

Table of Contents

5.11	Socioeconomics	1
5.11.1	LORS Compliance	1
5.11.1.1	Federal LORS	2
	Executive Order 12898	2
5.11.1.1	State LORS	2
	California Government Code Sections 67995-65997	2
	Title 14, CCR, Section 15131	2
5.11.1.1	Local LORS	2
	San Bernardino County General Plan.....	2
5.11.1.2	Involved Agencies and Local Contacts.....	3
5.11.1.3	Required Permits and Permitting Schedule	3
5.11.2	Affected Environment.....	3
5.11.2.1	Study Area	3
5.11.2.2	Population.....	4
5.11.2.3	Housing	7
	Permanent Housing	7
	Temporary Housing	8
5.11.2.4	Economy and Employment	9
5.11.2.5	Project-Related Employment.....	12
	Existing Unemployment Rates	12
	Projected Unemployment Rates.....	17
5.11.2.6	Public Services and Utilities	17
	Law Enforcement.....	17
	Fire Protection	17
	Hospitals.....	18
	Natural Gas and Electricity	19
	Water and Wastewater	19
	Solid Waste	19
	Schools.....	20
5.11.2.7	Fiscal Resources.....	21
5.11.3	Environmental Impacts	22
5.11.3.1	Evaluation Methods and Significance Criteria.....	23

5.11.3.2 Construction	23
Project Work Force and Population	23
Population	27
Housing.....	27
Employment and Economy.....	27
Public Services	29
Utilities	29
Schools.....	29
Fiscal Resources	29
5.11.3.3 Operation.....	30
Project Work Force Population	30
Housing.....	30
Employment	30
Public Services	31
Utilities	31
Schools.....	31
Fiscal Resources	31
5.11.3.4 Environmental Justice	32
5.11.3.5 Cumulative Impacts.....	34
5.11.4 Mitigation Measures.....	35
5.11.5 References	35

List of Tables

Table 5.11-1. LORS Applicable to Socioeconomics.....	1
Table 5.11-2. Agencies and Agency Contacts.....	3
Table 5.11-3. Population Estimates, Projections, and Average Annual Growth Rates	5
Table 5.11-4. Study Area Communities Population Growth	6
Table 5.11-5. Study Area Housing Characteristics, 2008.....	7
Table 5.11-6. Employment by Industry Group – San Bernardino, Los Angeles, and Kern Counties, 2007	10
Table 5.11-7. Employment Growth by Occupation (Most Job Openings) - San Bernardino, Los Angeles, and Kern Counties, 2006-2016	11

Table 5.11-8. Skilled Workers by Craft Required by Project - San Bernardino County	13
Table 5.11-9. Skilled Workers by Craft Required by Project - Los Angeles County.	14
Table 5.11-10. Skilled Workers by Craft Required by Project - Kern County.....	15
Table 5.11-11. Employment Data in the Study Area (April 2009).....	16
Table 5.11-12. Hospitals Serving the Project Area	18
Table 5.11-13. Summary of Schools and Enrollment in Barstow Unified School District.....	20
Table 5.11-14. Summary of Schools and Enrollment in Muroc School District.....	21
Table 5.11-15. San Bernardino County Expenses and Revenues for FY 2006-2007	22
Table 5.11-16. Mojave Solar Project Construction Workforce by Skill	24
Table 5.11-17. Available Workers by County	26
Table 5.11-18. Environmental Justice Characteristics	33

List of Figures

Figure 5.11-1. Affected Area Defined by 2-Hour Drive Time	36
Figure 5.11-2. Proportion Below Poverty Level by Census Block group	37
Figure 5.11-3. Percent Minority by Census Block group	38

5.11 Socioeconomics

This section describes the socioeconomic setting of the area potentially affected by the proposed Mojave Solar Project (Project) and discusses the potential socioeconomic impacts that would be caused by the construction and operation of the proposed Project. This section also describes the economic and demographic characteristics of the area, including population, employment and economy, housing, public services and utilities, schools, and local government and finance.

Provided below are laws, ordinances, regulations, and standards (LORS) and agency contacts applicable to socioeconomic factors and proposed mitigation measures for the proposed Project.

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 5.11.2
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.	Sections 5.11.2 and 5.11.3
Local		

LORS	Applicability	Where Addressed in AFC
San Bernardino County General Plan (Administration, Land Use Elements).	Establishes goals and implementing policies to accommodate anticipated future growth while maintaining a safe and healthful environment and prosperous economy.	Sections 5.11.2 and 5.11.3

5.11.1.1 Federal LORS

Executive Order 12898

This Executive Order requires Federal agencies and State agencies requiring Federal activity 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 Project will require a Federal agency approval (under the Endangered Species Act), the Executive Order applies to the proposed Project.

5.11.1.1 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 agency implementing school impact fees is the Barstow Unified 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.

5.11.1.1 Local LORS

San Bernardino County General Plan

Although the proposed Project does not require socioeconomic-related permits, the draft San Bernardino County General Plan contains goals related to maintaining and improving the socioeconomic aspects of the County. One goal of the Circulation and Infrastructure Element is to ensure that San Bernardino County residents and businesses receive adequate and cost-effective public services. An additional goal is to ensure timely development of

public facilities and the maintenance of adequate service levels for these facilities to meet the needs of current and future County residents. Policies set in place to help achieve these goals state that new development should pay a fair share of the costs to provide infrastructure facilities required to serve such development and that such public facilities are equitably distributed throughout the County (San Bernardino GP 2009).

5.11.1.2 Involved Agencies and Local Contacts

Table 5.11-2 lists Federal and local agency contacts for the Project.

Table 5.11-2. Agencies and Agency Contacts

Agency Contact	Phone/Email	Permit/Issue
Karen Henry U.S. Environmental Protection Agency, Region IX 75 Hawthorne Street San Francisco, CA 94105	(415) 972-3844 henry.karen@epa.gov	Executive Order 12898 (Environmental Justice)
Julie Rynerson Rock, Director San Bernardino Land Use Services Department 385 N. Arrowhead Avenue San Bernardino, CA 92415	(909) 387-8311	San Bernardino County General Plan

5.11.1.3 Required Permits and Permitting Schedule

There are no required permits related to socioeconomics.

5.11.2 Affected Environment

5.11.2.1 Study Area

This section discusses the affected socioeconomic resources for the Project. The Project footprint comprises a contiguous area consisting of approximately 1,530 acres southwest of Harper Dry Lake. The area north of the Project site is primarily undeveloped open space. An existing 160-megawatt (MW) Harper Lake Solar Electric Generating System facility is located northwest of the Project site. The Harper Dry Lake Ecological Preserve, managed by the U.S. Bureau of Land Management (BLM) and encompassing the dry lake bed and its periphery, is located northeast of the Project site. The areas south and west of the Project site are designated as BLM open space.

The Project site is located approximately 10 miles west of the City of Barstow in San Bernardino County, California. For the purposes of the socioeconomic analysis, the study area is defined as those counties and major cities within a 2-hour drive from the Project site

on mapped roads (Federal, State, City and County).¹ This includes portions of the counties of San Bernardino, Kern, and Los Angeles. To simplify the analysis by focusing on the most likely communities of residences for commuters, those cities and communities within 30 minute drive times are specifically included in the analysis, as are all cities and communities with populations over 20,000 individuals within San Bernardino County, and all cities with populations over 40,000 individuals in Los Angeles and Kern counties within a 2-hour drive time.

Figure 5.11-1 depicts the counties defined as the study area, most of the cities relevant to this analysis, and the approximate drive times from the Project site. Communities in proximity to the proposed Project include Barstow and Lockhart. Other communities considered to be part of the study area (due to population size and/or proximity to the project site) include Apple Valley, Hesperia, Victorville, Yucaipa, Highland, Colton, Redlands, Rialto, Fontana, San Bernardino, Lancaster, Palmdale, Pasadena, Santa Clarita, Glendale, Los Angeles, and Bakersfield.

5.11.2.2 Population

The Project is located in San Bernardino County, near the boundaries of Los Angeles and Kern counties. Due to this location, socioeconomic impacts would potentially occur in all three counties. Population estimates and future population projections for the local and regional areas are summarized in Table 5.11-3.

¹ A two-hour commute-shed is considered to be a generous "easy commuting distance" for construction workers and operations employees.

Table 5.11-3. Population Estimates, Projections, and Average Annual Growth Rates

COUNTY	2000	2008	Average Annual Growth (2000-2008)	2010	Average Annual Growth (2008-2010)	2020	Average Annual Growth (2010-2020)	2030	Average Annual Growth (2020-2030)
San Bernardino	1,721,942	2,055,766	2.2%	2,177,596	2.9%	2,582,777	1.6%	2,957,744	1.3%
Los Angeles	9,578,960	10,363,850	1.0%	10,514,663	0.7%	11,214,237	0.7%	11,920,289	0.6%
Kern	665,519	817,517	2.6%	871,728	3.3%	1,086,113	2.5%	1,352,627	3.4%
<i>Study Area Counties¹</i>	11,966,421	13,237,133	1.3%	13,563,987	1.2%	14,883,127	0.9%	16,230,660	0.9%
<i>California</i>	34,105,437	38,049,462	1.4%	39,135,676	1.4%	44,135,923	1.2%	49,240,891	1.1%

¹Sum of all counties.

Source: California DOF, 2009.

- San Bernardino County is the fifth most populous county in California. The population of San Bernardino County grew from 1,721,942 in 2000 to 2,055,766 in 2008, a 20 percent increase, according to the California Department of Finance (DOF). Population growth is expected to be 2.9 percent per year between 2008 and 2010, and then 1.6 percent per year between 2010 and 2020, and 1.3 percent per year between 2020 and 2030.
- Los Angeles County is the most populous county in California. The population of Los Angeles County grew from 9,578,960 in 2000 to 10,363,850 in 2008, an 8.2 percent increase. Annual population growth is expected to be 0.7 percent between 2008 and 2030 (DOF 2009).
- Kern County is the 13th most populous county in California, covering approximately 8,160 square miles. The population of Kern County grew from 665,519 in 2000 to 817,517 in 2008 – a 22.8 percent increase. Annual population growth is expected to be 3.3 percent between 2008 and 2010, and then taper to 2.5 percent between 2010 and 2020. Kern County is projected to grow more rapidly in the future with annual growth of 3.4 percent between 2020 and 2030.

As shown in Table 5.11-3, between 2000 and 2008, the population of the three-county study area grew at almost the same rate as California. For the years 2008 to 2030, projected population growth for the study area counties is expected to be comparable to the State.

Table 5.11-4 shows the populations of the affected communities in 2000 and 2008, along with growth rates. The cities in San Bernardino County that experienced substantial population growth between 2000 and 2008 are Victorville (6.7 percent), Fontana (4.9 percent), Hesperia (4.3 percent), Apple Valley (3.3 percent) and Yucaipa (3.0 percent). The cities in Los Angeles County that experienced substantial population growth between 2000 and 2008 are Palmdale (3.0 percent), Lancaster (2.6 percent), and Santa Clarita (2.0 percent). Bakersfield is the only city in Kern County captured by the 2-hour driving radius and had 3.6 percent population growth from 2000-2008. Each identified community had an annual growth rate higher than the study area counties as a whole (1.3 percent). When combined, the study area communities exhibited an annual growth rate of 1.6 percent.

Table 5.11-4. Study Area Communities Population Growth

City	2000	2008	Percent Annual Change
<i>San Bernardino County</i>			
Apple Valley	54,239	70,092	3.3%
Barstow	21,119	23,952	1.6%
Colton	47,662	51,918	1.1%
Fontana	128,928	188,498	4.9%
Hesperia	62,590	87,820	4.3%
Highland	44,625	52,503	2.1%
Redlands	63,591	71,807	1.5%

City	2000	2008	Percent Annual Change
Rialto	91,882	99,767	1.0%
San Bernardino	185,382	205,493	1.3%
Victorville	64,029	107,408	6.7%
Yucaipa	41,207	52,063	3.0%
Los Angeles County			
Glendale	194,973	207,157	0.8%
Lancaster	118,718	145,243	2.6%
Los Angeles	3,694,742	4,045,873	1.1%
Palmdale	116,670	147,897	3.0%
Pasadena	133,936	148,126	1.3%
Santa Clarita	151,131	177,045	2.0%
Kern County			
Bakersfield	246,899	328,692	3.6%
Total All Communities	5,462,323	6,211,354	1.6%

Source: California DOF, 2009.

5.11.2.3 Housing

Permanent Housing

Table 5.11-5 presents the housing resources in the three-county study area and nearby study area communities. In 2008, San Bernardino County had 483,766 single-family homes and 129,035 multi-family homes, with a vacancy rate of 11.6 percent. Among the cities in San Bernardino County relevant to the project, Barstow had the highest vacancy rate (17.1 percent), while being the smallest community with only 23,641 households.

Table 5.11-5. Study Area Housing Characteristics, 2008

City	Households	Single Family	Multi-Family	Vacancy
Kern County	817,517	194,896	48,165	9.8%
Bakersfield	324,905	84,417	27,051	5.5%
Los Angeles County	10,363,850	1,643,878	1,459,215	4.2%
Glendale	204,293	29,928	44,774	2.6%
Lancaster	137,332	34,906	10,569	8.4%
Los Angeles	3,959,760	619,158	771,063	4.6%

City	Households	Single Family	Multi-Family	Vacancy
Palmdale	147,803	36,785	6,340	7.6%
Pasadena	144,608	30,157	27,044	4.2%
Santa Clarita	175,652	43,097	13,377	3.2%
San Bernardino County	2,055,766	483,766	129,035	11.6%
Apple Valley	69,729	20,107	3,775	8.4%
Barstow	23,641	5,905	2,970	17.1%
Colton	51,654	10,256	5,180	7.4%
Fontana	187,939	40,975	7,684	5.3%
Hesperia	87,489	24,085	3,146	6.5%
Highland	52,263	13,055	2,727	9.3%
Redlands	69,841	18,154	7,646	4.8%
Rialto	98,963	19,600	5,451	5.3%
San Bernardino	198,562	42,002	20,119	11.0%
Victorville	102,637	28,156	4,929	7.7%
Yucaipa	51,491	13,553	1,636	5.7%
Study Area Counties	<i>13,237,133</i>	<i>2,322,540</i>	<i>1,636,415</i>	<i>5.7%</i>
California	<i>38,049,462</i>	<i>7,713,726</i>	<i>4,171,373</i>	<i>5.9%</i>

Source: California DOF, 2009.

In 2008, Los Angeles County had 1,643,878 single-family homes and 1,459,215 multi-family homes, with a vacancy rate of 4.6 percent. In Los Angeles County, Lancaster had a slightly higher vacancy rate than Palmdale in 2008.

Kern County had 194,896 single family households and 48,165 multi-family households, with a vacancy rate of 9.8 percent.

Temporary Housing

In addition to permanent housing, there is ample transient housing in the three counties that comprise the study area. Based on information from the website Travelocity.com, there are about 1,400 hotel/motel rooms and suites among 19 different establishments in the area surrounding Barstow, with extensive additional temporary housing available in the communities within 2 hours of the proposed Project site. Additional housing opportunities are available in the form of RV and mobile homes sites.

5.11.2.4 Economy and Employment

Employment by industry sector for San Bernardino, Los Angeles, and Kern counties for 2007 is summarized in Table 5.11-6. The largest employer in San Bernardino County is the government, which includes the local, State, and Federal levels. Government jobs account for 119,100 (17.9 percent) of the total jobs in San Bernardino County. Government jobs also account for the largest percentage of jobs in Kern County (21.1 percent). In Los Angeles County, the largest industry is professional and business services, which account for 605,400 of the total jobs (14.7 percent). Additional industries in the area include natural resources, mining, and construction; manufacturing; transportation; trade (wholesale and retail); information; financial activities; and services (e.g., professional, business, educational, health). In San Bernardino County, government, retail trade, and professional and business services are the leading industry groups in terms of employment. In Los Angeles County, professional and business services, government, and other services are the leading industry groups. In Kern County, government, agriculture, and retail trade are the leading industry groups.

The highest number of new jobs projected in San Bernardino County is expected to be in retail sales (Table 5.11-7). Job growth is also anticipated for cashiers, waiters and waitresses, and material movers. In Los Angeles County, jobs in retail sales are also anticipated to be the greatest. Job growth is also anticipated for personal care aides, cashiers, and office clerks. In Kern County, farmworkers and laborers have the highest number of jobs projected, followed by cashiers, retail salespersons, and elementary school teachers.

Table 5.11-6. Employment by Industry Group – San Bernardino, Los Angeles, and Kern Counties, 2007

Industry Group	San Bernardino County		Los Angeles County		Kern County	
	Employment	Percent Total Employment	Employment	Percent Total Employment	Employment	Percent Total Employment
Agriculture	3,100	0.5%	7,500	0.2%	45,600	16.0%
Natural Resources, Mining, and Construction	43,500	6.5%	162,000	3.9%	28,200	9.9%
Manufacturing	64,000	9.6%	449,200	10.9%	13,300	4.7%
Transportation, Warehousing, and Utilities	48,500	7.3%	165,600	4.0%	9,600	3.4%
Wholesale Trade	35,200	5.3%	227,000	5.5%	8,000	2.8%
Retail Trade	87,800	13.2%	426,000	10.3%	28,900	10.2%
Information	7,600	1.1%	209,800	5.1%	2,800	1.0%
Financial Activities	27,000	4.0%	246,000	6.0%	9,100	3.2%
Professional and Business Services	81,500	12.2%	605,400	14.7%	26,100	9.2%
Educational and Health Services	69,600	10.4%	490,500	11.9%	24,500	8.6%
All Other Services	79,800	12.0%	545,000	13.2%	28,200	9.9%
Government	119,100	17.9%	595,700	14.4%	60,000	21.1%
Total	666,700	100.0%	4,129,700	100.0%	284,300	100.0%

Source: California EDD, 2009.

Table 5.11-7. Employment Growth by Occupation (Most Job Openings) - San Bernardino, Los Angeles, and Kern Counties, 2006-2016

San Bernardino		Los Angeles		Kern	
Occupation	Number of New Jobs Projected	Occupation	Number of New Jobs Projected	Occupation	Number of New Jobs Projected
Retail Salespersons	24,360	Retail Salespersons	63,140	Farmworkers and Laborers	14,270
Cashiers	20,170	Personal and Home Care Aides	51,810	Cashiers	3,820
Waiters and Waitresses	15,340	Cashiers	48,060	Retail Salespersons	3,760
Laborers and Freight, Stock, and Material Movers	13,460	Office Clerks	35,820	Elementary School Teachers (Except Special Education)	2,160
Combined Food Preparation and Serving Workers (Including Fast Food)	12,880	Waiters and Waitresses	34,590	Laborers and Freight, Stock, and Material Movers	2,140
Elementary School Teachers (Except Special Education)	11,450	Laborers and Freight, Stock, and Material Movers	32,440	Waiters and Waitresses	2,040
Office Clerks	11,190	Customer Service Representatives	29,880	Combined Food Preparation and Serving Workers (Including Fast Food)	1,950
Personal and Home Care Aides	9,710	Registered Nurses	24,810	Truck Drivers	1,940
Customer Service Representatives	8,890	Elementary School Teachers (Except Special Education)	22,810	Office Clerks	1,730
Registered Nurses	8,380	Combined Food Preparation and Serving Workers (Including Fast Food)	21,070	Correctional Officers and Jailers	1,690

Source: California EDD, 2009.

5.11.2.5 Project-Related Employment

Tables 5.11-8 through 5.11-10 present San Bernardino County, Los Angeles County, and Kern County employment figures for those types of skilled workers (by craft) required for construction and operation of the Project. Existing employment figures for 2006 are provided, as well as employment projections for the selected occupations for 2016. As of 2006, there were relatively high numbers of generalized workers in San Bernardino County, including construction workers (116,810), carpenters (28,850), and construction laborers (27,930). Los Angeles County also has a relatively large number of construction workers (143,280), as well as metal workers (54,990). Kern County had 19,190 construction workers in 2006. Specialized positions were generally fewer in number for all counties in the study area, including paving, surfacing, and tamping equipment operators; power plant operators; and construction trade helpers. Employment figures for all occupations presented are anticipated to either remain constant or grow by 2016, with the exception of metal/plastic workers and machinists in Los Angeles County, which are anticipated to shrink by 5 percent and 0.2 percent, respectively, by 2016. The largest growth by occupation in San Bernardino is anticipated to be power plant operators (19.4 percent) and architects, surveyors, and cartographers (17.6 percent). In Los Angeles County, the occupations with the largest amount of anticipated growth are construction managers (13.1 percent) and power plant operators (12.5 percent). For Kern County, the two occupations with the largest amount of anticipated growth include welders, cutters, solderers, and brazers (28.8 percent) and architects, surveyors, and cartographers (25.0 percent).

Existing Unemployment Rates

As of April 2009, San Bernardino County had a labor force of 882,200 workers, of which 773,000 were employed. Los Angeles and Kern counties had labor forces of 4,978,100 and 371,900 workers, respectively. In Los Angeles County, 4,443,700 workers were employed. In Kern County, 316,900 workers were employed. The unemployment rate for any county in the study area is highest in Kern County (14.8 percent), followed by San Bernardino (12.4 percent), and Los Angeles County (10.7 percent). In San Bernardino County, the community with the highest unemployment rate is the City of San Bernardino (16.6 percent). The labor force of the study area counties and communities is presented in Table 5.11-11.

Table 5.11-8. Skilled Workers by Craft Required by Project - San Bernardino County

Occupational Title	Annual Average Employment		Employment Change		Average Annual Job Openings		
	2006	2016	Number	Percent	New Jobs	Net Replacements	Total
Construction Managers	4,380	5,110	730	16.7	73	68	141
Construction Workers	116,810	132,160	15,350	13.1	1,535	1,815	3,350
Carpenters	28,850	32,390	3,540	12.3	354	390	744
Cement Masons and Concrete Finishers	4,110	4,690	580	14.1	58	119	177
Construction Laborers	27,930	32,080	4,150	14.9	415	210	625
Paving, Surfacing, and Tamping Equipment Operators	630	720	90	14.3	9	13	22
Operating Engineers and Other Construction Equipment Operators	4,790	5,460	670	14.0	67	93	160
Drywall and Ceiling Tile Installers	7,570	8,310	740	9.8	74	104	178
Electricians	6,740	7,600	860	12.8	86	174	260
Painters, Construction and Maintenance	7,950	9,210	1,260	15.8	126	141	267
Plumbers, Pipefitters, and Steamfitters	4,630	5,330	700	15.1	70	96	166
Metal Workers and Plastic Workers	19,460	20,800	1,340	6.9	134	378	512
Helpers - Construction Trades	120	130	10	8.3	1	3	4
Maintenance and Repair Workers, General	11,920	13,690	1,770	14.8	177	29	206
Welders, Cutters, Solderers, and Brazers	3,960	4,640	680	17.2	68	84	152
Plant and System Operators	2,030	2,380	350	17.2	35	46	81
Power Plant Operators	310	370	60	19.4	6	11	17
Architects, Surveyors, and Cartographers	1,420	1,670	250	17.6	25	35	60
Engineering Managers	1,370	1,600	230	16.8	23	28	51
Supervisors, Construction and Extraction Workers	10,990	12,380	1,390	12.6	139	153	292
Machinists	2,630	2,960	330	12.5	33	41	74

Source: California EDD, 2009

Table 5.11-9. Skilled Workers by Craft Required by Project - Los Angeles County

Occupational Title	Annual Average Employment		Employment Change		Average Annual Job Openings		
	2006	2016	Number	Percent	New Jobs	Net Replacements	Total
Construction Managers	10,320	11,670	1,350	13.1	135	160	295
Construction Workers	143,280	153,890	10,610	7.4	1,061	2,347	3,408
Carpenters	28,070	30,050	1,980	7.1	198	380	578
Cement Masons and Concrete Finishers	4,150	4,530	380	9.2	38	120	158
Construction Laborers	31,330	34,810	3,480	11.1	348	236	584
Paving, Surfacing, and Tamping Equipment Operators	790	870	80	10.1	8	16	24
Operating Engineers and Other Construction Equipment Operators	4,410	4,780	370	8.4	37	85	122
Drywall and Ceiling Tile Installers	8,600	8,850	250	2.9	25	118	143
Electricians	13,040	13,700	660	5.1	66	336	402
Painters, Construction and Maintenance	13,240	14,250	1,010	7.6	101	235	336
Plumbers, Pipefitters, and Steamfitters	12,090	12,900	810	6.7	81	249	330
Metal Workers and Plastic Workers	54,990	52,230	-2,760	-5.0	0	1,024	1,024
Helpers - Construction Trades	6,670	7,020	350	5.2	35	169	204
Maintenance and Repair Workers, General	30,520	32,930	2,410	7.9	241	75	316
Welders, Cutters, Solderers, and Brazers	8,410	8,890	480	5.7	48	178	226
Plant and System Operators	4,620	4,980	360	7.8	36	104	140
Power Plant Operators	320	360	40	12.5	4	11	15
Architects, Surveyors, and Cartographers	6,470	7,030	560	8.7	56	135	191
Engineering Managers	8,410	8,840	430	5.1	43	170	213
Supervisors, Construction and Extraction Workers	15,490	16,440	950	6.1	95	216	311
Machinists	10,400	10,380	-20	-0.2	0	161	161

Source: California EDD, 2009

Table 5.11-10. Skilled Workers by Craft Required by Project - Kern County

Occupational Title	Annual Average Employment		Employment Change		Average Annual Job Openings		
	2006	2016	Number	Percent	New Jobs	Net Replacements	Total
Construction Managers	1,050	1,250	200	19.0	20	16	36
Construction Workers	19,190	21,310	2,120	11.0	212	321	533
Carpenters	2,740	3,060	320	11.7	32	37	69
Cement Masons and Concrete Finishers	990	1,100	110	11.1	11	29	40
Construction Laborers	4,860	5,570	710	14.6	71	37	108
Paving, Surfacing, and Tamping Equipment Operators	100	110	10	10.0	1	2	3
Operating Engineers and Other Construction Equipment Operators	1,500	1,570	70	4.7	7	29	36
Drywall and Ceiling Tile Installers	920	980	60	6.5	6	13	19
Electricians	2,350	2,580	230	9.8	23	61	84
Painters, Construction and Maintenance	990	1,120	130	13.1	13	18	31
Plumbers, Pipefitters, and Steamfitters	1,340	1,530	190	14.2	19	28	47
Metal Workers and Plastic Workers	2,200	2,620	420	19.1	42	44	86
Helpers - Construction Trades	870	960	90	10.3	9	22	31
Maintenance and Repair Workers, General	2,630	3,100	470	17.9	47	7	54
Welders, Cutters, Solderers, and Brazers	1,110	1,430	320	28.8	32	24	56
Plant and System Operators	1,460	1,600	140	9.6	14	39	53
Power Plant Operators	190	220	30	15.8	3	7	10
Architects, Surveyors, and Cartographers	400	500	100	25.0	10	10	20
Engineering Managers	380	460	80	21.1	8	8	16
Supervisors, Construction and Extraction Workers	2,460	2,820	360	14.6	36	34	70
Machinists	410	480	70	17.1	7	6	13

Source: California EDD, 2009

Table 5.11-11. Employment Data in the Study Area (April 2009)

County/City	Civilian Labor Force	Total Employment	Number Unemployed	Unemployment Rate	Median Household Income*
San Bernardino County	882,200	773,000	109,200	12.4%	\$54,093
Apple Valley	26,800	23,200	3,600	13.5%	\$48,946
Barstow	10,800	9,200	1,700	15.3%	\$39,564
Colton	25,600	22,200	3,400	13.4%	\$42,665
Fontana	63,900	55,700	8,200	12.9%	\$60,693
Hesperia	31,400	26,400	5,000	15.9%	\$48,244
Highland	23,700	20,000	3,700	15.6%	\$54,153
Redlands	37,700	34,300	3,400	9.1%	\$61,641
Rialto	45,100	38,000	7,100	15.8%	\$49,255
San Bernardino	87,000	72,600	14,400	16.6%	\$38,987
Victorville	30,800	26,200	4,600	14.9%	\$48,462
Yucaipa	22,500	20,200	2,200	10.0%	\$55,693
Los Angeles County	4,978,100	4,443,700	534,400	10.7%	\$52,628
Glendale	106,100	96,100	9,900	9.4%	\$52,443
Lancaster	57,200	48,600	8,600	15.1%	\$46,666
Los Angeles	1,949,100	1,718,000	231,100	11.9%	\$46,292
Palmdale	56,700	49,200	7,600	13.3%	\$55,240
Pasadena	77,300	70,900	6,300	8.2%	\$61,269
Santa Clarita	90,700	84,700	6,000	6.6%	\$80,200
Kern County	371,900	316,900	54,900	14.8%	\$44,620
Bakersfield	155,100	139,000	16,100	10.4%	\$50,918

* 2005-2007 Average

California EDD, 2009; U.S. Census, 2008

Projected Unemployment Rates

While no California state-generated numbers exist for projected unemployment rates in San Bernardino, Los Angeles, and Kern counties, a recent report prepared for the United States Conference of Mayors regarding the role of metropolitan areas in the American Recovery and Reinvestment Act does present near-term unemployment projections for late 2009 (IHS Global Insight, 2009). At the time of publishing (January 2009), IHS Global Insight estimated that the nationwide unemployment rate would rise above 9.0 percent by early 2010. Large numbers of job losses are anticipated for the Los Angeles metro area as volatility continues in the housing market. The San Bernardino area was also specifically identified as an area anticipated to experience high unemployment rates through 2009. For the Riverside-San Bernardino area, the unemployment rate is expected to be near 11.6 percent by the end of 2009, which is among the highest projections for any metropolitan area presented in the analysis.

5.11.2.6 Public Services and Utilities

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

Law Enforcement

The San Bernardino County Sheriff's Department provides police protection and public safety services to the Project site and vicinity. The overall service area encompasses 20,186 square miles and includes four jails. The Sheriff oversees a staff of 3,700 and has an annual budget of over \$440 million. The Sheriff's Department provides contract law enforcement services to 14 of the 24 jurisdictions within its purview. Sheriff's Department services include traffic and neighborhood police control, emergency calls, and crime prevention. The Sheriff's Department operates 10 stations. The nearest station to the site, the Barstow Station located at 225 East Mt. View in Barstow, provides service to the unincorporated communities of Baker, Daggett, Hinkley, Lenwood, Ludlow, Newberry Springs, Sandy Valley, Yermo, Red Mountain, and Trona. A Trona substation and a Baker substation both exist as satellites to the Barstow Station.

Fire Protection

San Bernardino County Fire Department provides the fire protection services in the unincorporated areas of the County and also provides contract fire services to some desert communities, including Victorville. The North Desert Division serves the project area.

The North Desert Division, which serves the project area, serves an area of 10,884 miles and over 150,000 in population. It has a total of 20 fire stations in its service area. It serves the project area and the cities and communities of Adelanto, Baker, El Mirage, Harvard, Hinkley, Hesperia, Lucerne Valley, Mt. View Acres, Oak Hills, Oro Grande, Phelan, Pinon Hills, Red Mountain, Searles Valley, Summit Valley, Trona, Windy Acres, and Wrightwood. The Fire Department provides a full range of services, including municipal and wildland fire protection and prevention services; pre-hospital emergency medical services, including paramedics to communities and unincorporated areas; hazardous materials response; and technical rescue services.

The nearest station is the Hinkley Station 25 at 37284 Flower Street, northwest of Barstow in Hinkley. This station is staffed on an on-call basis with paid-call firefighters who live in the local community. This station responds to the community of Hinkley; provides assistance to the City of Barstow, and responds to the I-15 corridor, north and south of Barstow and the incorporated areas west to the County line near Boron. The next nearest stations are the Harvard Station 46, northeast of Barstow; and the Silver Lakes/Helendale Station 4, off Route 66 between Barstow and Victorville.

The North Desert Station employs 242 staff: 1 Division Chief, 6 Battalion Chiefs, 36 Captains, 24 Engineers, 45 Firefighters, 21 Limited Term Firefighters, and 109 Paid Call Firefighters. In 2008 the North Desert Station had a total of 20,980 incidents: 137 structure fires, 131 brush/vegetation fires, 470 other fires, 49 rescues, 12,225 medical calls, 1,752 traffic collisions, and 6,216 other incidents.

The North Desert Station has a total of 19 ambulances, 25 fire engines, 2 ladder trucks, 9 brush engines, 9 brush patrols, 1 hazardous materials rig, 1 rescue vehicle, 1 snow cat, 3 squad equipment, 14 support trailers, and 5 water tenders.

Hospitals

The general and acute care hospital closest to the Project site is Barstow Community Hospital approximately 41 miles east of the Project site. The Desert Valley and Victor Valley hospitals are located approximately 55 miles south in Victorville. Ridgecrest Regional hospital is located approximately 69 miles north of the site. There are three hospitals in the Lancaster area, approximately 90 miles west: Antelope Valley hospital, High Desert hospital, and Lancaster Community hospital. A summary of the hospitals is provided in Table 5.11-12.

Table 5.11-12. Hospitals Serving the Project Area

Hospital/Address	Available Services
Barstow Community Hospital 555 S. 7th Ave. Barstow, CA 92311	General and acute care, skilled nursing, physical therapy, subacute facility (56 beds)
Desert Valley Hospital 16850 Bear Valley Rd. Victorville, CA 92392	General and acute care, senior care, gerontology, mammography, radiology, imaging, diabetes, (83 beds)
Victor Valley Community Hospital 15248 11th Street East Victorville, CA 92392	General and acute care, gerontology, pregnancy centers, laboratories, urgent and primary care, family care, outpatient (110 beds)
Antelope Valley Hospital 1600 West Avenue Lancaster, CA 93534	General and acute care, skilled nursing, subacute facility, home health, home care, mental health, pharmacies, mammography, radiology, diagnostic services, women and children services (420 beds)

Hospital/Address	Available Services
High Desert Hospital 44900 N. 60th Street West Lancaster, CA 93536	General and acute care (28 beds)
Lancaster Community Hospital 43830 N. 10th Street West Lancaster, CA 93534	General and acute care (123 beds)
Ridgecrest Regional Hospital 1801 N. China Lake Blvd Ridgecrest, CA 93555	General and acute care, emergency, injuries, heart, cardiology, neurology (80 beds)

Source: Hospital Soup, June 2009

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 Project site and vicinity are within the unserved area of unincorporated San Bernardino County for water and wastewater. Local users depend on groundwater wells or trucked-in water. Similarly, there are no wastewater treatment or sewer systems in the area to which the Project could reasonably connect. As discussed in the Project Description, Section 2.4.4 Plant Auxiliary Systems, the water requirements of the Project include process water, cooling water, and water for mirror washing and other maintenance activities. The Project would use onsite groundwater wells as its water supply source and a system of evaporation ponds for industrial wastewater disposal. Sanitary wastewater will be sent to onsite sanitary waste septic systems at each power island. Existing groundwater quality has been determined to be adequate for Project needs, and the wells will draw from the adjudicated water rights owned by the Project developer.

Solid Waste

The County of San Bernardino Solid Waste Management Division (SWMD) is responsible for the operation and management of the County of San Bernardino's solid waste disposal system, which consists of six regional landfills, eight transfer stations, and three community collection centers. The County contracts with Burrtec Waste Industries for disposal site operations and maintenance. The SWMD also administers the County's solid waste-handling franchise program and the refuse collection permit program, which authorizes and regulates trash collection by private haulers in the unincorporated area. In the desert area, a total of eight private haulers are available for trash hauling, recycling, and buyback. The County website provides contact information for the private haulers in the unincorporated areas of the County.

The landfill closest to the Project site is the Barstow Landfill at 32553 Barstow Road in Barstow. It is accessed off Highway 247. This landfill operates Monday through Saturday

from 8 a.m. to 4:30 p.m. The Victorville Landfill is the second-closest landfill and is accessed off I-15 near the Stoddard Wells Road, following signs to the landfill.

Schools

Educational needs in the area are served by the Barstow Unified School District in Barstow. The Barstow Unified School District is located at 551 S. Avenue H in Barstow. The Muroc Joint Unified School District at 17100 Foothill Avenue in North Edwards is the next nearest school district, which serves the needs of North Edwards, Edwards Air Force Base, Boron, and remote areas of Riverside and Kern Counties.

The Barstow School District has nine elementary schools, two middle schools (5 through 6 and 7 through 8), and a high school. The Muroc School District in North Edwards consists of five schools, two elementary schools and two high schools. Tables 5.11-13 and 5.11-14 include the schools and enrollment in each of the respective districts.

Table 5.11-13. Summary of Schools and Enrollment in Barstow Unified School District

School Name	Grades	Location	Students
Crestline Elementary	K-4	2020 Monterey Avenue	365
Henderson Elementary	K-4	400 South Avenue E	380
Lenwood Elementary	K-4	34374 Ash Road	344
Montara Elementary	K-4	700 Montara Road	355
Skyline North Elementary	K-4	36968 Camarillo Avenue	239
Thomson Elementary	K-4	310 Mountain View	287
Cameron Elementary	K-5	801 Muriel Drive	564
Challenges Community Day	K-6	34374 Ash Rd	2
Hinkley Elementary/Middle	K-8	37600 Hinkley Rd.	326
Barstow Intermediate	5-6	500 South 'G' Ave.	1,053
Kennedy Middle	7-8	1000 Armory Rd	1,027
Central High (Continuation)	1-12	405 North Second Avenue	212
Barstow High	9-12	430 South First St.	1,931

Source: National Center for Education Statistics (2006-2007 school year), 2009

Table 5.11-14. Summary of Schools and Enrollment in Muroc School District

School Name	Grades	Location	Students
Bailey Avenue Elementary	K-2	1565 Bailey Avenue	412
West Boron Elementary	K-6	12300 Del Oro	359
Branch (Irving L.) Elementary	3-6	1565 Bailey Avenue	487
Edwards Middle	7-8	1577 Payne Avenue	220
Boron Junior-Senior High	7-12	26831 Prospect Street	258
McGowan (Robert) High (Continuation)	7-12	P.O Box 833	29
Desert High	9-12	Street1577 Payne Avenue	409

Source: National Center for Education Statistics (2006-2007 school year), 2009

5.11.2.7 Fiscal Resources

The local agency with taxing power is San Bernardino County. For the fiscal year 2006-2007, revenue as of June 30, 2007, for San Bernardino County totaled approximately \$2.3 billion, and expenditures totaled \$2.2 billion. San Bernardino's key expenditures were on Public Assistance, Public Safety, and Health which comprised 78.3 percent of total expenditures. A summary of San Bernardino County's expenses and revenues for the fiscal year is provided in Table 5.11-15.

Table 5.11-15. San Bernardino County Expenses and Revenues for FY 2006-2007

	Amount (Dollars)	Percentage
Expenses	2,236,211,311	100.0%
General Government	194,857,226	8.7%
Public Safety	689,589,696	30.8%
Public Ways and Facilities	83,263,113	3.7%
Health	281,125,780	12.6%
Public Assistance	780,879,392	34.9%
Education	18,301,543	0.8%
Recreation & Cultural	19,616,282	0.9%
Debt Services	72,547,926	3.2%
Transfers Out	96,030,353	4.3%
Financing Sources	2,373,605,058	100.0%
Special Benefit Assessment	3,228,458	0.1%
Property Taxes	419,344,995	17.7%
Other Taxes	51,915,443	2.2%
Licenses, Permits, Franchises	25,010,339	1.1%
Fines, Forfeitures, and Penalties	25,759,213	1.1%
From Use of Money and Property	57,696,741	2.4%
From Other Governmental Agencies	1,422,940,833	59.9%
Charges for Current Services	308,272,452	13.0%
Miscellaneous Revenue	47,697,161	2.0%
Other Financing Sources	1,762,423	0.1%
Transfers In	9,977,000	0.4%

Source: *State of California County Controller, 2008.*

5.11.3 Environmental Impacts

The following sections discuss the potential effects of Project construction and operation on the socioeconomic resources. The potential for environmental justice impacts is also assessed in this section.

5.11.3.1 Evaluation Methods and Significance Criteria

For the purposes of this evaluation, local socioeconomic impacts were determined by comparing Project demands during construction and operation with the socioeconomic resources of the three-county study area. The primary 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 could also be considered significant if they were to 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 San Bernardino County.

Project Work Force and Population

Project construction is expected to occur over a total of 26 months. Including linear facilities as well as the plant site facilities, Project construction would require an average of 830 employees per day over the entire 26-month construction period with manpower requirements peaking at approximately 1,162 workers in Month 17 of construction (see Table 5.11-16).

Table 5.11-16. Mojave Solar Project Construction Workforce by Skill

Trade or Skill	M1*	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
Carpenters, Masons, Finishers	20	25	40	30	50	70	70	85	85	85	85	90	85
Electricians	15	15	15	25	45	45	55	55	60	60	95	95	110
Equipment Operators	22	30	42	55	55	60	60	60	60	60	45	35	35
Grading Supervisors	6	6	6	6	6	6	--	--	--	--	--	--	--
Heavy Equipment Operator	55	55	55	55	55	55	3	3	3	3	3	3	3
Insulators/Sheetmetal Workers	--	--	8	16	16	5	5	5	5	10	28	38	52
Ironworkers	4	8	15	15	30	45	45	45	45	60	60	60	40
Laborers	15	40	60	60	75	75	75	75	75	75	75	75	75
Mechanics	4	4	4	4	4	4	--	--	--	--	--	--	--
Mechanic's Helpers	7	7	7	7	7	7	--	--	--	--	--	--	--
Millwrights	--	--	--	20	20	20	30	30	35	35	35	40	55
Painters	--	--	--	--	--	--	--	--	--	--	--	--	--
Pipefitters	--	--	--	10	35	20	75	95	110	100	145	135	145
Security	5	8	8	8	12	12	12	12	12	12	12	12	12
Sprinklerfitters	--	--	--	--	--	--	--	--	--	--	--	--	12
Supervisors, Planners	8	24	35	45	65	75	75	75	75	85	85	85	85
Surveyors/Designers	12	22	22	30	30	30	30	30	30	30	30	30	30
Welders	--	--	4	15	25	35	65	80	75	85	90	85	90
Assembly Workers (Semi-skilled)	--	--	--	10	150	298	298	298	298	298	298	298	298
Total	173	244	321	411	680	862	898	948	968	998	1,086	1,081	1,127

* "M" denotes construction "Month".

Trade or Skill	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26
Carpenters, Masons, Finishers	80	75	75	75	75	75	55	45	35	35	25	--	--
Electricians	125	125	125	140	140	135	135	135	75	75	50	50	15
Equipment Operators	35	35	35	35	35	35	35	35	30	30	30	10	10
Grading Supervisors	--	--	--	--	--	--	--	--	--	--	--	--	--
Heavy Equipment Operator	3	3	3	3	3	3	3	3	3	3	3	3	3
Insulators/Sheetmetal Workers	52	52	52	52	50	50	50	50	50	50	25	12	8
Ironworkers	40	40	45	45	45	45	25	25	25	20	20	--	--
Laborers	75	75	65	65	65	65	65	65	65	55	55	30	20
Mechanic	--	--	--	--	--	--	--	--	--	--	--	--	--
Mechanic's Helper	--	--	--	--	--	--	--	--	--	--	--	--	--
Millwrights	55	55	55	55	55	55	55	55	55	55	35	15	8
Painters	--	--	--	--	--	--	4	6	8	8	4	4	4
Pipefitters	145	145	145	145	145	110	85	75	40	40	40	20	20
Security	12	12	12	12	12	12	12	12	12	12	12	8	8
Sprinklerfitters	24	24	24	32	32	32	32	32	40	35	15	15	7
Supervisors, Planners	85	85	85	85	80	75	75	75	55	55	55	30	15
Surveyors/Designers	30	30	30	30	30	30	30	30	30	24	8	--	--
Welders	90	90	90	90	90	90	90	90	90	55	45	20	20
Assembly Workers (Semi-skilled)	298	298	298	298	298	298	298	298	298	298	298	298	150
Total	1,149	1,144	1,139	1,162	1,155	1,110	1,049	1,031	911	850	720	515	288

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. An abbreviated list of the number of workers anticipated by trade required for Project construction is shown in Table 5.11-17. The table reveals that a more than adequate supply of trade workers exists to fulfill the demand created by the Project construction.

Table 5.11-17. Available Workers by County

Trade	San Bernardino	Los Angeles	Kern	Total All Three Areas	Total Workers Needed (peak)
Carpenters, Masons, Finishers	60,270	39,370	4,190	103,830	90
Electricians	6,740	13,040	2,350	22,130	140
Equipment Operators	870	5,650	2,990	9,510	60
Insulators/Sheet metal Workers	5,060	8,430	380	13,870	52
Ironworkers	1,940	2,460	250	4,650	60
Laborers	27,930	31,330	4,860	64,120	75
Painters	8,500	13,720	990	23,210	8
Pipefitters	4,630	12,090	250	16,970	145
Supervisors, Planners, Mgmt Office	10,990	15,490	2,460	28,940	85

Source: CA EDD, 2009.

According to the Electric Power Research Institute (EPRI) report titled *Socioeconomic Impacts of Power Plants*, construction workers will commute as much as 2 hours to construction sites from their homes, rather than relocate (EPRI, 1982). Table 5.11-17 shows a partial list of the construction phase labor required by the Project and Table 5.11-8, Table 5.11-9 and Table 5.11-10 show available construction labor in San Bernardino County, Los Angeles County and Kern County. The proposed Project would be expected to draw from the entire construction workforce in the region, not merely those workers that are available within the immediate area.

Even at the peak of construction (1,162 workers), the availability of over 297,300 construction workers in San Bernardino, Los Angeles, and Kern counties alone would be more than sufficient to meet the Project employment needs, with the project requiring approximately 0.4% of the available workforce. Therefore, Project construction labor demand would not significantly affect the availability of construction labor in the region.

With the exception of some specialized trades involving a limited number of workers, it is anticipated that the Project construction workforce would be drawn from the regional area (i.e., San Bernardino County, Los Angeles County, and Kern County). Therefore, 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 1,162 workers and an average of 830 workers per day over the 26-month duration of MSP 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 is located in a remote, uninhabited area, and would not displace existing populations.

Housing

As described above, it was assumed that few, if any, construction workers would permanently relocate to the communities near the Project site during the proposed Project construction phase. This is because construction workers typically commute relatively long distances to their work sites which change over time. Should some construction workers choose to stay temporarily at a local area motel or hotel, there is ample transient housing. There are about 1400 hotel/motel rooms and suites among 19 different establishments in the area surrounding Barstow, with extensive additional temporary housing available in the communities within 2 hours of the proposed project site. Additional housing opportunities are available in the form of RV and mobile home sites. 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 the residential vacancy rate is 14 percent in Barstow.

Because the Project construction workforce largely will commute to the area rather than relocate, increased demand on the local housing supply is expected to be negligible.

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 expenditures within the three-county study area for construction materials and services. The Project construction payroll has been estimated at approximately \$272 million over 26 months (\$125.6 million estimated annually). Capital expenditures and local spending on construction materials and equipment within the three-county study area are estimated to total approximately \$121 million over 26 months (\$55.8 million estimated annually).

Project construction is expected to directly create an average of 830 annual FTE over 26 months, with a peak monthly employment of 1,162 FTEs. This direct employment 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 Professional) was used to estimate economic impacts within San Bernardino, Kern, and Los Angeles counties based on the project construction-

phase expenditures that would benefit the local economies.² For the purpose of the input-output model, the following Project expenditures (rounded values) were assumed to be the Project expenditures that would benefit the local economies: (1) Estimated Annual Payroll (\$125.6 million); and (2) Estimated Annual Local Capital Expenditures and Materials (\$55.8 million).

Based on the assumption stated above, the total estimated annual beneficial economic impacts from the 26-month construction phase within San Bernardino, Kern, and Los Angeles counties would be as follows (rounded values):

Direct economic output: \$158,158,3873
Indirect economic output: \$39,285,000
Induced economic output: \$107,728,086
Total impact: \$305,171,473

The top ten industries that would benefit the most in terms of economic output impacts include: rental housing, wholesale trade businesses, architectural/engineering services, petroleum refineries, real estate, food service, physicians and other health professionals, private hospitals, banks, and insurance carriers.

Also, using the assumptions above, during the construction phase, the Project's estimated annual employment creation within the study area would be as follows:⁴

Direct (Project) employment: 830
Indirect employment: 666
Induced employment: 1,045
Total employment creation: 2,541

This additional employment would result from the Project's local construction expenditures as well as from spending by local construction workers. This indirect and induced

² IMPLAN is an economic impact modeling tool that uses region-specific input/output accounts by industry to estimate secondary impacts of economic stimuli. Secondary impacts include (1) indirect impacts that occur due to the purchase of goods and services by firms involved with Project construction and operation, and (2) induced impacts, which result from household spending. Secondary impacts can occur in the form of employment, income, output, and taxes.

Social Accounting Matrices (SAM) multipliers were used for the impact analysis. SAM multipliers are recommended by the writers of the IMPLAN software because an *induced* effect estimate using a SAM multiplier is based on information in the social accounting matrix, which accounts for social security and income tax leakage, institution savings, and commuting.

The multipliers for the Project impact analysis were derived by editing the specific industry data for the three-county study area in the IMPLAN input/output relationships to represent the direct economic impacts associated with the Project (e.g., estimated annual construction cost and annual operation cost). IMPLAN sector 36, "Construction of other new non-residential structures," is the IMPLAN sector recommended by the software to correspond closest to the North American Industry Classification System (NAICS) code 21, which is used for "Power plants, new construction." All figures are in 2009 dollars.

³ Direct regional revenues include all local project expenditures (\$55.8 million), and Project-related employee compensation (\$125.6 million), with \$23.2 million removed accounting for domestic and foreign trade occurring outside of the study area.

⁴ Employment impacts are rounded to the closest whole number. Thus, some error has been introduced due to rounding.

employment is expected to be filled both locally and regionally, and would result in positive economic impacts.

Public Services

No significant impacts to local public services are expected during construction. Current law enforcement, fire, and medical service capacity should be sufficient to handle emergencies at the site. A security fence will be erected around the entire perimeter of the construction site; no significant adverse impacts would be expected on the San Bernardino County Sheriff's Department or the San Bernardino County Fire Department. Fire extinguishers will be available on site during "hot work," and personnel will be trained in their proper use. 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.

Utilities

Although minimal or no population impacts are expected, there would be some demands on utility services during construction as a result of onsite activities. MSP construction would require potable water and electrical utility supplies and would generate wastewater and solid waste. Utility hookups would be available at the site for electrical service, but water would be obtained from onsite wells. Sanitary wastes generated during construction would be collected in portable, self-contained toilets and hauled to an appropriate disposal site. No significant impacts would be expected.

Schools

Construction of the Project is expected to have an insignificant local and regional impact on schools. A large 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. Finally, the nearest school to the Project site is approximately 9 miles away and school activities would not be affected by Project construction activities (e.g., equipment noise, fugitive dust).

Fiscal Resources

Annual expenditures within the three-county study area on construction materials, supplies, and equipment are estimated to total \$55.7 million. In the event that all purchases are made within San Bernardino County, which has a tax rate of 8.75 percent, these expenditures would generate approximately \$4.87 million in annual sales tax revenue. The 8.75 percent San Bernardino County sales tax rate is divided into 7.25 percent for the State of California; 0.75 percent for San Bernardino County operations, 0.25 percent to the San Bernardino County Transportation Fund, and 0.50 percent for San Bernardino County District Transaction and Use (BOE, 2009). Based on estimated expenditures of \$55.7 million within the three-county study area, the annual sales tax generated for the State is estimated at \$4.04 million; San Bernardino County operations would receive approximately \$418,000 per year; County Transportation Fund sales tax revenues are estimated at approximately \$140,000 per year; and County District Transaction and Use are estimated at \$240,000 annually for the construction period.

5.11.3.3 Operation

The following subsections describe the potential impacts of MSP operations on socioeconomic conditions and resources in San Bernardino County.

Project Work Force Population

The Project is expected to employ a total of 68 workers during operation. Some of the Project operations employment may involve relocation to the area for workers with specialized technical or managerial skills. Given the modest size of the Project workforce 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 insignificant less than significant impact on housing because of the small number of workers needed for operation of the plant and the availability of local housing (e.g., 2008 vacancy rates of 11.6% in San Bernardino County). The Project would be constructed in a rural area and would not physically alter any residential or commercial community. Because the Project site location is away from residences and the Project-related population increase is expected to be minimal, no substantial change is expected in community interaction patterns, social organization, social structures, or social institutions.

Employment

As stated above, 68 full-time average annual employees would be needed to operate and maintain the Project, including 5 management staff; 6 administrative and clerical staff; 40 operation and power block routine maintenance staff (supervisors, specialists, engineers, operators); 12 skilled laborers (mechanics, electricians, welders); and 5 unskilled staff. Most of the 68 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 San Bernardino, Kern, and Los Angeles counties based upon operation-phase project expenditures that would benefit the local economies.⁵ For the purpose of the input-output model, the annual expenditures of the project were assumed to be \$12.7 million for materials, equipment, and supplies, and \$8.2 million in payroll annually. These figures were used as inputs into the model to predict economic and employment impacts. Based on the assumption above, the annual estimated economic impacts from the operation of the Project within the study area would be as follows (rounded values):

Direct economic output: \$12,632,021⁶

Indirect economic output: \$3,512,846

Induced economic output: \$2,806,602

⁵ IMPLAN sector 31, "Electric power generation, transmission, and distribution," is the IMPLAN sector recommended by the software to correspond closest to the NAICS code 221119, which is used for, "Electric power generation: solar."

⁶ Direct regional revenues include all Project expenditures (\$12.7 million), and Project-related employee compensation (\$8.2 million), with \$8.3 million removed accounting for domestic and foreign trade occurring outside of the study area.

Total impact: \$18,951,469

Also, using the assumptions above, during the operations phase, the Project's estimated annual employment creation within the study area would be as follows⁷:

Direct (Project) employment: 68

Indirect employment: 52

Induced employment: 40

Total employment creation: 160

Public Services

MSP 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 (MSP) with a modest size workforce would not be expected to have a significant adverse impact on demand relative to the capacity of most local public services. Additionally, the services provided by San Bernardino County Sheriff's Department and Fire Services could be enhanced by emergency services in Barstow, if requested.

Utilities

The Project would utilize site brackish groundwater and thus would have no impact on local water utilities. Project sanitary wastes would be disposed of by an onsite septic system and leach field and thus would have no impact on the availability of local wastewater treatment capacity. The Project would utilize natural gas for start-up and for heat transfer fluid (HTF) freeze protection. A new pipeline would be constructed to connect the Project with an existing Southern California Gas gas line; Project impacts on natural gas supply/service will be less than significant. The Project also will require electrical power for operational activities during nighttime hours when the facility is not generating its own power; impacts on electrical supply/service would be less than significant and the project, by its very nature, would represent a net gain in capacity.

Schools

Operation of the Project is expected to have a less than significant local and regional impact on schools because of the relatively small number of workers needed for operation of the plant (maximum of 68 employees).

In January of 2008, Barstow Unified School District suspended the collection of development impact fees for industrial and residential development. Therefore, the proposed Project would not be required to pay a development impact fee to the BUSD (BUSD, 2009).

Fiscal Resources

At present, there is no property tax assessed 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 devices, power conditioning equipment, transfer equipment, and parts. The proposed Project property

⁷ Employment impacts are rounded to the closest whole number. Thus, some error has been introduced due to rounding.

value is estimated at roughly \$1 billion. After applying the California solar equipment property tax exemption, the taxable portion of the property value would be approximately \$25 million. Assuming a San Bernardino County property tax rate of 1.2 percent, the first operational year would generate an estimated \$300,000 in annual property taxes. These taxes would be distributed among local agencies and programs in San Bernardino County, as outlined in Table 5.11-8. Fiscal impacts associated with operation of the Project are considered beneficial.

During operation, it is expected that annual purchases for materials, supplies, equipment, and services would total approximately \$12.7 million. If all purchases were to occur within San Bernardino County, which has a sales tax rate of 8.75 percent, this economic activity would generate approximately \$1.1 million in annual sales tax revenue. The 8.75 percent San Bernardino County sales tax rate is divided into 7.25 percent for the State of California; 0.75 percent for San Bernardino County operations, 0.25 percent to the San Bernardino County Transportation Fund, and 0.50 percent for San Bernardino County District Transaction and Use (BOE, 2009). Based on estimated local construction expenditures of \$12.7 million, the annual sales tax generated for the State is estimated at \$920,000; San Bernardino County operations would receive approximately \$95,000 per year; County Transportation Fund sales tax revenues are estimated at approximately \$32,000 annually; and County District Transaction and Use are estimated at \$64,000 annually for the construction period.

5.11.3.4 Environmental Justice

The purpose of this Executive Order 12898 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. The study area for the environmental justice analysis was delineated by a 6-mile radius from the proposed project site per CEC guidelines. No incorporated towns fall within the study area. Therefore, the environmental justice analysis discusses the populations residing in census tract 116, block groups 1 and 2 and census tract 119, block group 1 (US Census, 2000).

Table 5.11.18 presents the minority population composition of the study area and San Bernardino County as a whole.⁸ San Bernardino County as a whole exhibits a proportion of minority residents of 56.2 percent, which is substantially higher than two of the block groups within 6 miles of the Project site. These block groups include 116.01 and 119.01, with minority proportions of 19.1 and 32.9 percent, respectively. The block group in which the Project is situated, 116.02, has a proportion of minority residents of 76.5 percent.

Figure 5.11-2 shows the distribution of minority populations within a 6-mile radius of the Project center. As shown, the radius encompasses all or parts of three census block groups, census tract 116, block groups 1 and 2 and census tract 119, block group 1. The total population in the three block groups within the 6-mile radius is 5,820, of which a total of 1,335 are classified as Black or African-American, American Indian (or Alaska Native), Asian, Native Hawaiian (or other Pacific Islander), some other race (including two or more races), or Hispanic or Latino.

⁸ "Minority" is defined as all persons except non-Hispanic whites. In other words, all racial groups other than white, and all persons of Hispanic origin regardless of race.

The 2000 census data reported that median household income for the San Bernardino County was \$49,217. The median household income for block group 119.1 is lower than the County average at \$28,807. Block group 116.1 is roughly the County average. The median household income for block group 116.2 is the lowest in the study area at \$9,318. The proportion of residents living below the poverty level in block group 116.02 is 44.0 percent, which is substantially higher than any of the other block groups within 6 miles of the Project, and almost three times the proportion present in San Bernardino County as a whole.

Table 5.11-18. Environmental Justice Characteristics

Geographic Area (Census Block Group)	Total Population	Total Minority (Percentage Minority)	Median Household Income (1999)	Proportion of the Population Living Below the Poverty Level (Percentage Low-Income)
116.01	4,611	883 (19.1%)	\$49,046	6.9%
116.02	179	137 (76.5%)	\$9,318	44.0%
119.01	1,072	353 (32.9%)	\$28,807	19.4%
San Bernardino County	1,721,942	334,455 (56.2%)	\$49,217	15.8 %

Source: U.S. Bureau of the Census 2000.

The CEC 6-Month Data Adequacy process requires a discussion of the potential for disproportionate impacts from the project on minority or low-income people (§ 2022(b)(4)). Additionally, Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations” requires all federal agencies to develop environmental justice strategies.

Pursuant to the directive, the USEPA issued guidelines that require all Federal and State agencies receiving federal funds to develop strategies to address this issue. This analysis uses the Federal guidelines to analyze potential environmental justice impacts. The Federal guidelines include a two-step screening process to determine whether a project could result in disproportionate impacts on low-income and minority populations. The first step is to evaluate whether the potentially affected community or area includes minority and low-income populations; if it contains these population groups, the second step is to determine whether the environmental impacts fall disproportionately on minority and low-income members of the community. The CEC uses a 50 percent concentration of minorities or people with low income as a cutoff to indicate that there is a potential issue in a given area.

Therefore, based on the first step of the screening process described above, the Project could potentially affect low-income and minority populations in census tract 116, block group 2 and census tract 119, block group 1.

In the context of the siting of a power plant, the primary environmental justice issue would be potential air or water emissions that could adversely affect the health of these populations. Other issues could be any potential residential or business displacements, and noise impacts on populations near the power plant or ancillary facilities. However, the

proposed Project would not result in significant air quality impacts or impacts to surrounding communities from emissions of toxic air contaminants. The proposed Project would also not involve wastewater discharges that could affect drinking water supplies. Because of the Project design features and the distance of sensitive receptors from the proposed power islands, there would be no significant noise impacts. The Project would not displace any homes or businesses. In light of these findings, the rural and remote character of the area, and the low population concentration near the Project, the Project would not result in disproportionate impacts on low-income and minority populations present in the area around the power plant and ancillary facilities.

5.11.3.5 Cumulative Impacts

The potential for cumulative socioeconomic impacts exists where there are multiple projects proposed in an area that 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.

Ten cumulative projects have been identified, including four solar projects, two wind farm projects, and four industrial or residential developments. These projects were selected for the cumulative impacts list because they are all within a one-hour drive of the Project site. The projects include eSolar2 and Solar Millennium – Ridgecrest, both solar projects located in Kern County, which have not yet submitted for environmental review. The Beacon solar project in Kern County and SES Solar One/Stirling Power project in San Bernardino County are in the early portions of the environmental review process. The West Fry and Granite Mountain Wind Energy projects, both located in San Bernardino County, are in the early portions of environmental review. The remaining developments, a Walmart Distribution Center, a Nursery sludge plant, and two residential housing developments, are located in proximity to the City of Barstow. Estimated average construction workers per day for each project ranges from 10 for the Nursery sludge plant to 75 for Granite Mountain Wind Energy Project to 700 for SES Solar One/Stirling Power.

Even if some overlap occurs in construction schedules among the Project and the other projects, all projects would be expected to draw on the large regional construction workforce in southern California. A large influx in construction labor to the area could create demand for temporary housing that is greater than the existing supply. However, it was assumed that few, if any, construction workers would permanently relocate to the communities near the Project site during the proposed 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 is ample transient housing in the 60 mile radius surrounding the Project site. There are about 2400 hotel/motel rooms and suites among 34 different establishments in the area surrounding Barstow, California City, and Mojave, with extensive additional available temporary housing in the communities within 2 hours of the proposed project site. Additional housing opportunities are available in the form of RV and mobile home sites.

Project construction and operation are not expected to lead to more than minimal population immigration (construction workers and families) and the Project will contribute

positively to the local economy, e.g., through increased property and sales tax revenues. Project would not be expected to contribute substantially to significant adverse cumulative socioeconomic impacts during either its construction or operations phase.

5.11.4 Mitigation Measures

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

5.11.5 References

- Barstow Unified School District (BUSD) 2009. Telephone conversation with Lucille Kounovsky, Business Services on June 10, 2009.
- California Department of Finance (DOF), 2009. <http://www.dof.ca.gov/research/economic-financial>. Accessed on June 9, 2009.
- California Employment Development Department (EDD), 2009. <http://www.labormarketinfo.edd.ca.gov>. Accessed on June 9, 2009.
- California State Board of Equalization (BOE), 2009. *California City and County Sales Tax and Use Rates* April 1, 2009, Publication No. 71.
- California State Controller's Office, Counties Annual Report, FY 2006-2007, http://www.sco.ca.gov/ard_locrep_counties.html. Accessed on June 9, 2009.
- County of San Bernardino, 2009. General Plan 2009 (San Bernardino GP) <http://www.co.san-bernardino.ca.us/sbcountygeneralplan/>. Accessed on June 9, 2009.
- Gilmmore, J.S. and D. Hammond, K.D. Moore, and J.F. Johnson. *Socioeconomic Impacts of Power Plants*. Electric Power Research Institute (EPRI), Feb 1982.
- IHS Global Insight, 2009. <http://www.globalinsight.com/ProductsServices/ProductDetail1084.htm>. Accessed on June 9, 2009.
- National Center For Education Statistics (2006-2007 school year), 2009. <http://nces.ed.gov>. Accessed on June 9, 2009.
- Travelocity, 2009. Hotel and motel rooms for City of Barstow, CA. www.travelocity.com. Accessed on June 9, 2009.
- U.S. Bureau of the Census (US Census), 2000 and 2008 (Decennial Census and American Communities Survey). <http://www.census.gov>. Accessed on June 9, 2009.

Figure 5.11-1. Affected Area Defined by 2-Hour Drive Time

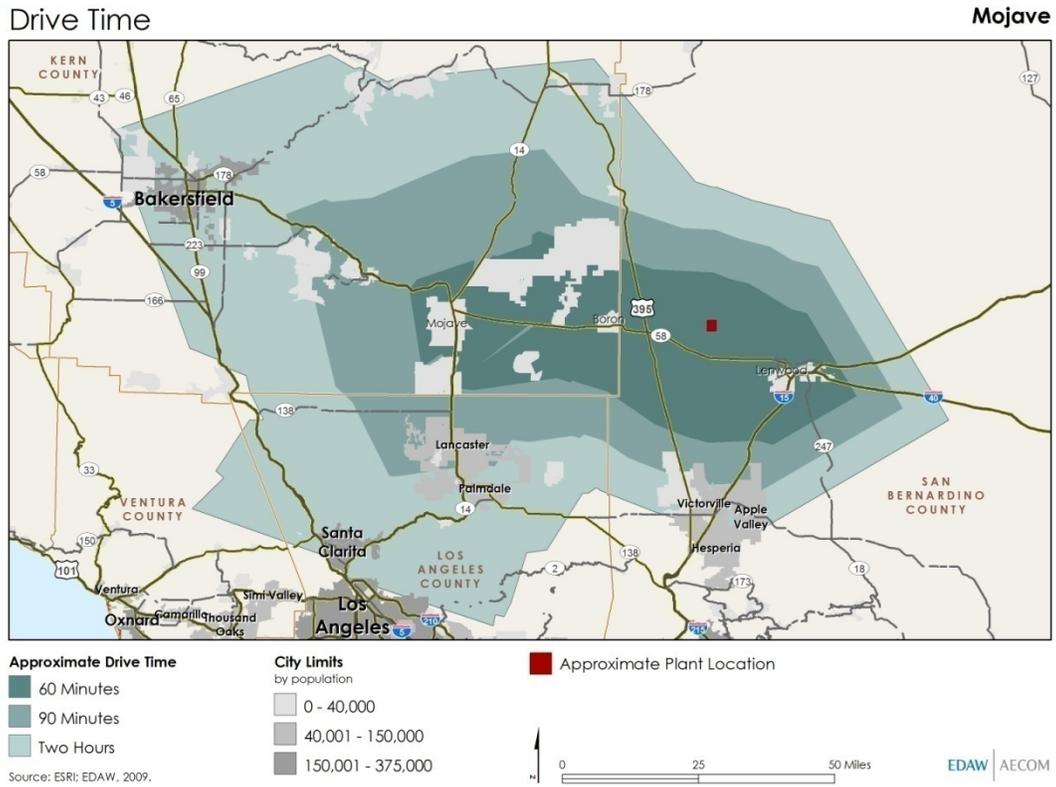


Figure 5.11-2. Proportion Below Poverty Level by Census Block group

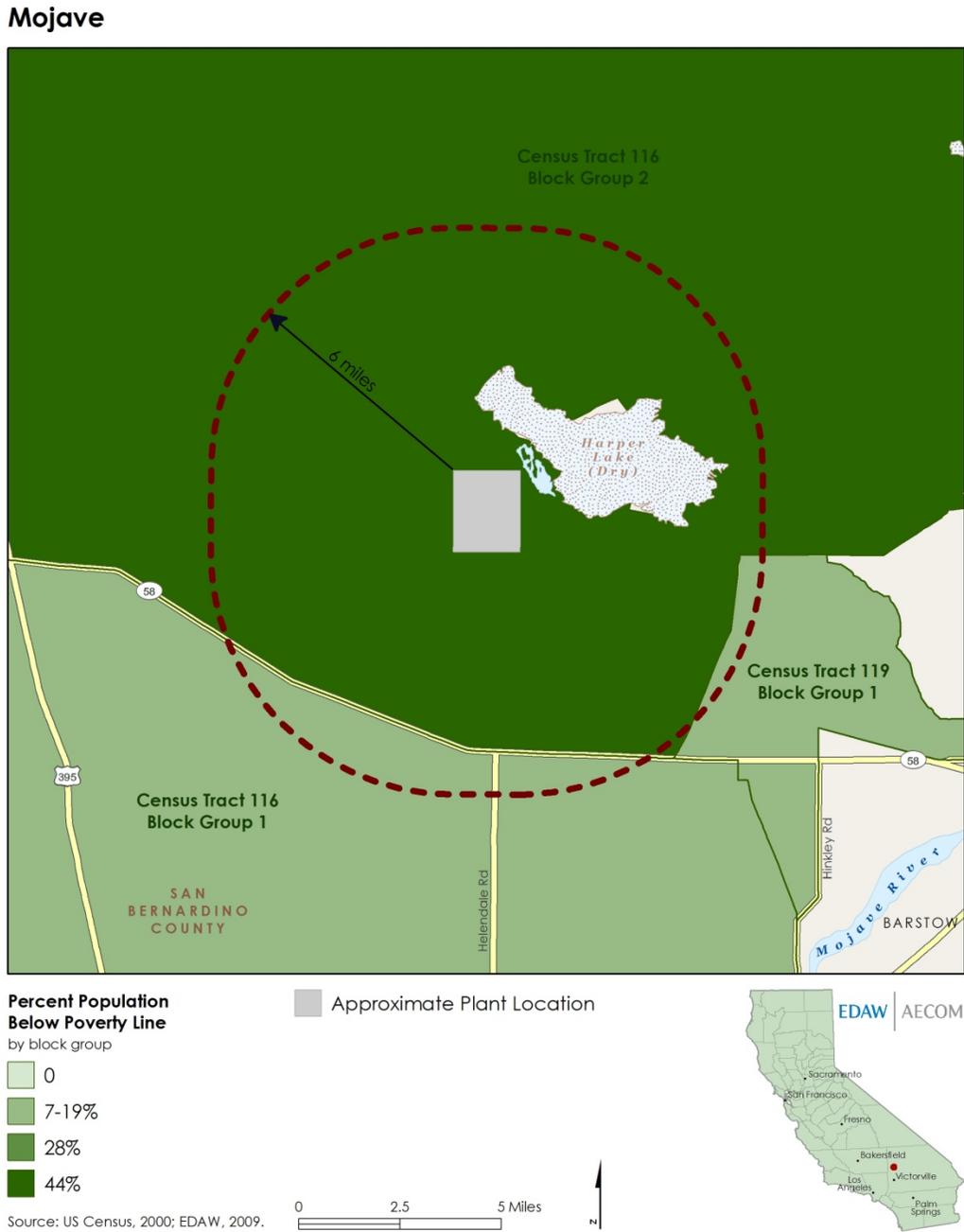


Figure 5.11-3. Percent Minority by Census Block group

