentage
Expenses	\$13.33	100%
General Government	\$0.81	6%
Public Protection	\$4.87	36%
Public Ways and Facility	\$0.28	2%
Health & Sanitation	\$2.22	17%
Public Assistance	\$4.54	34%
Education	\$0.10	1%
Recreation and Cultural Services	\$0.27	2%
Interest on Long-Term Debt	\$0.24	2%
Revenues	\$15.45	100%
Charges for Services	\$2.40	16%
Operating Grants & Contributions	\$6.98	45%
Capital Grants & Contributions	\$0.02	0.1%
Taxes	\$4.69	30%
Unrestricted Grants & Contributions	\$0.76	4.9%
Investment Earnings	\$0.34	2%
Miscellaneous	\$0.26	2%
Revenues minus Expenses	\$2.12	--
Source: County of Los Angeles, Auditor/Controller, 2008.		

For the fiscal year 2006-2007, the City of Palmdale's total net assets increased by \$33.97 million, due primarily to an increase in operating grants, property taxes, and tax increment revenue. As of June 30, 2007, net assets for the City of Palmdale totaled approximately \$709.14 million. Total City revenues, which include program and general revenue, were approximately \$182.16 million, while total expenses were approximately \$148.19 million. In the fiscal year 2006-2007, property taxes amounted to approximately \$17.07 million (approximately 9 percent) of the City of Palmdale's total revenues. A

summary of the City of Palmdale's expenses and revenues for fiscal year 2006-2007 is provided in Table 5.11-11.

Table 5.11-11 City of Palmdale Expenses and Revenues for FY 2006-2007

	Amount (in millions)	Percentage
Expenses	\$148.19	100%
General Government	\$18.09	12%
Public Safety	\$20.45	14%
Public Services	\$39.98	27%
Community Development	\$35.77	24%
Health & Welfare	\$1.30	1%
Cultural and Recreation	\$17.60	12%
Interest on Long-Term Debt	\$15.00	10%
Revenues	\$182.16	100%
Charges for Services	\$33.57	18%
Operating Grants & Contributions	\$16.12	9%
Capital Grants & Contributions	\$44.18	24%
Tax Increment	\$41.64	23%
Property Taxes	\$17.07	9%
Sales Taxes	\$18.24	10%
Other Taxes	\$7.64	4%
Unrestricted Investment Earnings	\$2.88	2%
Other	\$0.82	1%
Revenues minus Expenses	\$33.97	--
Source: City of Palmdale, Department of Finance, 2008.		

5.11.3 Environmental Impacts

The following sections discuss the expected impacts of PHPP construction and operation on the socioeconomic resources of the Project area.

5.11.3.1 Evaluation Methods and Significance Criteria

For the purposes of this evaluation, local environmental impacts were determined by comparing Project demands during construction and operation with the socioeconomic resources of Los Angeles County, Palmdale, and nearby communities. The criteria used to determine the significance of Project-related socioeconomic impacts are those suggested in the CEQA guidelines. Project-related impacts would be considered significant if they:

- Induce substantial growth or concentration of population;
- Displace a large number of people or existing housing;
- Cause a substantial decrease in employment or property values;
- Result in the addition of students into an impacted school;
- Cause a substantial increase in the demand for public services that would affect local agencies' ability to provide public services; or
- Cause substantial disruption or division of the physical arrangement of an established community.

Project socioeconomic impacts also could be considered significant if they cause substantial change in community interaction patterns, social organization, social structures, or social institutions; cause substantial conflict with community attitudes, values, or perceptions; or cause substantial inequities in the distribution of Project costs and benefits.

5.11.3.2 Construction

The following subsections describe the potential construction phase impacts of the Project on population, housing, employment, public services, utilities, schools, and the economic base and fiscal resources of Los Angeles County and the cities of Palmdale, Lancaster, Santa Clarita, Victorville, Hesperia, Adelanto, and Apply Valley.

Project Work Force and Population

Project construction is expected to occur over a total of 27 months. Including linear facilities as well as the plant site facilities, Project construction would require an average of 367 employees per day over the entire 27 month construction period with manpower requirements peaking at approximately 767 workers in Month 12 of construction (see Table 5.11-12).

The primary trades required for construction of the proposed Project will include carpenters, cement masons, electricians, ironworkers, millwrights, equipment operators, welders, painters, pipefitters, insulators, boilermakers, skilled and unskilled laborers, supervisors, teamsters, management, operating engineers, and administrative staff. The anticipated number of workers anticipated by trade required for Project construction is shown in Table 5.11-12.

According to the Electric Power Research Institute (EPRI) report titled *Socioeconomic Impacts of Power Plants*, construction workers will commute as much as two hours to construction sites from their homes, rather than relocate (EPRI, 1982). The availability of construction workers by trade in Los Angeles is shown in Table 5.11-13; Tables 5.11-14 and 5.11-15 show the same data for the counties of Kern and San Bernardino. As shown in Table 5.11-16, nearly 350,000 construction workers are available within the combined Los Angeles, Kern, and San Bernardino county region. The proposed Project would be expected to draw from the entire construction work force in the region.

Table 5.11-12 PPHP Construction Workforce by Skill																											
Manpower by Trade/Project Element	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15	M 16	M 17	M 18	M 19	M 20	M 21	M 22	M 23	M 24	M 25	M 26	M 27
Construction - Combined-Cycle Component																											
Welders	0	0	0	0	15	25	30	30	30	35	35	40	30	30	30	25	25	30	25	25	20	15	10	10	10	10	10
Carpenters, Bricklayers and Masons	20	20	25	30	30	35	35	35	25	15	15	15	15	15	15	15	10	10	10	10	10	5	5	5	5	5	5
Electricians	12	15	20	20	20	20	20	20	25	25	25	25	25	25	20	20	20	20	20	19	18	15	15	15	15	15	10
Ironworkers	5	10	10	10	10	10	10	15	15	15	15	15	15	15	15	15	10	10	5	5	5	5	5	5	5	5	5
Laborers	55	55	55	50	50	50	50	45	45	45	45	45	45	45	27	23	23	23	23	23	23	15	15	15	15	15	15
Millwrights	0	0	0	5	5	15	15	15	18	18	18	20	20	11	10	6	3	3	3	3	3	2	2	2	1	1	1
Equipment Operators	8	10	12	12	12	12	12	12	10	10	10	10	10	10	10	10	10	6	6	6	6	6	3	3	3	3	3
Plasterers	0	0	0	0	0	0	0	0	0	3	5	5	4	3	2	0	0	0	0	0	0	0	0	0	0	0	0
Painters	0	0	0	0	0	0	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1
Pipefitters	6	10	12	25	25	45	45	45	45	45	40	40	35	35	35	35	35	35	35	35	35	35	35	35	23	23	23
Sheetmetal Workers	0	0	0	0	0	3	6	6	12	12	12	12	12	12	12	10	6	6	6	6	3	3	3	3	3	3	3
Sprinklerfitters	0	0	0	0	0	0	0	0	0	5	7	10	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0
Surveyors/Designers	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Insulation Workers	0	0	0	0	0	0	0	0	0	0	5	9	15	18	18	18	14	10	7	7	2	0	0	0	0	0	0
Supervisors, Planners, etc.	20	25	30	30	34	34	34	38	38	38	34	34	34	28	28	28	23	23	22	22	22	20	20	20	20	20	20
<i>Subtotal</i>	129	148	167	185	204	252	263	267	269	272	272	285	272	259	227	210	184	181	167	166	152	126	118	106	105	104	99
Construction - Solar Component																											
Unskilled Laborers	0	0	24	24	24	36	48	60	84	108	132	204	216	180	108	48	30	30	0	0	0	0	0	0	0	0	0
Pipefitters	0	0	2	2	2	3	4	5	7	9	11	17	18	15	9	4	2.5	2.5	0	0	0	0	0	0	0	0	0
Welders	0	0	2	2	2	3	4	5	7	9	11	17	18	15	9	4	2.5	2.5	0	0	0	0	0	0	0	0	0
Electrician	0	0	2	2	2	3	4	5	7	9	11	17	18	15	9	4	2.5	2.5	0	0	0	0	0	0	0	0	0
I&C	0	0	2	2	2	3	4	5	7	9	11	17	18	15	9	4	2.5	2.5	0	0	0	0	0	0	0	0	0
Management, Engineering & Administration	5	5	4	4	4	6	8	10	14	18	22	34	36	30	18	8	5	5	0	0	0	0	0	0	0	0	0
Masons	0	0	2	2	2	3	4	5	7	9	11	17	18	15	9	4	2.5	2.5	0	0	0	0	0	0	0	0	0
Operating Engineers	0	0	2	2	2	3	4	5	7	9	11	17	18	15	9	4	2.5	2.5	0	0	0	0	0	0	0	0	0
<i>Subtotal</i>			40	40	40	60	80	100	140	180	220	340	360	300	180	80	50	50	0	0	0	0	0	0	0	0	0

Table 5.11-12 PHPP Construction Workforce by Skill (Continued)

Manpower by Trade/Project Element	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8	M 9	M 10	M 11	M 12	M 13	M 14	M 15	M 16	M 17	M 18	M 19	M 20	M 21	M 22	M 23	M 24	M 25	M 26	M 27	
Construction - Pipelines (Gas, Water Supply, Etc.)																												
Unskilled Labor			0	0	0	0	28	28	28	28	42	42	42	42	42	0	0	0	0	0	0	0	0	0	0	0	0	0
Welders			0	0	0	0	3	3	3	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Pipefitters			0	0	0	0	3	3	3	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Equipment Operators			0	0	0	0	9	9	9	9	14	14	14	14	14	0	0	0	0	0	0	0	0	0	0	0	0	0
Foremen			0	0	0	0	4	4	4	4	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0
Supervisors, Etc			0	0	0	0	1	1	1	1	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Subtotal</i>			0	0	0	0	48	48	48	48	72	72	72	72	72	0	0	0	0	0	0	0	0	0	0	0	0	0
Construction- Transmission Lines																												
General Foremen			3	6	4	4	6	4	1	0	0	0	0	0	3	4	5	4	0	0	0	0	0	0	0	0	0	0
Foreman			14	14	8	8	12	8	2	12	16	10	0	4	13	16	11	8	0	0	0	0	0	0	0	0	0	0
Leadman			19	19	4	4	4	5	6	4	0	1	4	20	20	20	4	4	4	0	0	0	0	0	0	0	0	0
Journey Lineman			20	32	36	36	51	32	8	12	36	18	0	0	30	40	34	24	0	0	0	0	0	0	0	0	0	0
Apprentice Linemen			8	14	16	16	18	8	2	4	12	6	0	0	6	8	10	8	0	0	0	0	0	0	0	0	0	0
Groundman			16	19	20	20	17	10	12	12	12	15	8	8	14	16	10	8	10	0	0	0	0	0	0	0	0	0
Equipment operators			24	36	28	28	33	26	18	23	28	17	12	24	36	40	28	24	10	0	0	0	0	0	0	0	0	0
Cement Truck Drivers			18	18	0	0	0	0	0	12	8	0	0	20	20	20	0	0	0	0	0	0	0	0	0	0	0	0
Welders			8	2	0	0	0	0	0	0	0	0	0	0	9	12	3	0	0	0	0	0	0	0	0	0	0	0
Mechanic			4	4	4	4	6	4	1	3	4	3	0	0	3	4	5	4	0	0	0	0	0	0	0	0	0	0
Skilled Laborers			24	24	0	0	0	0	0	16	8	0	0	0	28	28	0	0	0	0	0	0	0	0	0	0	0	0
Carpenters			9	9	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Subtotal</i>	0	0	167	197	120	120	147	97	50	102	124	70	24	76	182	208	110	84	24	0	0	0	0	0	0	0	0	0
Total	129	148	374	422	364	432	538	512	507	602	688	767	728	707	661	498	344	315	191	166	152	126	118	106	105	104	99	

Table 5.11-13 Available Labor: Long Beach Metropolitan Statistical Area (Los Angeles County)

Occupational Title	Annual Average Employment		Employment Change		Average Annual Job Openings		
	2004	2014	Number	Percentage	New Jobs	Net Replacements	Total
Construction Managers	7,300	7,950	650	8.9	65	132	197
Construction Trades Workers	130,460	140,910	10,450	8.0	1,045	2,352	3,397
Brickmasons and Blockmasons	2,210	2,370	160	7.2	16	33	49
Carpenters	24,680	27,330	2,650	10.7	265	402	667
Cement Masons and Concrete Finishers	3,870	4,370	500	12.9	50	78	128
Construction Laborers	24,820	25,880	1,060	4.3	106	330	436
Paving, Surfacing, and Tamping Equipment Operators	590	660	70	11.9	7	8	15
Operating Engineers and Other Construction Equipment Operators	4,080	4,580	500	12.3	50	105	155
Electricians	13,600	14,550	950	7.0	95	269	364
Insulation Workers	910	910	0	0.0	0	27	27
Painters, Construction and Maintenance	12,410	13,440	1,030	8.3	103	189	292
Plumbers, Pipefitters, and Steamfitters	12,580	13,780	1,200	9.5	120	289	409
Plasterers and Stucco Masons	2,810	2,930	120	4.3	12	51	63
Reinforcing Iron and Rebar Workers	1,210	1,300	90	7.4	9	24	33
Sheet Metal Workers	2,810	2,990	180	6.4	18	67	85
Helpers' Construction Trades	7,070	7,500	430	6.1	43	293	336

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Occupational Title	Annual Average Employment		Employment Change		Average Annual Job Openings		
	2004	2014	Number	Percentage	New Jobs	Net Replacements	Total
Helpers— Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	1,370	1,500	130	9.5	13	57	70
Helpers—Carpenters	960	1,100	140	14.6	14	40	54
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	400	430	30	7.5	3	17	20
Welders, Cutters, Solderers, and Brazers	8,520	8,270	-250	-2.9	0	241	241
Plant and System Operators	4,700	4,890	190	4.0	19	136	155
Surveyors	730	810	80	11.0	8	25	33
Engineering Managers	6,660	7,270	610	9.2	61	133	194
Supervisors, Construction and Extraction Workers	13,480	14,600	1,120	8.3	112	229	341
First Line Supervisors/Mgrs of Construction Trades & Extraction Workers	13,480	14,600	1,120	8.3	112	229	341
Structural Metal Fabricators and Fitters	1,270	1,380	110	8.7	11	25	36
Machinists	9,550	9,090	-460	-4.8	0	223	223
Source: California Employment Development Department, 2007.							

Table 5.11-14 Available Labor: Kern County Statistical Area

Occupational Title	Annual Average Employment		Employment Change		Average Annual Job Openings		
	2004	2014	Number	Percent-	New Jobs	Net Replacements	Total
Construction Managers	530	740	210	39.6	21	10	31
Construction Trades Workers	14,140	19,550	5,410	38.3	541	256	797
Brickmasons and Blockmasons	290	410	120	41.4	12	4	16
Carpenters	1,990	2,820	830	41.7	83	32	115
Cement Masons and Concrete Finishers	780	1,140	360	46.2	36	16	52
Construction Laborers	3,500	4,770	1,270	36.3	127	47	174
Paving, Surfacing, and Tamping Equipment Operators	50	80	30	60.0	3	1	4
Operating Engineers and Other Construction Equipment Operators	550	770	220	40.0	22	14	36
Electricians	1,590	2,180	590	37.1	59	32	91
Insulation Workers	80	100	20	25.0	2	2	4
Painters, Construction and Maintenance	1,080	1,450	370	34.3	37	16	53
Plumbers, Pipefitters, and Steamfitters	1,080	1,540	460	42.6	46	25	71
Plasterers and Stucco Masons	230	320	90	39.1	9	4	13
Reinforcing Iron and Rebar Workers	80	110	30	37.5	3	2	5
Structural Iron and Steel Workers	60	90	30	50.0	3	1	4
Helpers—Construction Trades	640	920	280	43.8	28	27	55
Helpers—Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	170	250	80	47.1	8	7	15
Helpers—Carpenters	250	370	120	48.0	12	11	23

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Occupational Title	Annual Average Employment		Employment Change		Average Annual Job Openings		
	2004	2014	Number	Percent-	New Jobs	Net Replacements	Total
Helpers—Pipelayers, Plumbers, Pipefitters, and Steamfitters	150	220	70	46.7	7	6	13
Welders, Cutters, Solderers, and Brazers	810	1,000	190	23.5	19	23	42
Plant and System Operators	1,780	1,990	210	11.8	21	51	72
Surveyors	70	80	10	14.3	1	3	4
Engineering Managers	360	390	30	8.3	3	7	10
Supervisors, Construction and Extraction Workers	2,090	2,850	760	36.4	76	36	112
First Line Supervisors / Managers of Construction Trades and Extraction Workers	2,090	2,850	760	36.4	76	36	112
Structural Metal Fabricators and Fitters	50	50	0	0.0	0	1	1
Machinists	460	560	100	21.7	10	11	21
Source: California Employment Development Department, 2007.							

**Table 5.11-15 Available Labor: Ontario Metropolitan Statistical Area
(San Bernardino/Riverside Counties)**

Occupational Title	Annual Average Employment		Employment Change		Average Annual Job Openings		
	2004	2014	Number	Percentage	New Jobs	Net Replacements	Total
Construction Managers	3,160	4,370	1,210	38.3	121	57	178
Construction Trades Workers	106,020	135,250	29,230	27.6	2,923	1,876	4,799
Brickmasons and Blockmasons	2,630	3,760	1,130	43.0	113	39	152
Carpenters	28,050	34,500	9,450	33.7	945	457	1,402
Cement Masons and Concrete Finishers	5,170	3,950	1,780	34.4	178	104	282
Construction Laborers	20,010	25,290	5,280	26.4	528	266	794
Paving, Surfacing, and Tamping Equipment Operators	230	280	50	21.7	5	3	8
Operating Engineers and Other Construction Equipment Operators	4,080	5,170	1,190	29.9	119	102	221
Electricians	6,730	7,860	1,130	16.8	113	133	246
Insulation Workers	220	240	20	9.1	2	7	9
Painters, Construction and Maintenance	7,570	9,410	1,840	24.3	184	115	299
Plumbers, Pipefitters, and Steamfitters	4,660	5,650	990	21.2	99	107	206
Plasterers and Stucco Masons	1,520	1,830	310	20.4	31	28	59
Reinforcing Iron and Rebar Workers	1,580	2,040	460	29.1	46	31	77
Sheet Metal Workers	3,930	3,480	550	18.8	55	70	125
Helpers' Construction Trades	4,040	5,350	1,310	32.4	131	168	299

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Occupational Title	Annual Average Employment		Employment Change		Average Annual Job Openings		
	2004	2014	Number	Percentage	New Jobs	Net Replacements	Total
Helpers— Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	1,450	2,000	550	37.9	55	60	115
Helpers—Carpenters	860	1,220	360	41.9	36	36	72
Helpers—Pipelayers, Plumbers, Pipefitters, and Steamfitters	700	880	180	25.7	18	29	47
Welders, Cutters, Solderers, and Brazers	3,920	4,420	470	11.9	47	112	159
Plant and System Operators	1,810	2,150	340	18.8	34	53	87
Surveyors	450	540	90	20.0	9	16	25
Engineering Managers	1,110	1,480	370	33.3	37	22	59
Supervisors, Construction and Extraction Workers	3,810	13,450	3,640	37.1	364	167	531
First Line Supervisors/Mgrs of Construction Trades & Extraction Workers	9,810	13,450	3,640	37.1	364	167	531
Structural Metal Fabricators and Fitters	930	1,040	110	11.8	11	22	33
Machinists	2,740	3,090	350	12.8	35	64	99
Source: California Employment Development Department, 2007.							

Table 5.11-16 Available Construction Labor by Skill

Trade	Available Workers By Metropolitan Area				
	Bakersfield (Kern)	Los Angeles/ Long Beach	San Bernardino/ Riverside	Total for Three Areas	Total Workers Needed (Peak)
Welders, Ironworkers, Millwrights, Boilermakers	960	8,710	4,570	14,040	152
Carpenters, Bricklayers, Masons	2,280	26,890	5,330	34,500	84
Electricians	1,590	13,600	6,730	21,920	253
Laborers (Construction)	3,500	24,820	45,300	73,620	65
Pipefitters, Sprinklerfitters	1,080	12,580	10,310	23,970	339
Painters, Plasterers	1,310	15,220	20,330	36,860	15
Unskilled Labor	3,500	24,820	45,300	73,620	44
Equipment Operators, Operating Engineers	550	4,080	10,170	14,800	108
Insulation Workers	80	910	220	1,210	56
Supervisors, Planners, Management, Administration	4,180	26,960	22,520	53,660	8
Source: California Employment Development Department, 2007					

The availability of over 350,000 construction workers in Los Angeles, Kern and San Bernardino counties alone would be more than sufficient to meet the Project peak needs of 767 employees. Therefore, Project construction labor demand would not significantly affect the availability of construction labor in the region.

As described above, it is assumed that few if any construction workers would permanently relocate to the nearby communities of Palmdale, Lancaster, Lake Los Angeles, Santa Clarita, etc. during the Project construction phase. This is because construction workers typically commute relatively long distances to their work sites. Should some construction workers choose to stay temporarily at a local area motel or hotel, there are at least 30 hotels in the vicinity (Palmdale and Lancaster) with rooms available to meet this demand. Should a portion of the workers relocate to the area for the duration of their construction assignments, impacts to available housing and population would be minor, as vacancy rates in Palmdale and Lancaster are both estimated at 3.7 percent.

It is anticipated that the Project construction work force would be drawn from the local area (e.g., Palmdale, Lancaster and Lake Los Angeles), from other parts of Los Angeles County (e.g., Santa Clarita and parts of the Los Angeles Basin), and from parts of San Bernardino County (e.g., the Victor Valley). Because of the size of the regional construction work force, Project construction labor demand would not significantly affect the availability of construction labor in the region.

Population

As noted above, it is anticipated that the vast majority of the construction workforce (a peak workforce of 767 workers and an average of 367 workers per day over the 27-month duration of PPHP construction), would commute to the Project site rather than relocate. Thus, impacts to population are expected to be minimal, and the Project would not induce substantial growth. Additionally, the Project would not displace existing populations.

Housing

Because the PPHP construction workforce largely will commute to the area rather than relocate, increased demand on the local housing supply are expected to be negligible. In addition, because of the availability of hotel and motel accommodations, and the housing vacancy rates in nearby communities as described above, workers who choose to relocate temporarily would not be expected to have a significant impact on housing availability.

Employment and Economy

Project construction would create a temporary, positive impact on the local economic base and fiscal resources. Construction employment wages and salaries would provide additional income to the area, as would local expenditures for construction materials and services. The Project construction payroll has been estimated at approximately \$106 million (approximately \$47 million annually), including the power generating facilities and linear facilities (transmission line and gas pipeline). Local expenditures for construction materials and supplies are estimated at \$59 million. These include everything from permanent materials and equipment to small tools and consumables, concrete, rebar, formwork materials, asphalt, fencing, and local purchases in support of the field staff.

PPHP construction is expected to create an average of 367 and peak of 767 direct jobs. These direct jobs will create both indirect and induced secondary employment in the region. Indirect employment is defined as employment that will be generated by the purchase of goods and services required by the Project. Induced employment is defined as employment that will be generated by the purchase of goods and services by the businesses that are indirectly supported by the Project.

An Input-output model (IMPLAN ProfessionalTM) was used to estimate economic impacts within Los Angeles, San Bernardino, and Kern Counties based on Project construction-phase expenditures that would benefit the local economies. For the purpose of the input-output model, the following Project expenditures (rounded values) were assumed to be the project expenditures which would benefit the local economies: 1) Total Payroll (\$105,730,000) and 3) Local Expenditures (\$58,800,000). The total construction estimate (\$273,204,000) was determined based on using an employee compensation percentage for construction operations and was used as an input into the model to predict economic impacts.

Based on the assumptions stated above (during the 27-month construction phase), the estimated annual beneficial economic output impacts within Los Angeles, San Bernardino, and Kern Counties would be as follows (rounded values):

Direct expenditures	=	\$ 273,000,000
Indirect regional revenues	=	\$ 142,000,000
Induced regional revenues	=	\$ 134,000,000
Total impact	=	\$ 550,000,000

The top ten economic sectors that would benefit the most in terms of economic output impacts include: 1) other new construction; 2) architectural and engineering services; 3) petroleum refining; 4) wholesale trade; 5) owner occupied dwellings; 6) real estate; 7) insurance carriers; 8) offices of physicians – dentists and other health; 9) food and drinking places; and 10) hospitals.

Also, using the assumptions stated above, during the construction phase, the Project's estimated annual job creation within Los Angeles, Kern, and San Bernardino Counties would be as follows:

Direct (Project) jobs	=	367 workers
Indirect jobs	=	937 workers
Induced jobs	=	1,018 workers
Total jobs creation	=	2,322 workers

These additional jobs would result from the PHPP's local construction expenditures as well as from spending by local construction workers. These indirect and induced jobs are expected to be filled both locally and regionally, and would result in positive economic impacts.

Public Services

No significant impacts are expected on local public services during construction. Current police, fire, and medical facilities should be sufficient to handle emergencies at the site. A security fence would be erected around the entire perimeter of the construction site; no significant adverse impacts would be expected on the Los Angeles County Sheriff's Department or the Los Angeles County Fire Department. Fire extinguishers will be available on site during "hot work," and personnel will be trained in their proper use; no significant impacts would be expected on local fire fighting agencies. Communication equipment will be available on site at all times to contact outside agencies if emergencies arise. No significant impacts are expected on local public social and medical services; construction workers would be expected to obtain health insurance from their employers.

Utilities

There would be very minor demands on utility services during construction as a result of onsite activities. PHPP construction would require utility services (electricity, water, sanitary wastewater and solid waste disposal. Sanitary wastes generated during construction would be collected in portable, self-contained toilets and hauled to an appropriate disposal site, and bottled water would be used for drinking. No significant impacts would be expected.

Schools

The overwhelming proportion of the Project construction workforce would be expected to commute to the site daily. Further, construction workers who relocate temporarily for a work assignment typically do not bring their families with them. Negligible impacts on school capacity would occur.

Fiscal Resources

Local expenditures on construction materials, supplies, and equipment are estimated to total approximately \$58.8 million, which, at the Los Angeles County sales tax rate of 8.25 percent, would generate approximately \$4.9 million annually in sales tax revenue. The 8.25 percent Los Angeles County sales tax rate is divided into 7.25 percent for the State and 1.00 percent to the Los Angeles County Transportation Commission. Based on local construction expenditures of \$59 million, the sales tax generated for the State is estimated at approximately \$4.3 million and the Los Angeles County Transportation Commission sales tax revenues are estimated at approximately \$600,000. Fiscal impacts associated with operation of the Project are considered beneficial.

5.11.3.3 Operation

The following subsections describe the potential impacts of PHPP operations on socioeconomic conditions and resources.

Project Work Force and Population

The Project is expected to employ a total of 36 workers during operation. Some of the Project operations jobs may involve relocation to the area for workers with specialized technical or managerial skills. Given the moderate size of the Project work force and the likelihood that some of these workers already would be residents of the local area, Project population impacts would be less than significant.

Housing

Operation of the Project is expected to have an insignificant impact on housing because of the small number of workers needed for operation of the plant and the availability of local housing (e.g., current vacancy rates of 3.7 percent in Palmdale). Because there are no residential areas in the immediate vicinity of the PHPP plant site and Project-related population increase will be minimal, no substantial change is expected in community interaction patterns, social organization, social structures, or social institutions.

Employment

As stated above, 36 full-time employees would be needed to operate and maintain the PHPP facility, including operations and power block routine maintenance staff; solar field project and maintenance staff; clerical and technical staff; and administrative and management staff. Most of the 36 employees will be hired locally with some specialized employees coming from outside the local area.

An Input-output model (IMPLAN Professional™) was used to estimate economic impacts within Los Angeles, Kern, and San Bernardino Counties based upon operation-phase Project expenditures which would benefit the local economies. For the purpose of the input-output model, the annual expenditures

that would benefit local economies were assumed to be \$3.7 million annually; and this figure was used as an input into the model to predict employment and economic impacts.

Based upon the Implan model results, the Project's estimated annual job creation during the operation phase) is estimated as follows:

Direct jobs (Project) = 36 workers

Indirect jobs = 64 workers

Induced jobs = 59 workers

Total jobs creation = 159 workers

Public Services

Project operation would slightly increase demands on local police, fire, medical, and other emergency services. Population immigration is expected to be minimal and one additional industrial facility (the PHPP) with a small workforce would not be expected to have a significant adverse impact on the capacity of most local public services.

Utilities

The Project will use reclaimed water supplied by the City of Palmdale Water Reclamation Plant (PWRP) for cooling tower makeup and other industrial uses. Potable water for personnel uses such as drinking water, sanitary uses, safety showers, etc. will be obtained from Los Angeles County Waterworks District No. 40. The Project will be fueled with natural gas delivered via a new natural gas pipeline and will generate its own electrical power for onsite consumption. Utilities impacts would be less than significant.

Schools

Operation of the Project is expected to have an insignificant local and regional impact on schools because of the relatively small number of workers needed for operation of the plant (maximum of 36 employees).

The PHPP would be required to pay a school impact fee to the Antelope Valley Union High School District and the Lancaster Elementary School District. According to local school district personnel, the school impact fee for industrial projects in the Antelope Valley Union High School District is \$0.11/square foot of new industrial floor space and \$0.34/square foot for the Lancaster Elementary School District (Thompson, 2008). Based on a total square footage of 28,800 square feet, the Project would be required to pay total school impact fees of approximately \$13,000.

Fiscal Resources

At present, there is no property tax on solar components (mirrors, solar boiler, heat exchangers) improvements by law (Section 73 of the California Taxation and Revenue Code). Components included under the exemption include storage devise, power conditioning equipment, transfer equipment, and parts. The capital costs for the combined-cycle portion of the PHPP are estimated at \$615 million to \$715 million (2011 dollars). Assuming that the solar component exemption continues and assuming a Los

Angeles County tax rate of 1.115433 percent, annual property tax revenues are estimated at approximately \$685,000 to \$797,000. Fiscal impacts associated with operation of the Project are considered beneficial.

The plant is expected to begin operation in the third quarter of 2013. During operation, it is expected that local purchases for materials, supplies, equipment, and services would total approximately \$3.7 million annually. Applying the Los Angeles County sales tax rate of 8.25 percent, approximately \$310,000 would be generated annually in local sales tax as a direct result of the Project, or approximately \$9.3 million for the nominal 30-year operating life of the Project. The 7.25 percent Los Angeles County sales tax rate is divided into 7.25 percent for the State and 1.00 percent to the Los Angeles County Transportation Commission. Based on annual non-labor expenditures of \$3.7 million, the sales tax generated annually is estimated at approximately \$270,000 for the State and \$37,000 for the Los Angeles County Transportation Commission.

5.11.3.4 Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low income Populations" was signed by then-President Bill Clinton on February 11, 1994. The purpose of this Executive Order is to identify and address whether high and adverse human health or environmental effects are likely to fall disproportionately on minority and/or low income populations of the community.

According to the guidelines established by the EPA to assist Federal agencies to develop strategies to address this circumstance, a minority and/or low income population exists if the minority and/or low income population percentage of the affected area is 50 percent or more of the area's general population; Council on Environmental Quality (CEQ) guidance additionally suggests determining whether minority and/or low income populations in potentially affected areas are present in proportions meaningfully greater than those of the general population of the area. The thresholds for poverty level for an individual (under 65 years of age) and a family of four (including two related children under 18 years) in 2007 were income levels of \$10,787 and \$21,027, respectively (U.S. Census Bureau, 2008). The CEQ defines the term "minority" as persons from any of the following groups: Black/African American; Asian; Native Hawaiian or Other Pacific Islander; American Indian or Alaska Native; and Hispanic, regardless of race. Additionally, for the purposes of this analysis, "minority" also includes all other nonwhite racial categories such as "some other race" and "two or more races."

The Federal guidelines set forth a three-step screening process: 1) identify which impacts of the Project are high and adverse; 2) determine if minority or low income populations exist within the high and adverse impact zones; and 3) examine the spatial distribution of high and adverse impact areas to determine if these impacts are likely to fall disproportionately on the minority and/or low income population.

To assess the potential for disproportionate environmental impacts on minority or low income populations as a result of the Project, population, poverty, and minority data within a six-mile radius of the Project site were gathered using database and mapping software provided by the U.S. Census Bureau. The Project site is located entirely within census block group 9101.00.1. There are 51 census tracts and 120 census block groups within a six-mile radius of the PHPP plant site.

As shown in Table 5.11-17, as of 2000 approximately half of the residents of Los Angeles County were considered to be part of a minority population (50.3 percent). Figure 5.11-2 illustrates the proportion of the minority population in each block group in the area around the PHPP plant site. The proportion of minority populations in census block groups located within the six-mile radius averaged 48.99 percent, which is lower than the minority population percentage of Los Angeles County as a whole (51.3 percent). Census block group 9101.00.1, which contains the PHPP plant site, had a substantially higher minority population (75.79 percent) than the surrounding area and the county as a whole, but this statistic is misleading in that the block group includes Air Force Plant 42, which is adjacent to the PHPP site and has no residential population.

Table 5.11-17 shows the proportion of people with income considered below the poverty level (low income population) in the census blocks near the plant site. Figure 5.11-3 illustrates the proportion of the population below the poverty level for each block group within a six-mile radius of the PHPP site. The proportion of low income population in the study area ranged from 0 to 53.7 percent. As shown in Table 5.11-17, the poverty-level population within the block group that contains the plant site is somewhat higher (21.1 percent) than the Los Angeles County average (17.91 percent) and is in the middle of the range of poverty populations (12.0 to 30.8 percent) for the block groups in the immediate area.

Table 5.11-17 Environmental Justice Characteristics

Geographic Area (Census Tract)	Census Block Group	Total Minority Population (Percent)	Total Poverty Level Population (Percent)
<i>9101.00</i>	<i>9101.00.1</i>	<i>75.79</i>	<i>21.10</i>
9005.01	9005.01.1	47.77	20.60
	9005.01.2	55.03	
9005.04	9005.04.1	50.72	12.00
	9005.04.2	47.06	
9007.04	9007.04.1	56.67	30.80
9102.01	9102.01.1	28.80	19.20
County of Los Angeles		51.30	17.91

Source: U.S. Bureau of the Census, 2000. Note: Italicized block group contains the PHPP plant site.

The primary environmental justice issues for power plant siting and development would be related to potential air emissions, noise levels, and water use that could adversely affect the health or environmental quality of the local community. These issues are discussed in detail in other sections of this AFC. Within the context of environmental justice, impacts are determined by evaluating whether the Project will have a disproportionate high and adverse impact on low-income and minority populations.

The proposed Project is not expected to have disproportionate significant adverse impacts on low-income or minority populations, based on a number of factors. The PHPP plant site is in an industrial area with very limited residential populations regardless of ethnicity or income level. The Project is not expected to have significant impacts on air quality, public health, noise, or water use. The Project's linear

facilities also would have no disproportionate adverse impacts on minority or low-income populations. The Project's various pipelines would be buried and would not traverse residential areas; the transmission line route also is in largely non-residential areas (Segment 1) and/or within an existing transmission line ROW (e.g., all of Segment 2 which extends from the Pearblossom Substation to the Vincent Substation).

5.11.3.5 Cumulative Impacts

The potential for cumulative socioeconomic impacts exists where there are multiple projects proposed in an area which have overlapping construction schedules and/or project operations that could impact similar resources. Projects with overlapping construction schedules and/or operations collectively could result in a demand for labor that cannot be met by the Project area labor pool, which could lead to an influx of nonlocal workers and their dependents. This population increase could impact socioeconomic resources. Because of the large regional construction work force, no significant cumulative socioeconomic impacts associated with construction activities (e.g., population increases that affect housing availability) would be expected when considering the PHPP together with the cumulative projects identified in Section 5.1.

The Project would have minimal socioeconomic impacts during operation, and thus would not contribute considerably to significant cumulative impacts. It also should be noted that Project employment and local expenditures for equipment and materials would benefit the local economy. The Project's contribution to an adequate supply of electrical energy also would be beneficial to the economy.

5.11.4 Mitigation Measures

No significant adverse socioeconomic impacts have been identified and thus, no mitigation measures are required.

5.11.5 References

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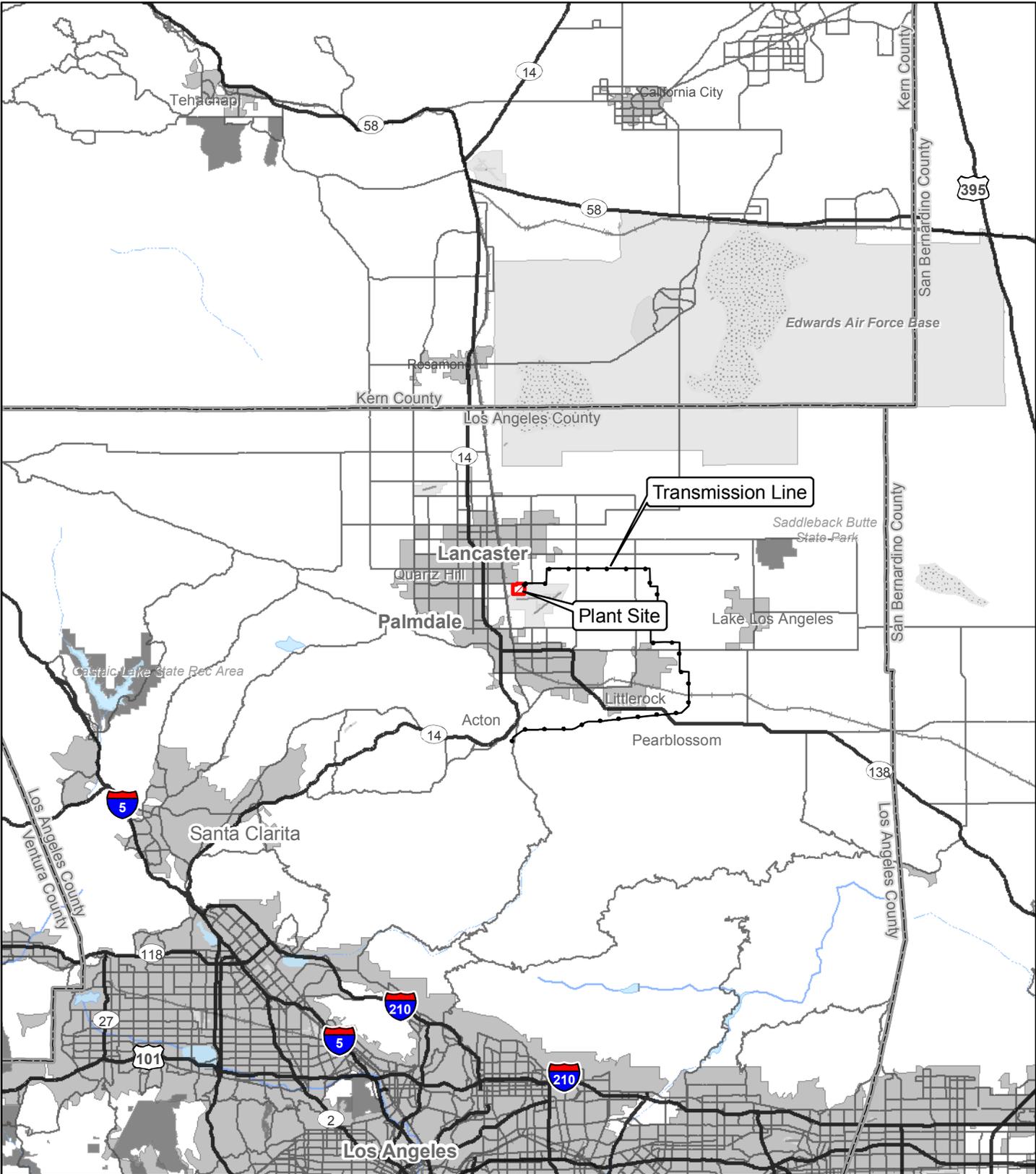
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Palmdale Hybrid Power Project

Figure 5.11-1 Regional Socioeconomic Setting

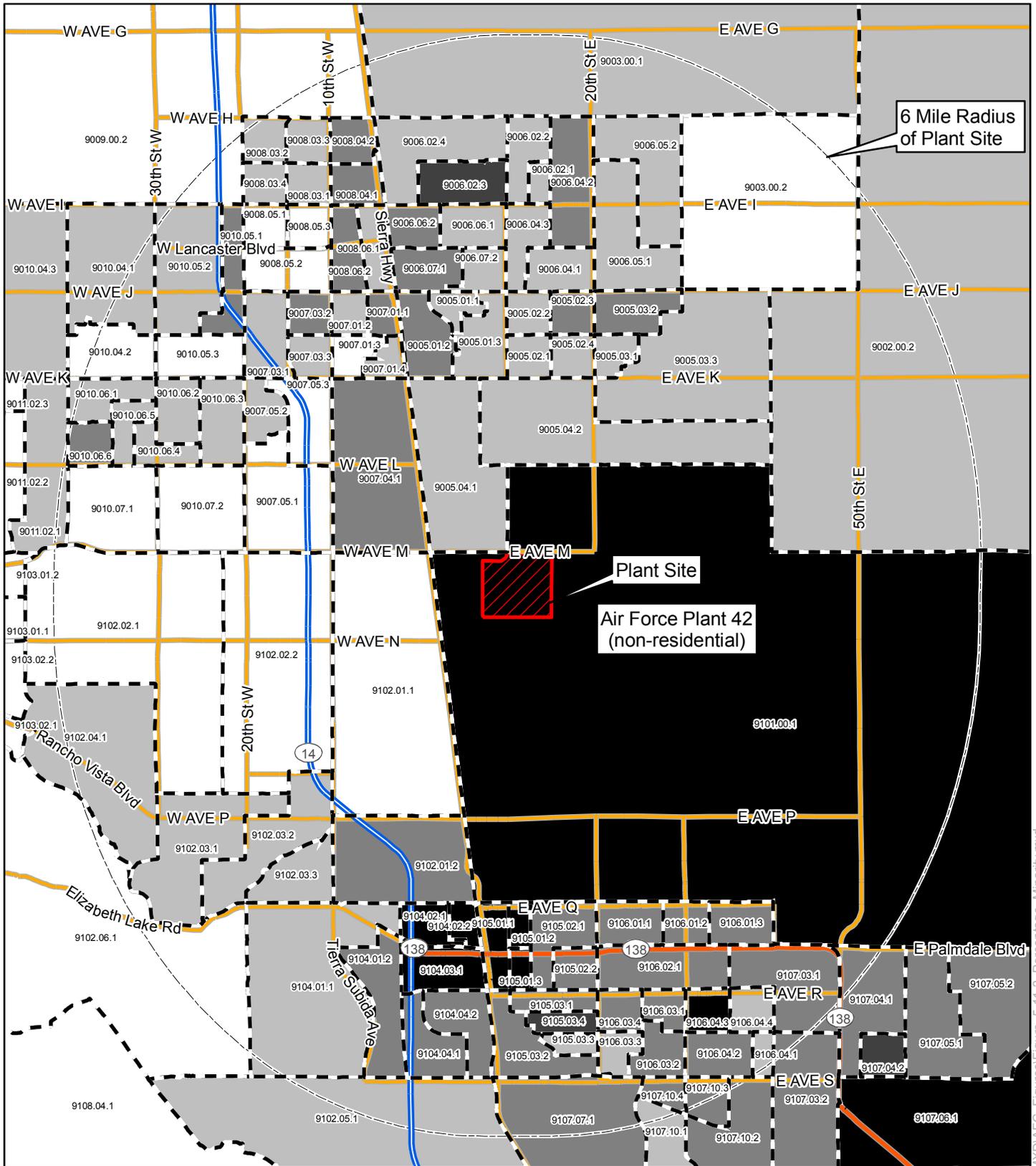
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Inland Energy, Inc.

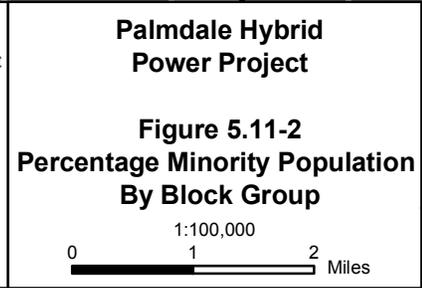
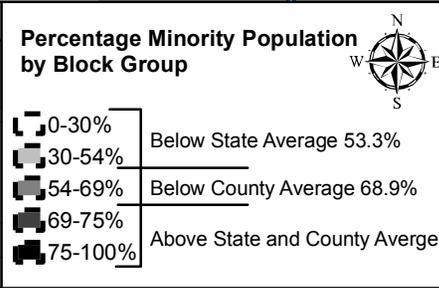
ENSR | AECOM

Project: 10855-002
Date: June 2008



6 Mile Radius of Plant Site

Plant Site
Air Force Plant 42 (non-residential)

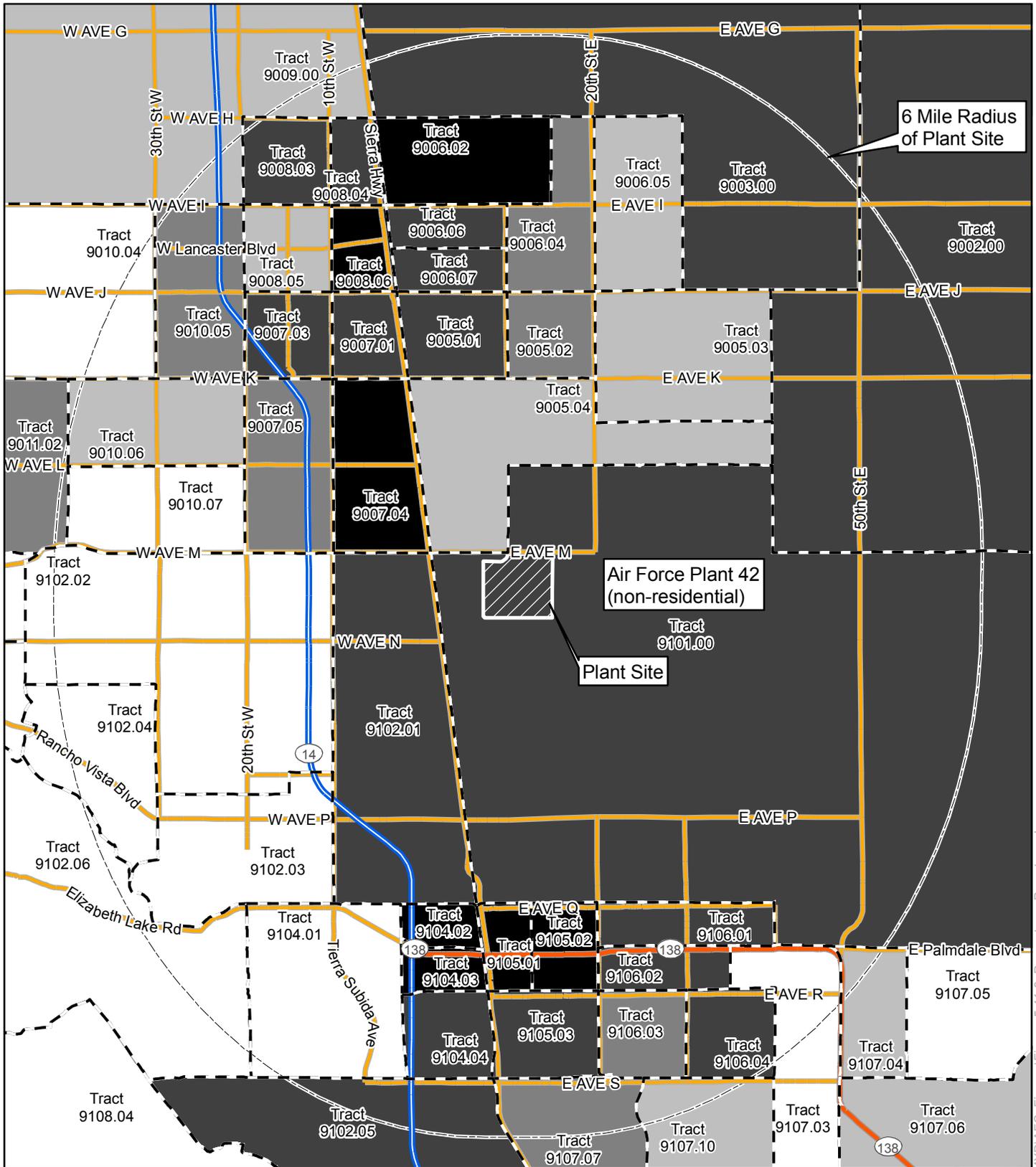


Palmdale
a place to call home

Inland Energy, Inc.

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Project: 10855-002
Date: July 2008



6 Mile Radius of Plant Site

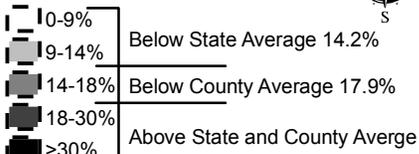
Air Force Plant 42 (non-residential)

Plant Site

Map Location



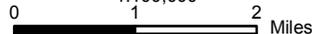
Percentage of Population Below the Poverty Level by Tract



Palmdale Hybrid Power Project

**Figure 5.11-3
Percentage of Population Below the Poverty Level By Tract**

1:100,000



Project: 10855-002
Date: July 2008