

the County for heavy industrial use, the plants are located together north of the City of Imperial on the west side of SR-111, south of Keystone Road.

An extensive source of energy is available in Imperial County in the form of sunlight (solar generation). Photo-voltaic cells power a variety of items from calculators to remote telecommunications stations and water pumps. It has been estimated that solar power could eventually produce 10 percent of the United States energy supply. No commercial power generation of solar energy presently exists in the County.

### **3.14.2 Minerals**

A wide variety of minerals are found throughout Imperial County. Gold, gypsum, sand, gravel, lime, clay, and stone have the highest economic value and are presently extracted for profit in the County. Industrial materials are also readily available, including kyanite, mineral fillers (clay, limestone, sericite, mica, and tuff), salt, potash, calcium chloride, manganese, and sand. The managed use of the valuable mineral deposits is important for regional economic stability. Mining operations are restricted to the relatively few locations where mineral deposits are suitable for extraction. In the past, minor amounts of sand and gravel were mined in the Truckhaven Geothermal Leasing Area. These operations have expired, and no other mines are operating or proposed at present.

## **3.15 Recreation**

### **3.15.1 Regional Setting**

The BLM is entrusted with the multiple use management of natural resources on public land, in accordance with the FLPMA. As part of multiple use management under the FLPMA, public land must be managed for outdoor recreation and natural, scenic, scientific, and historical values. (Policy set by Section 102(a)(13) of the FLPMA also recognizes the nation's need for domestic sources of minerals, timber, food and fiber from the public lands.) BLM land has a variety of uses, including recreation. General recreation activities on BLM-administered land in the CDCA include hobby prospecting, sightseeing, photography, hunting, painting, bird watching, biking, camping, picnicking, hiking, OHV use, and wildlife viewing (USDI BLM 1999). The California Desert attracts several million visitors annually, participating in a wide range of recreational activities as noted above. The sheer landscape diversity provides a variety of settings in which to enjoy the desert's natural beauty and solitude away from the urban settings of Southern California.

The California Department of Parks and Recreation (CDPR) manages the public land within the Truckhaven Geothermal Leasing Area as a majority of the proposed action area lies within the OWSVRA (Figure 3-6). Although BLM owns 23 sections of land in the Truckhaven Geothermal Leasing Area that are within the OWSVRA, the CDPR administers those BLM parcels via a MOU between the two agencies (Appendix D). Although the MOU allows the State to administer access to these BLM lands, it does not grant the State the authority to approve or reject the pending Federal lease applications for those parcels.

Designated by the FLPMA in 1976, the CDCA is a 25-million acre expanse of land in Southern California. About 10 million acres are administered by the BLM. Congress directed BLM to prepare and implement a comprehensive, long-range plan for the management, use, development, and protection of the public lands within the CDCA. The plan is based on the concepts of multiple use, sustained yield, and maintenance of environmental quality. The plan establishes goals for protection and for use of the Desert. It designates distinct multiple use classes for the lands involved, and it establishes a framework for managing the various resources within these classes. These lands are managed in a controlled balance between higher intensity use and protection. A wide variety of uses, such as mining, livestock grazing, recreation, energy, and utility development, are allowed. Any damage that permitted uses cause must be mitigated (USDI BLM 1999). In addition to OHV uses, the Truckhaven area of the CDCA has several unmanaged hiking trails within the area, as well as the Truckhaven Trail, and several primitive campgrounds with no facilities that can be accessed only by foot or OHV.

### **Regulatory Framework**

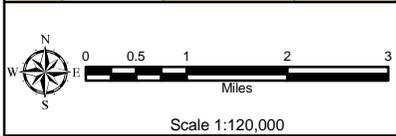
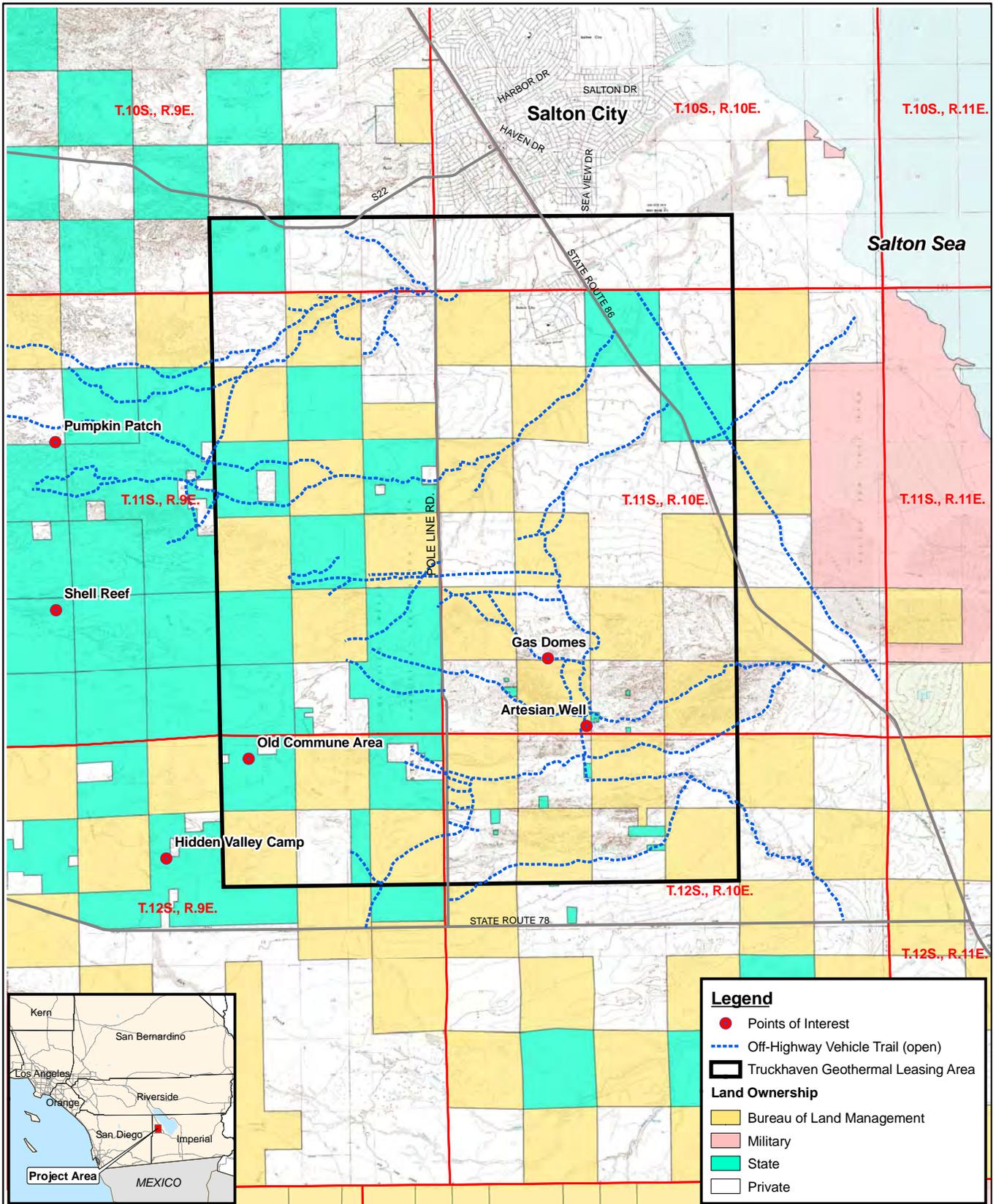
Since the CDCA's designation, the BLM lands have been managed according to mandates set forth in FLPMA Section 601. Among the policies in effect for the CDCA is the following, which states:

. . .the use of all California desert resources can and should be provided for in a multiple use and sustained yield management plan to conserve these resources for future generations, and to provide present and future use and enjoyment, particularly outdoor recreation uses, including the use, where appropriate, of off-road recreational vehicles . . . [90 Stat. 2743, Sec. 601 (a)(4)].

Section 601(d) also directed the BLM to develop a land use plan, prepared under Section 202 of FLPMA, which was originally completed in 1980 and amended many times since to guide the management of the CDCA under the principles of multiple use and sustained yield, including resource use and mineral development. The plan divided all public land within the CDCA, including the parcels in the Truckhaven Geothermal Leasing Area, into multiple use classes that stipulate, among other things, whether different areas can be used for motorized recreation and motorized access and the intensity of that use. Because these classes are legally binding, unless amended through the public process, the BLM must manage the parcels in the proposed action area according to the class prescriptions. The Truckhaven Geothermal Leasing Area is designated a Class M or moderate use.

In 2003, BLM completed the Western Colorado Route of Travel Plan, which updated the route designations for the western portions of the CDCA, including lands within the Truckhaven Geothermal Leasing Area.

BLM has no developed campgrounds or facilities within the project area. The OWSVRA is open for camping, and the BLM property administered by CDPR is used similarly.



**TRUCKHAVEN GEOTHERMAL LEASING AREA**

**FINAL EIS**

Figure 3-6  
**RECREATION**

Job Id:	
Date: 12/28/2006	GIS Analyst: avh
Map Source Information: USGS Topographic Quadrangle 1:24,000. Terraserver.	



Truckhaven area is not designated a Special Recreation Management Area, and the CDCA Plan does not call for the area to receive any special management attention.

### **3.15.2 California Department of Parks and Recreation**

Approximately 33,900 acres of the Truckhaven Geothermal Leasing Area are within the OWSVRA (see Figure 3-6), a CDPR system unit established in April 1976. It consists of over 80,000 acres (CDPR 2006) and receives over 600,000 vehicle visits a year (CDPR 2007). State Vehicular Recreation Areas are OHV parks operated by the Off-Highway Motor Vehicle Recreation Division of the CDPR on land owned by the California State Lands Commission.

The Ocotillo Wells area is divided into several access classifications: 85 percent is classified as Open-Use Zone, open to all types of OHV recreational uses; 15 percent is classified as Trail-Use Only, in areas located in the southwest and northeastern corners of the unit and specifically designated to minimize biological impacts to flora and fauna by keeping vehicles within established trailways; and 1 acre is classified as Closed Zone, at Barrel Springs (CDPR 1981). BLM parcels in the Truckhaven Geothermal Leasing Area limit OHV use to designated trails. Additionally, within the Truckhaven area there are several undesignated trails that OHVs frequently use.

#### **Vehicle Types**

The vehicle types utilized at the OWSVRA include off-road and street-legal vehicles, including sand rails, dune buggies, all-terrain vehicles, motorcycles, two- and four-wheel drive pickups, sport utility vehicles, and custom-built off-road vehicles.

#### **OWSVRA General Plan**

In 1971, the California Legislature passed the Chappie-Z'burg Off-Highway Vehicle Act. This act provided for the registration of vehicles, set equipment noise standards, and created OHV operating rules. Additionally, this law, combined with the Chappie-Gregorio Off-Highway Gas Tax Act, allows the CDPR to acquire land for the purpose of providing facilities to accommodate this form of recreation (CDPR 1981).

The following planning objectives of the OWSVRA General Plan guide the development and management of the OWSVRA:

- Establishment of land-use designations that protect resources and accommodate recreational activities;
- Establishment of interpretive programs that educate OHV users about desert safety and point out the need for user assistance in minimizing unit maintenance as well as preserving resources;
- Provision of increased OHV recreational opportunities through the interpretation of desert resources;

- Provision of facilities required for unit operation; and
- Provision of sewage storage and water supplies to handle increased visitation.

## **Current Situation**

### *Recreation Visitation*

The OWSVRA is located within a three-hour drive from Los Angeles, Orange County, Riverside, and San Diego, and a five-hour drive from Phoenix. The OWSVRA is a highly valued and unique recreation resource within the southwestern United States because: (1) it is an OHV area of an unparalleled size; and (2) it fills a unique and valued niche for providing motorized recreational opportunities in close proximity to the population centers of Southern California.

Continued population growth in Southern California, the expanding popularity of OHV recreation (a 108 percent increase in California since 1980), and a 48 percent decrease in the acres available to OHV recreation in the California Desert has resulted in a steady increase in visitation at the OHV areas in Imperial County, including the OWSVRA and the Imperial Sand Dunes Recreation Area (USDI BLM 2003a).

The area now within OWSVRA was first used for OHV recreation in the 1940s. OHV enthusiasts who visit the OWSVRA on holiday weekends experience large crowds, noise, and intensive 24-hour OHV activity, particularly near the base of Borrego Mountain, Squaw Peak, and the Mesquite Dunes area (USDI BLM 1981). There are locations within the OWSVRA where OHV recreation is less intense on holiday weekends, and visitors can have a quieter, less intensive experience. The OWSVRA is managed to provide motorized recreational opportunities to area residents and visitors. In addition to OHV recreation, the OWSVRA connects with ABDSP, which provides other recreational opportunities, including hiking, horseback riding, wildlife and scenery viewing, picnicking, photography, nature study, and environmental education, camping, sightseeing, and driving for pleasure. The OWSVRA provides wide-open spaces where visitors can seek either solitude or a highly intensified motorized recreational use experience.

### *Recreation Supply and Demand*

The OWSVRA receives approximately 1.9 million visitors annually (2006 figures), with the heaviest visitation period occurring between Halloween and Easter, avoiding the hot summer months. Park management estimates that the area received approximately 633,000 vehicle trips to the OWSVRA during 2006 (Dolinar 2007).

### *Facilities*

No fees are collected for camping or day-use. Open camping is permitted throughout the unit for up to 30 days per calendar year. Vault toilets, shade ramadas, picnic tables, and fire rings are located in the Quarry, Main Street, and Holmes Camp areas, which are located throughout the park (Dolinar 2006). Water is not available. A waste disposal

station is located on Ranger Station Road. Vehicle repair shops, fuel, telephones, groceries, a motel, and restaurants are available in the neighboring small town of Ocotillo Wells and along SR-78, where it borders the park (CDPR 2006).

### *Recreational Programs*

Self-guided tours of the OWSVRA are available. The Ranger Station at the entrance to the OWSVRA offers limited programs, with the focus on responsible OHV use. Occasionally, the American Safety Institute offers a safety certification course for quad vehicles; however, there is no fixed schedule for when the course is offered.

### *Management Practices*

A variety of practices can be used to manage recreation resources at the OWSVRA. The CDPR has a program that monitors natural, cultural, and recreational resources. State Parks also conducts visitor surveys, in cooperation with special interest groups, to inventory visitor satisfaction and needs. Using these inventories, State Park staff estimate how well they are meeting national, state, and local goals, and adjust actions accordingly.

### *Historical and Current Trends*

California is the most populated state in the nation, with a population of 34 million in 2000, and is projected to have a population of 46 million in 2020. California also has the greatest number of OHV enthusiasts in the nation, with 3.5 million participants, comprising 14.2 percent of all households. Southern California has the majority of the OHV owners, while it has less opportunity than other parts of the state.

Between 1980 and 2001, OHVs in California increased by 108 percent (USDI BLM 2003a). Between 1994 and 2001, street licensed four-wheel drive vehicles increased by 74 percent. Between 1980 and 2000, acres available for OHV recreation decreased by 48 percent. OHVs today are more powerful, and have better suspension and traction than their predecessor models, which has led to faster and more reliable vehicles. OHV types have also diversified. It is not unusual to see standard dune buggies, long travel dune buggies, motorcycles, all-terrain vehicles, all-terrain cycles, golf carts, Odysseys, four-wheel drive vehicles, and custom vehicles using off-road recreation areas in California. Quad runners and all-terrain vehicles can cost upwards of \$1,000, with larger and custom vehicles may cost \$50,000 or more depending on the amount of customization. OHV enthusiasts are also using more technological equipment as part of their recreational experience.

## **3.16 Special Areas**

### **3.16.1 Introduction**

The BLM manages lands that possess unique and important historical, anthropological, ecological, biological, geological, and paleontological features. These features include undisturbed wilderness tracts, critical habitat, natural environments, open spaces, scenic landscapes, historic locations, cultural landmarks, and paleontologically rich regions.

Special Management Areas (SMAs) are administered with the intent to preserve, protect, and evaluate these significant components of our national heritage. Most SMAs are designated either by an Act of Congress or by Presidential Proclamation, or are created under BLM administrative procedures.

The National Landscape Conservation System (NLCS) is the primary management framework for these specially designated lands. BLM created the NLCS in June 2000 to bring some of the agency's premier areas into a single system. The NLCS designations include National Monuments, National Conservation Areas, Designated Wilderness Areas and Wilderness Study Areas, National Scenic and Historic Trails, and Wild, Scenic, and Recreational Rivers (USDI BLM 2005).

Other special areas managed by the BLM outside of the NLCS framework include Areas of Critical Environmental Concern (ACECs), Research Natural Areas, National Natural Landmarks, National Recreation Trails, and a variety of other area designations.

While the proposed action area contains no SMAs, there is an ACEC and a Wilderness Area within the greater vicinity. There are currently no other areas designated under the NLCS or other special areas managed by the BLM within the vicinity of the proposed action area.

### **3.16.2 Wilderness Areas**

National Wilderness Areas, designated by Congress, are defined by the Wilderness Act of 1964 as places “where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain.” Designation is aimed at ensuring that these lands are preserved and protected in their natural condition. Wilderness Areas, which are generally 5,000 acres or more, offer outstanding opportunities for solitude or a primitive and unconfined type of recreation; such areas may also contain ecological, geological, or other features that have scientific, scenic, or historical value.

The Fish Creek Mountains Wilderness Area, designated by Congress as a Wilderness Area in 1994, is located approximately 7.5 miles south of the proposed action area (see Figure 1-3) and encompasses 21,425 acres of jagged ridges and peaks above twisting canyons and small valleys, with steep mountain slopes containing limestone outcrops. A portion of the ancient Lake Cahuilla shoreline is visible within this Wilderness Area.

### **3.16.3 Areas of Critical Environmental Concern**

The BLM uses the ACEC designation to highlight public land areas where special management attention is necessary to protect and prevent irreparable damage to important historical, cultural, and scenic values; fish or wildlife resources; or other natural systems or processes.

The ACEC designation may also be used to protect human life and safety from natural hazards. The BLM identifies, evaluates, and designates ACECs through its resource management planning process. Allowable management practices and uses, mitigation, and use limitations, if any, are described in the planning document.

Two miles south of the southernmost portion of the Truckhaven Geothermal Leasing Area is the San Sebastian Marsh/San Felipe Creek ACEC. Within its 7,800 acres is habitat for endangered species, including desert pupfish. This ACEC also contains habitat for rare, threatened, and endangered species, including Bell's vireo (*Vireo bellii*), yellowbilled cuckoo (*Coccyzus americanus*), Southwestern willow flycatcher (*Empidonax traillii extimus*), black rail (*Laterallus jamaicensis*), and arroyo toad (*Bufo microscaphus californicus*). Because of continual habitat degradation of the endangered unarmored three-spined stickleback (*Gasterosteus aculeatus williamsoni*), it is no longer found in the San Sebastian Marsh/San Felipe Creek ACEC. However, to promote the survival of this species in the region, the BLM has placed an experimental population of this species upstream, along the San Felipe Creek, near Scissor's Crossing, in San Diego County.

This area receives special management attention under the San Sebastian Marsh/San Felipe Creek ACEC Management Plan (USDI BLM 1986). This plan identifies objectives to protect, maintain, and enhance habitat for these species and specifies planned actions to manage surface uses, physical and timing protections, predevelopment and development measures, and monitoring to achieve these objectives.

## **3.17 Social and Economic Conditions**

### **3.17.1 Introduction/Regional Setting**

Most of the economic and social effects of developing geothermal resources would occur in the irrigated valleys about 30 miles to the south and 30 miles to the north of the Truckhaven area. The Imperial Valley lies south of the Salton Sea and the Coachella Valley, in Riverside County, which lies just north of the Salton Sea (see Figure 1-3). Both valleys feature intensive irrigated agriculture, producing livestock and a variety of winter crops. They share an early historical development directly related to the construction of canals that bring Colorado River water to the valleys.

Despite their shared history, the valleys have evolved into communities that, in many respects, are quite dissimilar. Beyond agriculture, the major component of the Imperial Valley's economy is a sizable government sector, including the Naval Air Facility El Centro and two California State Prisons. It has recently begun to develop businesses related to transit of materials moving into the *maquiladoras* in Mexicali and goods moving into the U.S. Over the last 30 years, the population has grown at a rapid rate and has become increasingly Hispanic. Today, it is 72 percent Hispanic. Per capita personal income is among the lowest in California, and the County has had very high unemployment for decades.

On the other hand, the socioeconomic character of the Coachella Valley has been heavily influenced by the emergence of the valley's many resorts and second home and retirement communities since the Second World War. The area's warm winter weather and dry desert air have made it a popular tourist, recreation, and retirement destination. There are over 100 golf courses in the valley. Per capita incomes in communities such as

Palm Springs and Palm Desert are among the highest in the U.S. While the population has grown rapidly in the last several decades, unemployment has remained generally low.

The immediate vicinity of the Truckhaven area is in sparsely populated desert and foothill terrain. The population exists primarily in three small seaside communities: Salton City, Salton Sea Beach, and Desert Shores. Salton City lies immediately north of the proposed action area.

### **3.17.2 Current Conditions and Trends**

#### **Social Environment**

The social environment of the project area is ethnically diverse, multicultural, and affected by the nearby border and urban interests. Although the project location is within Imperial County, with a population of approximately 160,000, the larger social environment includes the Imperial and Coachella Valleys that connect north to Riverside County and south to the Mexicali Valley and the U.S.-Mexico border. This larger social environment has a population of about 571,000. The majority of the population within Imperial County is Hispanic followed by whites, African-Americans, Asians, and Native Americans. As discussed in Section 3.9, there are notable Native American tribal lands and interests within the region, even though Native Americans represent a relatively small total of the population. The Mexican community of Mexicali south of El Centro has a population of nearly 900,000 and is a center of industry for Baja California. San Diego County to the west has a population of nearly 3 million who visit and recreate in the environs of the proposed project area. Similarly, to the north in Riverside County, Palm Springs is a population center that also supplies visitors and recreational users to the environs of proposed project area. This discussion highlights some of the characteristics of this social environment that can be identified using secondary source data. Such a characterization has limitations. The complexity of the social environment is suggested by secondary economic and demographic data, but the dynamics and specifics of lifestyles and beliefs require primary data collection. However, this overview is a starting point for assessing this social environment that can be supplemented as needed with primary data or additional secondary data.

Contemporary Imperial County occupies about 4,200 square miles in southeastern California. There are approximately 17 communities, including El Centro, the county seat and largest population center with more than 40,000 persons. Other noteworthy population centers include Brawley (~24,000), Calexico (~36,000), Imperial (~9,600), Calipatria (~7,900), and Holtville (~5,700). Smaller communities such as Westmorland (~2,450) and unincorporated communities such as Salton City, Desert Shores, Ocotillo, and Niland represent the smaller dispersed Imperial Valley communities. However, as noted, Mexicali to the south, San Diego to the west, Palm Springs to the north, and Yuma, Arizona, to the east represent larger urban population concentrations.

Lifestyles in this region are suggested by the communities' rural character, the region's agricultural history and economy, and the population's multicultural character. The county's history of agricultural development is reflected by the amount of farmland in production: the 2002 Census of Agriculture shows about 514,000 acres of agricultural

lands that produced products with a market value of about a billion dollars (\$1,043,279,000), the ninth highest value in the United States. The presence of the international border contributes to the multicultural character of local communities, especially with the presence of the Mexican border community of Mexicali. However, Native Americans, Filipinos, and other ethnic groups have a noteworthy historical presence in this region. Cultural activities associated with ethnic identity as well as rodeos, cattle call parades, hunting, fishing, other outdoor activities contribute to a rural community lifestyle influenced by ethnic diversity.

The ample natural resources of this region, such as the Salton Sea, the Imperial Sand Dunes Recreation Area, the OWSVRA and a varied desert and mountain landscape, also attract visitors from nearby counties and states. The Imperial Sand Dunes Recreation Area and environs are recognized as one of the premiere OHV locations in this region. Similarly, the Salton Sea attracts birdwatchers as well as boating and fishing enthusiasts. The irrigation canals that bring water for the agricultural fields are also a recreational fishing resource for local residents as well as visitors. Such natural and human-made resources have resulted in non-local communities of interest that value the region's landscapes and recreational amenities.

The region's social environment is comprised of communities of place and communities of interest. The local communities of place are largely rural and have lifestyles and values based in the agricultural and multicultural character of the region. More distant urban communities such as San Diego are sources of recreational users and visitors who value the rural landscape of this region. The specifics of the region's demography and economy are detailed in the following section. These demographic and economic data offer a basis to assess the potential socioeconomic influences of the proposed geothermal development.

### **Demographics**

As described above, the areas of most likely socioeconomic impact are the Imperial and Coachella Valleys. Table 3-8 identifies the population of these areas. For this analysis, demographic data for all Imperial County are used as representative of the Imperial Valley, as over 90 percent of the county population resides in the valley. For the Coachella Valley, however, demographic data were disaggregated from Riverside County data. The Coachella Valley makes up only a small part of Riverside County's population. Together, Imperial County and the Coachella Valley are referenced as the socioeconomic impact area. Riverside County and California data are included in the table for reference.

Both Imperial County and the Coachella Valley have seen rapid population growth in the last several decades. Since 1990, Imperial County has grown at a rate greater than California as a whole. The Coachella Valley has outpaced the State's growth rate and that of Imperial County. For the last quarter century, the population of the socioeconomic impact area has grown at a rate about three times faster than the State average.

**Table 3-8 Population and Population Change**

Area	Year			Percent Change	
	1990	2000	2005	1990–2000	2000–2005
Imperial County	109,303	142,361	161,621	30.2	13.5
Coachella Valley	230,865	318,475	409,240	37.9	28.5
<b>Imperial County and Coachella Valley SIA</b>	340,168	460,836	570,861	3.5	23.9
Riverside County	1,170,413	1,545,387	1,888,311	32.0	22.2
California	29,758,213	33,873,086	36,728,196	13.8	8.4
<b>Principal Communities in Imperial County</b>					
Brawley	18,923	22,052	24,014	16.5	8.9
Calexico	18,633	27,109	36,229	45.5	33.6
El Centro	31,405	38,025	40,982	21.1	7.8
<b>Principal Communities in Coachella Valley</b>					
Cathedral City	30,085	42,647	50,957	41.8	19.5
Indio	36,850	49,116	66,539	33.3	35.5
Palm Desert	23,252	41,155	49,595	77.0	20.5
Palm Springs	40,144	42,805	46,000	6.6	7.5
<b>Projected Population Growth</b>					
Area	Year			Percent Change	
	2010	2020	2030	2010–2020	2020–2030
Imperial County	178,201	214,386	254,989	20.3	18.9
Coachella Valley	456,279	574,618	693,861	25.9	20.8
<b>Imperial County and Coachella Valley SIA Total</b>	640,743	802,346	970,506	25.2	21.0
Riverside County	2,165,148	2,675,648	3,180,411	23.6	18.9
California	39,246,767	43,851,741	48,110,671	11.7	9.7

Source: USCB 2005.

Key: SIA = Socioeconomic Impact Area.

Also shown in Table 3-8 are the principal incorporated communities in the vicinity of the Truckhaven area. El Centro and Brawley have not experienced the explosive growth that Calexico has, and Calexico may soon be the most populous city in Imperial County. Calexico is in some respects part of the greater Mexicali metropolitan area. Mexicali, the capital of Baja California, lies across the international border from Calexico and has a population over 800,000.

The communities of the Coachella Valley, with the exception of Palm Springs, are growing rapidly. Palm Springs, at the western end of the valley, was the first community

to see resort development and has been largely built out. Cathedral City and Indio are in the southeastern part of the valley and are now experiencing new residential development.

Imperial County west of the Salton Sea, where the proposed action area is located, is sparsely populated. Its 2000 census count was 7,339 people. Three unincorporated communities are located on the western shore of the Salton Sea: Salton City, immediately north of the proposed leased tracts; Salton Sea Beach, north of Salton City; and Desert Shores, near the Riverside County line. These three communities have a combined population of 2,200 and, together with the population of Centinela State Prison (located in the same census tract; about 4,400 occupants), represent over 90 percent of the population of western Imperial County. The remaining 700 people are scattered throughout the area's 979 square miles, with less than one person per square mile.

The population of Imperial County described in the 2000 Census was 72.3 percent Hispanic, a percentage that has been increasing rapidly for decades. The Coachella Valley population was 46.4 percent Hispanic in 2000. In both areas, the Hispanic population is well above the 32.4 percent State average. The census indicated that Imperial County residents had a median age of 33.8 years, slightly higher than the State average, and that just over 10 percent had completed college. The median age of Coachella Valley residents was 37.3 years, above the State average of 33.3 years. Almost 20 percent had completed college, slightly above the State average.

Since the 1990s, the population growth rate in the socioeconomic impact area has been higher than the average growth rate of the State. This very high rate of growth is expected to continue into the foreseeable future. Table 3-8 identifies projected populations to the year 2030.

### **Employment and Income**

Imperial County's economy is dominated by two sectors: agriculture and government. As Table 3-9 shows, the government sector's employment share is 24.9 percent in the County. This means that one in every four of those employed in Imperial County works for a Federal, State, or local government agency. The government sector tends to be larger than average in rural counties, but Imperial County's 25 percent is almost twice the California state average of 13.2 percent. Contributing to the size of the government sector are two state prisons – Centinela and Calipatria, and a major military installation – Naval Air Facility El Centro.

The largest private economic sector is agriculture. The farm sector, which includes direct farm employment, accounts for 8.3 percent of the total. The agriculture, forestry and fishing sector, which includes agricultural support and service employment, accounts for another 11.9 percent. Together, employment in the two agriculture sectors is 20.2 percent of the County's total employment. This is expected as the valley's irrigated agriculture was the historical basis for the area's original settlement. The Imperial Valley remains today one of the most important agricultural regions in the State and the nation. Its 514,000 acres produce cattle and sheep, livestock feed, and vegetables. Its 2002

**Table 3-9 Employment by Industrial Sector**

Sector	Imperial County		Coachella Valley		California
	Employment	Sector Share (percent)	Employment*	Sector Share (percent)	Sector Share (percent)
<b>Total</b>	<b>66,274</b>	<b>100.0</b>	<b>127,788</b>	<b>100</b>	<b>100</b>
Farm	5,491	8.3	2,000	1.6	1.5
Nonfarm	60,783	91.7	125,788	98.4	98.5
Private	44,280	66.8	109,873	86.0	85.3
Agriculture, forestry, fishing, related*	7,872	11.9	3,703	2.9	1.2
Mining*	500	0.8	10	0.0	0.2
Utilities	453	0.7	389	0.3	0.3
Construction	2,329	3.5	15,104	11.8	5.8
Manufacturing	2,518	3.8	2,903	2.3	8.1
Wholesale trade	2,022	3.1	2,190	1.7	3.7
Retail trade	8,482	12.8	17,591	13.8	10.3
Transportation, warehousing	2,194	3.3	1,966	1.5	2.8
Information	466	0.7	2,320	1.8	2.8
Finance and insurance	1,240	1.9	2,510	2.0	4.6
Real estate; rental; leasing	1,573	2.4	2,784	2.2	4.7
Professional, technical services	1,452	2.2	3,285	2.6	7.9
Management of companies	421	0.6	450	0.4	1.2
Administrative; waste services	1,881	2.8	8,094	6.3	6.4
Educational services	487	0.7	536	0.4	1.9
Health care; social assistance	3,433	5.2	12,470	9.8	8.4
Arts, entertainment, recreation	362	0.5	5,706	4.5	2.5
Accommodation, food services	3,075	4.6	23,744	18.6	6.6
Other services	3,520	5.3	4,118	3.2	6.0
Government	16,503	24.9	15,915	12.5	13.2
Federal, civilian	1,965	3.0	2,000	1.6	1.2
Military	541	0.8	N/A	N/A	1.2
State and local government	13,997	21.1	13,915	10.9	10.9
State government	2,855	4.3	37	0.0	2.4
Local government	11,142	16.8	13,878	10.9	8.5

Sources: USBEA 2004; CDC 2005.

Key: \* = estimated; N/A = not applicable.

production was valued at just over one billion dollars, making it the eighth largest producing county in California and the ninth largest in the entire U.S. Economic sectors that are notably smaller than average in Imperial County are manufacturing and professional and technical services.

The economic structure of the Coachella Valley is quite different. Although the southeastern part of the valley, just north of the Salton Sea, has intensive agricultural production similar to the Imperial Valley's, the scale is much reduced. Coachella Valley's 70,000 acres in production represent not quite 15 percent of the Imperial Valley's. Coachella's agricultural sector is estimated to represent 4.5 percent of employment, far less than in Imperial County.

Economic sectors that predominate are accommodation, food services (18.6 percent), retail trade (13.8 percent), and construction (11.8 percent). Together these three sectors account for 44.2 percent of the Coachella Valley's employment. The size of these sectors reflects the number of resorts, recreation activities, and the ongoing construction of second homes and retirement communities in the northwestern part of the valley.

Unemployment in Imperial County has historically been very high, averaging around 16 percent between 2001 and 2005; in 1996, the rate reached 29.9 percent (EPS 2007). These levels are three and even four times the state average. Unemployment data for the Coachella Valley are not readily available, but rates for Riverside County tend to be similar to those of California as a whole.

Table 3-10 shows personal income in Imperial and Riverside Counties in 1995, 2000, and 2004. Imperial County has had historically low per capita personal income. As the table indicates, County per capita income is well below the average for the rest of the U.S. and ranks toward the bottom of California's 58 counties.

Income data for sub-County units such as the Coachella Valley are not readily available, so data for the entire county are listed in the table; however, it is well understood that per capita income in communities like Palm Springs and Palm Desert is very high and that, even moderated by lower incomes in the agricultural producing part of the valley, per capita income in Coachella Valley is well above the U.S. average.

### **Geothermal Development**

Geothermal electrical production is part of the utilities sector, which has a relatively small share of Imperial County's total employment (see Table 3-9). The 16 geothermal power plants located in the County, together with subcontractors, may support around 600 jobs. However, the industry supplies utilities with an important regional source of electric power, generating over 500 MW of electricity. The industry is also an important revenue source to jurisdictions within Imperial County, representing about 10 percent of the County's property tax base. Although several geothermal greenhouse operations are located in the Coachella Valley, it has no geothermal power plants.

**Table 3-10 Personal Income, Imperial and Riverside Counties**

	1995	2000	2004
<b>Imperial County</b>			
Total personal income (000s)	\$2,234,651	\$2,530,315	\$3,320,185
Per capita income	\$16,313	\$17,752	\$21,794
Percent of U.S. per capita income	71	59	66
State rank	50	56	55
<b>Riverside County</b>			
Total personal income (000s)	\$26,210,618	\$37,014,951	\$49,443,185
Per capita income	\$19,090	\$23,728	\$26,448
Percent of U.S. per capita income	83	80	80
State rank	32	34	36
<b>California</b>			
Total personal income (000s)	\$785,805,583	\$1,103,841,912	\$1,262,306,032
Per capita income	\$24,161	\$32,463	\$35,219
Percent of U.S. per capita income	105	109	107

Source: USBEA 2004.

## Recreation

Imperial County has some significant recreational features, notably the Salton Sea and the Imperial Sand Dunes Recreation Area. Offering boating, fishing, bird viewing, and camping, the Salton Sea had visitor use that was said to rival that of Yosemite until the mid-1980s. However, fish and bird die-offs, an increase in unpleasant odors, and concerns about pollution and water quality have produced a decline in recreational use in the last 20 years. The Imperial Sand Dunes Recreation Area is considered one of the premier sand dune OHV recreation areas in the United States. Estimated visitation during the 1999–2000 fiscal year was almost 900,000 people. Peaking during holiday seasons, this use produces seasonal spikes in local retail sales of groceries and fuel and in restaurant and lodging use.

The Truckhaven lease area is itself the site of another important OHV recreation area, the OWSVRA, which receives up to 1.9 million visitors a year – a number that is increasing annually. Comments received from individuals and OHV group representatives during scoping and on the Draft EIS for this project indicated that any potential closures to OHV recreation as part of the leasing program would have a detrimental impact on recreationists.

## Public Revenue

The proposed action area is located in unincorporated Imperial County, and the County and jurisdictions within the County would be the principal recipients of revenues generated by geothermal development in the Truckhaven lease area. The geothermal industry is already an important revenue source for jurisdictions within Imperial County. The industry's 2005–2006 assessed valuation of \$809 million represents 9.7 percent of the total County's assessed valuation of \$8.3 billion. Estimated industry property taxes are \$95.5 million (Buckner 2006). The County government is the largest public entity, with total 2003–2004 revenues of \$193.6 million. Other local sources of public revenue are sales and use taxes, licenses, fees, and charges for services. Riverside County and the Coachella Valley are unlikely to receive measurable revenue from the project, although construction and operation of the plant may produce some sales tax receipts.

### 3.17.3 Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (Federal Register 1994) requires Federal agencies to achieve environmental justice by identifying and addressing disproportionately high and adverse human health and environmental effects, including the interrelated socioeconomic effects of their programs, policies, and activities, on minority populations and low-income populations in the United States. Such impacts are to be avoided or minimized to the extent feasible.

*Minorities* are defined as individuals who are members of one or of the following population groups: Hispanic, African-American, American Indian or Alaskan Native, and Asian or Pacific Islander. *Minority populations* are those where the identified population in the affected area exceeds 50 percent or the minority population in the affected area is meaningfully greater than the minority population in the general population. *Low-income populations* are those that exceed the poverty threshold (CEQ 1997).

Table 3-11 identifies the ethnicity and racial components and poverty levels in places that could be affected by geothermal development of the proposed Truckhaven leases. Data are described for Riverside and Imperial Counties, and for regions within each county. As described above, Riverside County is quite large, and the portion of the County affected would likely be limited to the Coachella Valley. All of Imperial County may be affected, but the proposed action area lies just west of the Salton Sea; the part of the County west and southwest of the Salton Sea (identified as the Vicinity Impact Area in Table 3-11) is more likely to be directly affected.

**Table 3-11 Race/Ethnicity and Poverty Level Truckhaven Area**

Area	Race/Ethnicity, Percent of Population, 2000					Percent Below Poverty Level, 2003
	White	Hispanic	African-American	American Indian	Asian-Pacific	
Imperial County	20.2	72.3	3.8	1.3	1.9	19.8
Coachella Valley	47.8	46.4	2.0	1.9*	1.9*	10.0*
Vicinity Impact Area <sup>a</sup>	34.8	44.0	20.0	0.3	0.2	NA
Riverside County	51.3	36.4	6.1	0.7	3.9	12.3
California	47.1	32.6	6.5	0.6	11.3	13.8

Sources: CDF 2004; USCB 2005.

Key: \* = estimated

Note:

<sup>a</sup> Census Tracts 123.01 and 123.02.

As previously discussed, the population of Imperial County is heavily Hispanic, estimated at 72.3 percent in the 2000 Census. The population percentages of African-American and Asian Pacific communities are small relative to State averages. Although twice the State average, the percentage of American Indians is also small. Within the Coachella Valley, the Hispanic population makes up about 46 percent of the population, less than in Imperial County but above the State average. As in Imperial County, African-American and Asian-Pacific populations represent less of the population than the State average. American Indians are estimated to represent about 2 percent of the population.

As noted previously, Native Americans have a long inhabited the region. Contemporary tribal groups with a potential interest in the project area include the Torres Martinez Desert Cahuilla to the north of the proposed action area and at least 14 other tribes identified by the BLM. Some Southern California tribal entities have indicated initial interest in the proposed project. Specifically, a 2005 letter from the San Pasqual Band of Mission Indians indicates the potential for significant cultural effects because the Truckhaven tracts are perceived to be ancestral lands. Consultation between the BLM and tribal interests should indicate further cultural interests in the proposed project area. The potential exists for impacts to tribal entities based on cultural connections or interests in the project area.

The percent of the Imperial County population with personal incomes below the poverty level is higher than the State average, due to historically very low per capita income and the high unemployment rate in the County.

### 3.18 Transportation

This discussion addresses the existing vehicular traffic in and around the Truckhaven Geothermal Leasing Area. The scope of the analysis is limited to major public roads that provide access to the proposed action area.

### 3.18.1 Existing Access

Interstate 8 is the only freeway providing access in the vicinity of the Truckhaven Geothermal Leasing Area. Arterial branch SR-78 runs east to west south of the proposed action area. From the east, it turns generally north/south out of Westmorland and splits from SR-86 at the Border Patrol checkpoint (south of S-22) and continues west, south of the project area, in San Diego County. SR-86 continues north through the northeastern corner of the proposed action area and links with County Highway S-22 (Borrego Salton Seaway) in Salton City before continuing north and eventually merges into the SR-111 Expressway, which links to Interstate 10. S-22 is an east-west County road providing access to the northern end of the proposed action area.

### 3.18.2 Existing Traffic Volumes

Table 3-12 shows 2005 traffic volumes on major access roadways in the vicinity of the Truckhaven area. The heaviest traveled segment of roadway is on SR-86 north of its intersection with SR-78. It has an average annual daily traffic volume of 12,100 vehicles and a peak-hour volume of 1,050 vehicles. The 2000 Highway Capacity Manual published by the Transportation Research Board establishes a system whereby highway facilities are rated for their ability to process traffic volumes. The terminology *level of service* (LOS) is used to provide a *qualitative* evaluation based on certain *quantitative* calculations, which are related to empirical values.

**Table 3-12 2005 Traffic Volumes**

Route	Segment	Peak Hour Volume	Annual Average Daily Traffic <sup>a</sup>	Level of Service
SR-78	Imperial County to Junction SR-86	180	900	D
SR-86	Junction SR-78 to Air Park Drive	1,050	10,400 <sup>b</sup>	D
S-22	Junction SR-86 and San Diego County Line	Not applicable <sup>c</sup>	16,440 <sup>c</sup>	C

Sources: Caltrans 2005; Imperial County 2003.

Notes:

<sup>a</sup>The average number of vehicles traveling on a route over a 24-hour period.

<sup>b</sup>Peak hour volume has not been calculated for this particular road segment.

Table 3-12 indicates that the LOS on SR-78 and SR-86 is D, based on the Highway Capacity Manual LOS chart for a two-lane highway on rolling terrain and assuming that no passing zones comprise 80 percent of the routes. LOS D is a zone that approaches unstable flow, with tolerable operating speeds; however, driving speed is considerably affected by changes in operating conditions. The LOS on S-22 is C, the minimum acceptable standard for Imperial County-maintained roadways. LOS C indicates operations where a significant number of vehicles are stopping with some backup and light congestion. S-22, a County-administered road, is subject to different operating criteria than SR-86 and SR-78, which are State-maintained highways.

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