

TABLE OF CONTENTS

5.	Environmental Information	5.8-1
5.8	Socioeconomics/Environmental Justice.....	5.8-1
5.8.1	Affected Environment.....	5.8-3
5.8.1.1	Economy: Labor Force, Employment, and Income ..	5.8-3
5.8.1.2	Population, Housing, and Demographics.....	5.8-9
5.8.1.3	Public Services and Utilities	5.8-12
5.8.1.4	Public Finance and Fiscal Issues.....	5.8-14
5.8.2	Environmental Consequences.....	5.8-15
5.8.3	Cumulative Impacts Analyses.....	5.8-27
5.8.4	Mitigation Measures	5.8-28
5.8.5	Laws, Ordinances, Regulations, and Standards	5.8-28
5.8.6	Involved Agencies and Agency Contacts	5.8-29
5.8.7	Permits Required and Permit Schedule.....	5.8-29
5.8.8	References.....	5.8-30

Tables

Table 5.8-1	Kern County Labor Force, Employment, and Industry
Table 5.8-2	Current and Projected Unemployment Rates
Table 5.8-3	Los Angeles County Labor Force, Employment, and Industry
Table 5.8-4	Population Trends and Projections
Table 5.8-5	Regional Housing Characteristics, January 2010
Table 5.8-6	Race and Poverty Data in 2010
Table 5.8-7	Hospitals in the Project Vicinity
Table 5.8-8	School Enrollment Trends
Table 5.8-9	Base Factor Property Tax Disbursement, Fiscal Year 2011-2012
Table 5.8-10	Assessors Tax Numbers 159-040-18-00-2 and 159-040-16-00-6 Property Tax Allocation, Fiscal Year 2010-2011
Table 5.8-11	Site Preparation and Construction Employment by Trade Estimated Monthly Construction Workforce
Table 5.8-12	Proposed Developments within a 6-Mile Radius of the Project Site
Table 5.8-13	Summary of LORS—Socioeconomics/Environmental Justice
Table 5.8-14	Involved Agencies and Contacts

Figures

Figure 5.8-1	Socioeconomic Study Area
Figure 5.8-2	Census Tracts within a 6-Mile Radius of the Project Site

TABLE OF CONTENTS

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5.8 SOCIOECONOMICS/ENVIRONMENTAL JUSTICE

Hydrogen Energy California LLC (HECA LLC) is proposing an Integrated Gasification Combined Cycle (IGCC) polygeneration project (HECA or Project). The Project will gasify a fuel blend of 75 percent coal and 25 percent petroleum coke (petcoke) to produce synthesis gas (syngas). Syngas produced via gasification will be purified to hydrogen-rich fuel, and used to generate a nominal 300 megawatts (MW) of low-carbon baseload electricity in a Combined Cycle Power Block, low-carbon nitrogen-based products in an integrated Manufacturing Complex, and carbon dioxide (CO₂) for use in enhanced oil recovery (EOR). CO₂ from HECA will be transported by pipeline for use in EOR in the adjacent Elk Hills Oil Field (EHOF), which is owned and operated by Occidental of Elk Hills, Inc. (OEHI). The EOR process results in sequestration (storage) of the CO₂.

Terms used throughout this section are defined as follows:

- **Project or HECA.** The HECA IGCC electrical generation facility, low-carbon nitrogen-based products Manufacturing Complex, and associated equipment and processes, including its linear facilities.
- **Project Site or HECA Project Site.** The 453-acre parcel of land on which the HECA IGCC electrical generation facility, low-carbon nitrogen-based products Manufacturing Complex, and associated equipment and processes (excluding off-site portions of linear facilities), will be located.
- **OEHI Project.** The use of CO₂ for EOR at the EHOF and resulting sequestration, including the CO₂ pipeline, EOR processing facility, and associated equipment.
- **OEHI Project Site.** The portion of land within the EHOF on which the OEHI Project will be located and where the CO₂ produced by HECA will be used for EOR and resulting sequestration.
- **Controlled Area.** The 653 acres of land adjacent to the Project Site over which HECA will control access and future land uses.

This introduction provides brief descriptions of both the Project and the OEHI Project. Additional HECA Project description details are provided in Section 2.0. Additional OEHI Project description details are provided in Appendix A of this Application for Certification (AFC) Amendment.

HECA Project Linear Facilities

The HECA Project includes the following linear facilities, which extend off the Project Site (see Figure 2-7, Project Location Map):

- **Electrical transmission line.** An approximately 2-mile-long electrical transmission line will interconnect the Project to a future Pacific Gas and Electric Company (PG&E) switching station east of the Project Site.

- **Natural gas supply pipeline.** An approximately 13-mile-long natural gas interconnection will be made with PG&E natural gas pipelines located north of the Project Site.
- **Water supply pipelines and wells.** An approximately 15-mile-long process water supply line and up to five new groundwater wells will be installed by the Buena Vista Water Storage District (BVWSD) to supply brackish groundwater from northwest of the Project Site. An approximately 1-mile-long water supply line from the West Kern Water District (WKWD) east of the Project Site will provide potable water.
- **Coal transportation.** HECA is considering two alternatives for transporting coal to the Project Site:
 - **Alternative 1, rail transportation.** An approximately 5-mile-long new industrial railroad spur that will connect the Project Site to the existing San Joaquin Valley Railroad (SJVRR) Buttonwillow railroad line, north of the Project Site. This railroad spur will also be used to transport some HECA products to market.
 - **Alternative 2, truck transportation.** An approximately 27-mile-long truck transport route via existing roads from an existing coal transloading facility northeast of the Project Site. This alternative was presented in the 2009 Revised AFC.

OEHI Project

OEHI will be installing the CO₂ pipeline from the Project Site to the EHOFF, as well as installing the EOR Processing Facility, including any associated wells and pipelines needed in the EHOFF for CO₂ EOR and sequestration. The following is a brief description of the OEHI Project, which is described in more detail in Appendix A of this AFC Amendment:

- **CO₂ EOR Processing Facility.** The CO₂ EOR Processing Facility and 13 satellites are expected to occupy approximately 136 acres within the EHOFF. The facility will use 720 producing and injection wells: 570 existing wells and 150 new well installations. Approximately 652 miles of new pipeline will also be installed in the EHOFF.
- **CO₂ pipeline.** An approximately 3-mile-long CO₂ pipeline will transfer the CO₂ from the HECA Project Site south to the OEHI CO₂ EOR Processing Facility.

This section describes potential impacts to the social and economic environment in the vicinity and region resulting from construction and operation of the Project. The section presents estimated impacts to population, housing, employment, public services (fire protection and emergency services, hospitals, law enforcement, and schools), utilities, tax revenue, and economic activity attributable to the Project. The section also includes a discussion of compliance with permits and laws, ordinances, regulations, and standards (LORS) relevant to socioeconomics.

Socioeconomic information related specifically to the OEHI Project is contained in the following sections of Appendix A to this AFC Amendment:

- Section 4.12: Population and Housing
- Section 4.13: Public Services
- Section 4.14: Recreation
- Section 4.16: Utilities and Service Systems
- Section 4.17: Environmental Justice

5.8.1 Affected Environment

This subsection describes existing economic and demographic conditions at varying geographic levels. First, the section presents information for Kern County and the City of Bakersfield, and for Los Angeles County, which borders Kern County to the south. Information for Los Angeles County is presented because while it is expected that the majority of the construction labor force will be drawn from Kern County, it is also possible that some portion of the labor force will be drawn from Los Angeles County. Next, the section presents information for the Project Site and the nearby unincorporated communities of Tupman and Buttonwillow. In addition, this section also presents information for the existing coal storage/transfer facility, which is located in Wasco. Figure 5.8-1, Socioeconomic Study Area, shows the socioeconomic study area.

5.8.1.1 Economy: Labor Force, Employment, and Income

Kern County

Primary components of the Kern County economy are value-added agriculture; transportation, logistics and warehousing; energy and chemicals; aerospace and defense; business and professional services; and tourism, recreation, and entertainment. Defense and space activities include: Edwards Air Force Base, China Lake Naval Weapons Center, the National Aeronautics and Space Administration-Dryden Flight Research Center, and the East Kern (Mojave) Airport District. Edwards Air Force Base and China Lake Naval Weapons Center are two of Kern County's major employers, joined in that category by Kern County government and Giumarra Farms (Greater Bakersfield Chamber of Commerce, 2012). Kern County is the largest oil-producing county in California, containing approximately 70 percent of California's oil reserves (Kern County Assessor's Office, 2012). Kern County ranked third among California counties, as well as among U.S. counties, in terms of the value of agricultural production in 2007 (USDA, 2012).

In 2010, the Kern County civilian labor force of 368,500 represented 2.0 percent of the California civilian labor force of 18,541,318. The Kern County civilian labor force increased by 2.0 percent, annually, between 2000 and 2010, and 1.3 percent, annually between 1990 and 2000. From 2000 to 2010, the Kern County civilian labor force grew faster than the civilian labor force in California by 2 percentage points (Table 5.8-1, Kern County Labor Force, Employment, and Industry).

The industries with the highest employment in Kern County in 2010 were government; trade, transportation, and utilities; and farming. Kern County construction employment in 2010 was approximately 12,200, representing approximately 5 percent of total industry employment (Table 5.8-1, Kern County Labor Force, Employment, and Industry) (CEDD, 2010a).

From 2000 to 2010, the fastest-growing industries were natural resources and mining; manufacturing; education and health services; leisure and hospitality; and government. Notably, farming employment declined 3.0 percent annually during the period from 2000 to 2010 (CEDD 2010a; CEDD, 2010b).

Kern County's unemployment rate decreased from 10.9 to 8.2 percent during the period from 1990 to 2000, and increased from 8.2 to 15.9 percent during the period from 2000 to 2010. Compared to California, the Kern County unemployment rate was 15.9, 3.5 percentage points higher than the California rate of 12.4 percent in 2010 (Table 5.8-1, Kern County Labor Force, Employment, and Industry) (CEDD, 2010a). U.S. unemployment rates increased during the recent nationwide economic recession, but are expected to decrease in the near future as the economy improves. The projected unemployment rates for Kern County and California are expected to reduce to 7.7 percent and 5.4 percent, respectively, in 2020 as illustrated in Table 5.8-2, Current and Projected Unemployment Rates (Caltrans, 2011).

Between 2008 and 2018, employment in Kern County is expected to grow approximately 1.35 percent annually, and for the same time period, the state of California is expected to grow at approximately 0.97 percent annually. Kern County industries that are anticipated to grow the most during the period 2008 to 2018 are education services, health care, and social assistance; professional and business services; leisure and hospitality; and trade, transportation, and utilities. Education services, healthcare, and social assistance employment is anticipated to grow by 40 percent, with an average annual rate of 4.04 percent (CEDD, 2010c).

The value of agricultural production in 2007 in Kern County was \$4.1 billion; 75 percent of this was in crop sales. Kern County ranked third among California counties, as well as among U.S. counties, in terms of the value of agricultural production in 2007 (USDA, 2012).

In 2010, wage and salary disbursements in Kern County were \$12.5 billion. The average wage per job that year was \$44,223, compared to \$54,399 in California on average (BEA, 2010). Total personal income in 2009 in Kern County was approximately \$23.9 billion. Per capita income in 2009 was \$29,630 in Kern County and \$42,395 in the state of California (BEA, 2009). Taxable sales in Kern County in 2010 were \$2.7 billion, increasing 10.5 percent from year to year (CBOE, 2010).

Kern County residents commuted approximately 23 minutes to work, on average, in 2010 (City Data, 2011). Approximately 94 percent of Kern County residents work in Kern County and approximately 3 percent work in Los Angeles County (U.S. Census Bureau, 2012a).

In 2007, 16,556 business establishments existed in Kern County. Approximately 59 percent of the establishments were services firms. Over half of the businesses had between one and four employees, and 95 percent of the businesses had fewer than 50 employees (CDOF, 2007).

Kern County adopted the *County of Kern Economic Development Strategy* on September 2, 2009 (updated 2009, adopted 2010). The strategy includes five initiatives: (1) cluster network development strategies, (2) human resources and skills development, (3) land use and infrastructure planning, (4) tourism marketing and branding Kern County, and (5) financing entrepreneurship and innovation. Kern County plans to strengthen its industry clusters, which

5.8 Socioeconomics/Environmental Justice

include value-added agriculture; transportation, logistics, and warehousing; energy and chemicals; aerospace and defense; business and professional services; tourism, recreation, and entertainment (KC, 2010a).

Kern County attracts new residents and businesses through its land availability, lower costs of living, shorter commute times, and lower costs of doing business when compared to areas west of Kern County near the coast. *The Path to Sustainable Prosperity: Kern County's Economic Development Strategy* (KC, 2012b) summarizes the Kern County economic development plan and states that Kern County faces the following challenges related to economic development:

- Balancing demand for residential development with commercial and industrial uses
- Cyclical and uncertain nature of the oil and aerospace industry
- Seasonal nature of the agricultural industry
- Modest growth in new business
- Limited educational and skills attainment by the Kern County labor force
- Out-migration of young people
- Air quality issues in Kern County
- High percentage of low-to-moderate income residents

City of Bakersfield

The City of Bakersfield is located in central Kern County, equidistant from Fresno, 110 miles to the north, and Los Angeles, 110 miles to the south. Bakersfield is the county seat, and the central commercial and business location for Kern County, covering 135 square miles, beginning approximately 7 miles east of the Project Site. Top employers in Bakersfield include government entities such as Edwards Air Force Base, Kern County, and China Lake Naval Weapons Center; and private entities such as Giumarra Farms, Grimmway Farms, and Wm. Bolthouse Farms, Inc. Meadows Field Airport is operated by Kern County, and is located 7 miles north of downtown Bakersfield. Meadows Field Airport serves approximately 700,000 people in the San Joaquin Valley (Meadows Field, 2012).

In 2010, 64 percent of the over-16 labor force in Bakersfield is employed, compared to 59 percent in Kern County and 58 percent in California. The unemployment rate in Bakersfield in 2010 was 16.4 percent, which was higher than the rate for Kern County (15.9 percent) and higher than the statewide rate of 12.4 percent (U.S. Census Bureau, 2010a; U.S. Census Bureau, 2009a; City of Bakersfield, 2010; Caltrans 2011). The relatively high unemployment rate in Bakersfield, compared to some other areas in the state and county, is in part due to the cyclical (oil production and aerospace) and seasonal (agricultural) nature of employment, and is a challenge for the area's economy.

Occupations in Bakersfield with the most employees in 2010 were management, business, science, and arts occupations (33 percent); sales and office occupations (25 percent); and service occupations (19 percent) (ACS, 2010). Industries with the highest employment levels were trade, transportation, and utilities (15 percent); local government (15 percent); educational and health services (10 percent); and retail trade (10 percent) (U.S. Census Bureau, 2010c).

Bakersfield median household income in 2010 was \$53,038, compared to \$45,524 in Kern County, and \$58,931 in California (U.S. Census Bureau, 2010a). The percentage of Bakersfield individuals living below the poverty level in 2010 was 19 percent, compared to 21 percent in Kern County and 14 percent in California (U.S. Census Bureau, 2010d).

Approximately 77 percent of Bakersfield residents' work commute is less than 30 minutes, while another 7 percent have a work commute of 60 minutes or more (U.S. Census Bureau, 2010b). The mean travel time to work for Bakersfield residents in 2009 was 22.2 minutes, compared to 27 minutes for California residents (City Data, 2011).

Taxable sales in Bakersfield in 2010 were \$1,155,082,000, \$886,545,000 of which occurred at retail sales establishments (CBOE, 2010).

The housing market in Bakersfield experienced a recent downturn, similar to many other markets across the United States. From 2002 to 2005, when prices in areas such as Los Angeles, San Francisco, and San Diego increased substantially, buyers recognized the affordability of inland cities such as Fresno, Bakersfield, and Modesto. Sales in the inland cities, including Bakersfield, increased. Beginning in 2006, the incidence of foreclosure increased in Bakersfield, similar to the rest of California and the United States. In September 2006, housing supply and home sale time-frames had increased substantially. The bottom of the market was April 2009, when the median sale price was approximately \$115,000. The housing market has continued to fluctuate since that time, with the price of an existing single-family home in the Bakersfield area being \$119,975 in February 2012, which is down 7.7 percent from January and down 4 percent from a year earlier (Bakersfield.com, 2012).

The 2011 Comprehensive Annual Financial Report for the City of Bakersfield reports that between 2010 and 2011, Bakersfield experienced decreases in property tax revenues, and improvements in sales tax revenue, compared to 2008–2010. Property tax is anticipated to decrease again in 2011–2012, and sales tax projections remain uncertain (City of Bakersfield, 2011).

Los Angeles County

Primary components of the Los Angeles County economy are trade, transportation, and utilities; professional and business services; government; education and health services; and leisure and hospitality. In 2007, 395,181 business establishments existed in Los Angeles County. Approximately 70 percent of the establishments were services firms. Over half of the businesses had between one and four employees (CDOF, 2012). Major employers in Los Angeles County include the following companies (CEDD, 2012b).

- All Nations Church
- American Honda Motor Co Inc.
- California Institute of Technology
- California State University-Northridge
- Columbia Broadcasting System Television City
- Cedars-Sinai Medical Center
- Century Plaza Towers

5.8 Socioeconomics/Environmental Justice

- Columbia Tri Star Motion
- Dispensary
- Long Beach Memorial Medical Center
- Los Angeles County Sheriff
- Los Angeles Police Department
- Martin Luther King Jr. Multi-Service Ambulatory Care Center
- Nestle USA
- Providence Health-San Fernando
- Providence Health-Southern California
- Santa Monica College
- Six Flags Magic Mountain Inc.
- Sony Pictures Entertainment
- Torrance Memorial Medical Center
- University of California, Los Angeles
- University of California, Los Angeles Health System
- Walt Disney Company
- Woodlands Hills Medical Center
- Worldwide Corporate Housing

In 2010, the Los Angeles County labor force of 4.9 million represented over one quarter of the California labor force of 18.3 million. The Los Angeles County labor force increased by 0.3 percent (annually) between 1990 and 2000, and 0.4 percent (annually) between 2000 and 2010 (Table 5.8-3, Los Angeles County Labor Force, Employment, and Industry) (CEDD, 2010b; CEDD, 2012c). Construction employment in Los Angeles County in 2010 was approximately 104,300, representing approximately 3 percent of total industry employment in Los Angeles County (Table 5.8-3).

From 2000 to 2010, the fastest-growing industries in Los Angeles County were government; education and health services; other services; trade, transportation, and utilities; and leisure and hospitality. Notably, manufacturing employment declined 3.3 percent annually from 2000 to 2010 (CEDD 2010b; CEDD 2012a).

The unemployment rate in Los Angeles County decreased from 5.8 percent to 5.4 percent from 1990 to 2000, and increased from 5.4 percent to 12.6 percent during the period 2000 to 2010. Compared to the state of California, the Los Angeles County unemployment rate was 0.3 percentage points higher than the California rate of 12.4 percent in 2010, indicating a higher concentration of unemployed residents in Los Angeles County (Table 5.8-3, Los Angeles County Labor Force, Employment, and Industry) (CEDD, 2010c; U.S. Census Bureau, 2010a). The unemployment rate in Los Angeles County was 12.7 percent in 2010, and is projected to be 5.8 percent in 2020, 5.8 percent in 2030, and 5.7 percent in 2040 (Caltrans, 2011).

Between 2008 and 2018, employment in Los Angeles County is expected to grow 0.94 percent annually. The same measure for the state of California is higher, at 0.97 percent. Los Angeles County industries that are anticipated to grow the most between 2008 and 2018 are education and health services; professional and business services; and wholesale trade. Construction employment is anticipated to grow by 0.9 percent annually (CEDD, 2010c).

Los Angeles County residents commuted approximately 29 minutes to work, on average, in 2005 (CDOL, 2008). Approximately 93 percent of Los Angeles County residents work in Los Angeles County. An additional 4 percent (approximately) of Los Angeles County residents work in Orange County. San Bernardino County and Ventura County employers each employ 1 percent of the Los Angeles County labor force. Less than 1 percent of Los Angeles County labor force participants work in Kern County (U.S. Census Bureau, 2008).

Community of Tupman

The unincorporated community of Tupman encompasses approximately 0.5 square mile, and the center of the community is located approximately 2 miles southeast of the Project Site.

In 2009, 10 business establishments existed in the Tupman zip code area (93276), including three health care and social assistance firms, three mining companies, two wholesale trade companies, one finance and insurance company, and one professional and business services firm. One of the two mining companies employed the most people in the zip code area (between 250 and 499 employees) (U.S. Census Bureau, 2009b).

Between 2005 and 2009 the residents of Tupman were most commonly employed by retail trade or in the administrative and support and waste management services. The estimated median house and condominium value in 2009 was \$54,877, compared to \$384,200 for California. Median household income was \$24,854 in 2009, representing 42 percent of the California median household income that year (\$58,931) (City Data, 2011).

Community of Buttonwillow

The unincorporated community of Buttonwillow occupies approximately 7 square miles, and its center is located approximately 7 miles northwest of the Project Site.

In 2009, 48 business establishments existed in the Buttonwillow zip code area (93206), the majority of which were in accommodation and food services (25 percent of firms) and retail trade (21 percent). One of the retail companies and one of the manufacturing companies employed the most people (50 to 99 employees) (U.S. Census Bureau, 2009b).

Agriculture and related activities are also important in Buttonwillow. For example, BW Implement is a business establishment that manufactures agricultural supplies and equipment in the community.

The estimated median house and condominium value in 2009 in Buttonwillow was \$134,134, compared to \$384,200 for California. Median household income was \$41,272 in 2009, representing 70 percent of the California median household income (\$58,931) that year (City Data, 2011).

City of Wasco

The incorporated city of Wasco is approximately 7.6 square miles, and its center is located approximately 17.5 miles north of the Project Site.

5.8 Socioeconomics/Environmental Justice

In 2009, 173 business establishments existed in Wasco's zip code area (93280), the majority of which were retail trade (22 percent of firms) and accommodation and food services (14 percent). Health care and social assistance, retail trade, manufacturing, and forestry, fishing, hunting, and agriculture support employed the most people (between 100 and 249 employees) (U.S. Census Bureau, 2009b).

The estimated median house and condominium value in 2009 in Wasco was \$143,385, compared to \$384,200 for California. Median household income was \$39,046 in 2009, representing 66 percent of the California median household income (\$58,931) that year (City Data, 2011).

5.8.1.2 *Population, Housing, and Demographics*

Kern County

The population of Kern County was 839,631 in 2010, representing 2.2 percent of the state population (Table 5.8-4, Population Trends and Projections). Table 5.8-4 shows that average annual growth rates in Kern County population were 1.6 percentage points higher than the same rates for California, during the period from 2000 to 2010. The gap between the state growth rate and Kern County growth rate is expected to widen in future years (2010 to 2050) as the Kern County population growth rate increases. During the period from 2010 to 2020, the Kern County population is expected to grow 2.5 percent per year, on average, which is almost double the expected rate for California for the same period (CDOF, 2007).

Approximately 64 percent of the population in Kern County (534,051 people) resided in the incorporated cities in 2010. Of the 11 cities in Kern County, Bakersfield had the most residents (approximately 347,483 people), followed by Delano (54,447 people), Ridgecrest (28,726 people), and Wasco (25,541 people) in 2010. Arvin, Shafter, Tehachapi, McFarland, and California City were home to between 13,000 and 17,000 people. Taft had approximately 9,000 residents and Maricopa had slightly over 1,000 residents in 2010 (CDOF, 2010).

Kern County had approximately 281,735 housing units in 2010, including 73 percent single-family homes, 18 percent multi-family homes, and 9 percent mobile homes. The vacancy rate in 2010 was 9.9 percent, 4.0 percentage points higher than the California vacancy rate. Kern County had approximately 2 percent of the total housing units in the state, as well as higher percentages of multi-family homes and mobile homes when compared to the state (Table 5.8-5, Regional Housing Characteristics, January 2010).

Kern County residents were 62 percent minority in 2010. Also in 2010, approximately one-fifth of Kern County residents lived below the poverty level (Table 5.8-6, Race and Poverty Data in 2010).

City of Bakersfield

The population of Bakersfield was estimated at 347,483 in 2010, representing approximately 41 percent of the Kern County population (Table 5.8-4, Population Trends and Projections). During the period from 2000 to 2010, Bakersfield grew 2.9 percent per year on average, equal to Kern County and faster than California as a whole.

In 2010, the City of Bakersfield contained approximately 116,692 housing units, including 74 percent single-family homes, 24 percent multi-family homes, and 2 percent mobile homes. Bakersfield has more single-family and multi-family homes and fewer mobile home units as a percentage of total housing units when compared to Kern County. The Bakersfield housing unit vacancy rate in 2010 was 5.5 percent, which was lower than the same measure for Kern County, and slightly lower than the same measure for California as a whole (Table 5.8-5, Regional Housing Characteristics, January 2010).

Approximately 39 hotels with 5,400 rooms are located in Bakersfield. The most recent annual occupancy estimate is 63 percent occupancy for Bakersfield hotels for calendar year 2011, representing a 13 percent increase from the previous year. The trend is expected to slightly increase this year as the local and national economy recovers and both leisure and corporate travel increase. Hotel occupancy rates can range from low to very high depending on events and conventions in Bakersfield (Lyman, 2012).

Over half of Bakersfield residents were minorities in 2010. The percentage of residents living below poverty levels was 19 percent of the Bakersfield population in 2010 (Table 5.8-6, Race and Poverty Data). The poverty percentage is 2 percentage points less than the same measures for Kern County as a whole.

Community of Tupman

Tupman is a small, unincorporated community of approximately 161 people. The Tupman Census Designated Place was 7.5 percent minority and 40 percent low-income in 2010. The percentage minority for Tupman was substantially lower than the same measure for Kern County and California. The low-income percentage of population in Tupman in 2010 was substantially higher than the same measure for Kern County and California (see Table 5.8-6, Race and Poverty Data in 2010).

Community of Buttonwillow

Buttonwillow is a low-income, predominantly Spanish-speaking, farmworker community of approximately 1,508 residents (in 2010). The Buttonwillow Census Designated Place was 65 percent minority and 27 percent low-income in 2010. The low-income percentage of population in Buttonwillow is substantially higher than the same measure for Kern County and California as a whole (Table 5.8-6, Race and Poverty Data in 2010), but lower than that of Tupman.

City of Wasco

Wasco had approximately 25,545 residents in 2010. The City of Wasco was about 50 percent minority and 20 percent low-income in 2010. The low-income percentage of population in Wasco is substantially higher than that of the state of California, but lower than that of neighboring towns of Tupman and Buttonwillow.

Los Angeles County

The population of Los Angeles County was 9.8 million in 2010, representing 26 percent of the state population (U.S. Census Bureau, 2010a). Table 5.8-4 shows that average annual population growth rates in Los Angeles County were 0.5 percentage points lower than the same rates for California, during the period from 2000 to 2010. The growth rate for Los Angeles County for the period from 2010 to 2020 is expected to be 0.7 percent annually, compared to 1.3 percent for California (CDOF, 2010).

Approximately 90 percent of the population in Los Angeles County (9.8 million people) resided in the incorporated cities in 2010. Of the 88 cities in Los Angeles County, the city of Los Angeles had the most residents (approximately 4 million people), followed by Long Beach (495,000 people), Glendale (208,000 people), and Santa Clarita (178,000 people) in 2010. Twelve additional cities had populations over 100,000, and an additional 23 cities had populations over 50,000 (U.S. Census Bureau, 2010a; CDOF, 2010).

Los Angeles County had approximately 3.4 million housing units in 2010, including 55 percent single-family homes, 43 percent multi-family homes, and 1.7 percent mobile homes. The vacancy rate that year was 4.2 percent, 1.7 percentage points lower than the California vacancy rate. Los Angeles County has approximately one-quarter of the total housing units in the state, as well as higher percentages of multi-family homes when compared to the state (Table 5.8-5, Regional Housing Characteristics, January 2010).

Los Angeles County residents were 72 percent minority in 2010, and approximately 18 percent of Los Angeles County residents lived below the poverty level (Table 5.8-6, Race and Poverty Data in 2010).

Immediate Project Vicinity

As shown in Figure 5.8-2, Census Tracts within a 6-Mile Radius of the Project Site, census tracts 33.04 and 37.00 lie within 6 miles of the Project Site. Census Tract 33.04 covers over 622 square miles and includes the communities of Valley Acres, Dustin Acres, McKittrick, Derby Acres, and a portion of the city of Taft. The population within Census Tract 33.04 was 17 percent minority and 24 percent low-income in 2010. Census Tract number 37.00 encompasses approximately 186 square miles and includes the community of Buttonwillow. The population living in Census Tract 37.00 was 50 percent minority and 37 percent low-income in 2010 (Table 5.8-6, Race and Poverty Data in 2010).

More than 1,000 hotel rooms are located within a 30-minute drive of the Project Site. In Buttonwillow, two hotels are located east of the center of town near the Interstate 5 interchange, and have approximately 196 rooms (Roadside America, 2012). Excluding Bakersfield (which has a total of approximately 5,400 hotel rooms), the next closest cluster of hotels is in Lost Hills, located 20 miles northwest of Buttonwillow, along Interstate 5 (Lyman, 2008).

5.8.1.3 Public Services and Utilities

Fire Protection and Emergency Response

The Kern County Fire Department (KCFD) provides the Project Site with fire prevention and protection and emergency medical services. KCFD provides these services to unincorporated Kern County and the cities of Arvin, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco. The KCFD staffs 46 full-time fire stations, divided into seven battalions, with 546 firefighters (KCFD, 2012).

The fire station closest to the Project Site is Fire Station Number 25, located at 100 Mirasol Avenue in Buttonwillow, approximately 6 miles northwest of the Project Site. The second closest fire station is Fire Station Number 24, located at 23246 2nd Street, in McKittrick, approximately 7 miles (by road) south of the Project Site (Tisinger, 2012; KCFD, 2012). No fire stations are located within 1 mile of the Project Site.

The KCFD works in the same location and in conjunction with the Kern County branch of the California Office of Emergency Services. The joint Kern County/City of Bakersfield Dispatching facility provides dispatch and emergency communications for the unincorporated area of Kern County (which includes the Project Site) and all cities in Kern County. The KCFD has a mutual aid agreement with the only other fire department in Kern County, the Bakersfield Fire Department, as well as 14 other neighboring fire suppression organizations (Tisinger, 2012; Cal EMA, 2012; KCFD, 2012).

The first alarm response to the Project Site for a medical emergency will be one engine company staffed with three personnel from Buttonwillow Fire Station Number 25. For a more serious emergency such as a structure fire, additional response units will include an engine company from Station Number 25, two from Station Number 24, and three from Taft Fire Station Number 21. Additionally, a total of 11 units would be dispatched for a larger scale fire-related emergency. A hazardous materials unit based in Bakersfield is also available to respond to emergencies near the Project Site (Tisinger, 2012).

Hall Ambulance Service provides emergency ambulance services to the majority of Kern County at a level of advanced life support. Hall Ambulance Service is based in Bakersfield and includes helicopter response service. Hall Ambulance Service would respond to a situation at the Project Site that requires ambulance service (Hall Ambulance, 2012a).

Medical Facilities

Eight hospitals are within 48 miles of the Project Site, as shown on Table 5.8-7, Hospitals in the Project Vicinity. The hospitals closest to the Project Site are Mercy Southwest and HealthSouth Bakersfield, located approximately 21 miles northeast and 25 miles east of the site, respectively. Table 5.8-7 shows each hospital's distance from the Project Site, as well as the number of beds at each facility (KEDC, 2009; Hospital-Data.com, 2012).

Law Enforcement

The Kern County Sheriff's Department provides law enforcement services to the unincorporated portion of Kern County, which includes the Project Site. The department has approximately 1,240 employees, of which approximately 46 percent (572) are in sworn positions. These include deputies in the Bakersfield Metropolitan Patrol Division, officers at 13 substations, detention officers, detectives, and other support positions. The location of the department's administrative office is 1350 Norris Road, approximately 30 miles northeast of the Project Site.

The Taft substation of the Kern County Sheriff's Department would provide law enforcement services to the Project Site. The Taft substation is located at 311 North Lincoln Street in Taft, approximately 16 miles southwest of the Project Site. Staff at this substation includes nine deputies, two detectives, a school resource deputy, and an assigned bailiff (KCS, 2012).

Schools

The Project Site is located within the boundaries of the Elk Hills Elementary School District and the Taft Union High School District (Elk Hills Boundaries, 2009; Taft Union Boundaries, 2009).

The Elk Hills Elementary School District operates one school (Elk Hills Elementary), at which 81 students were enrolled during the 2009–2010 school year. The six full-time equivalent teachers at Elk Hills teach Kindergarten through Grade 8. Elk Hills Elementary School is located at 501 Kern Street in Tupman, approximately 2 miles southeast of the Project Site. Students from Elk Hills Elementary feed into Taft High School, which is part of Taft Union High School District, approximately 2 miles southeast of the Project Site. Taft Union High School District operates one other high school and one continuation school, in addition to Taft High School, with a total enrollment of 1,043 students during the 2009–2010 school year. Seventy-five teachers teach at Taft Union High School District schools (CA HomeTownLocator, 2010).

These two school districts combined had an annual average rate of growth of less than 1 percent for the period from the 1993–1994 school year through the 2010–2011 school year, as shown on Table 5.8-8, School Enrollment Trends. During this period, enrollment at the high school increased slightly, while enrollment in the elementary school nearly doubled. The enrollment capacity of Elk Hills Elementary School District is 225 students. Elk Hills Elementary School District does not publish enrollment projections; however, the District anticipates meeting capacity within the next 10 years (Neufeld, 2012). Taft Union High School District currently has an enrollment capacity of slightly over 1,000 students; although current enrollment is near capacity, the school district does not believe that student enrollment within the next 10 years would overburden the district (Gregory, 2012).

Colleges and universities with more than 200 students that are located within 50 miles of the Project Site include Bakersfield College and California State University – Bakersfield. Bakersfield College had approximately 33,235 students enrolled in the 2007–2008 school year and is located approximately 26 miles east of the Project Site (Bakersfield College, 2012). California State University – Bakersfield had an enrollment of approximately 7,639 day students in the fall of 2007 and is located approximately 31 miles east of the Project Site (CSUB, 2009). Several trade schools are also located in Bakersfield.

Utilities

West Kern Water District provides drinking water to the Project Site area. No municipal sanitary system is available on site or near the Project Site. Century Link provides local and long distance telephone service to businesses and homes near the Project Site, and several cellular telephone companies, such as Verizon, provide service to the area. PG&E supplies natural gas and electricity to homes and businesses near the Project Site. Southern California Gas Company also provides natural gas to homes and businesses in this area.

The Kern County Waste Management Division serves the area surrounding the Project Site, and operates seven landfills, five transfer stations, and three bin sites around the county. The landfills closest to the Project Site are the Taft Landfill and the Shafter–Wasco Landfill. The estimated closure year for the Taft Landfill is 2052; however, an expansion is currently proposed that would extend the closure year to 2078 (Bakersfield Environmental Health Division, 2011). The estimated closure year for the Shafter–Wasco Landfill is 2027; however, an expansion is currently proposed that would expand the closure year to 2053 (Cal Recycle, 2012). The two closest transfer stations are in Buttonwillow and the McFarland/Delano area. The Metro Kern County Special Waste Facility accepts hazardous waste at its facility at 4951 Standard Street in Bakersfield (Kern County Waste Management, 2012).

5.8.1.4 Public Finance and Fiscal Issues

The Project Site is located within the taxing jurisdiction of Kern County. Total revenues for Kern County for the fiscal year 2010–2011 were \$1.635 billion (Kern County Final Budget 2010–2011). The total projected revenue for Kern County for the fiscal year 2011–2012 is \$1.641 billion, a 0.36 percent increase from the previous fiscal year’s revenues (Kern County Final Budget 2011–2012).

Top revenue categories are intergovernmental (30 percent), patient (29.4 percent), and miscellaneous revenue (16.5 percent). Top appropriations categories are public protection (35 percent), public assistance (28.4 percent), and health and sanitation (15.2 percent) (Kern County Final Budget 2011–2012, 2012).

In 2010, total taxable sales in Kern County for the third quarter were approximately \$2.7 billion, representing 2 percent of the state taxable sales (\$121 billion), and have increased 5 percent since 2009. Total taxable retail sales the same year were \$1.6 billion for the county. The sales and use tax rate for Kern County (including state, local, and district) is 7.25 percent (CBOE, 2011).

Kern County’s assessed value of property was \$84.1 billion for the fiscal year 2011–2012, representing an increase in property values of approximately 2.5 percent (Kern County Assessor’s Office, 2012).

Under Proposition 13, the county-wide property tax rate is limited to 1.0 percent of assessed value. Additional levies are permitted for voter-approved general obligation debt. For the fiscal year 2011–2012, the average county-wide tax rate was 1.38 percent (Kern County Tax Rates & Assessed Valuations, 2012). Property tax revenues in Kern County for fiscal year 2011–2012 were allocated to schools (59 percent), county government (21 percent), fire protection

5.8 Socioeconomics/Environmental Justice

(10 percent), cities (5 percent), and special districts (5 percent) (Table 5.8-9, Base Factor Property Tax Disbursement, Fiscal Year 2011–2012) (CLAO, 2011; KCA, 2012). The total property tax revenue for Kern County for fiscal year 2011–2012 was approximately \$336 million (Kern County Assessor’s Office, 2012).

The Project Site is located on parts of Assessor Tax Numbers (ATNs) 159-040-18-00-2 and 159-040-16-00-6.

The net assessed value of ATN 159-040-18-00-2 is \$334,906. This parcel is located within Tax Rate Area 067-007. Property taxes for fiscal year 2008–2009 were \$3,562.97 (KCTTC, 2009c), and were broken down among funds as shown in Table 5.8-10, Assessor Tax Numbers 159-040-18-00-2 and 159-040-16-00-6, Property Tax Allocation, Fiscal Year 2008-2009 (KCTTC, 2009d). The net assessed value of ATN 159-040-16-00-6 is \$1,066,087. This parcel is located within Tax Rate Area 067-007. Property taxes for fiscal year 2008–2009 were \$11,341.81 (KCTTC, 2009e), and were broken down among funds as shown in Table 5.8-10 (KCTTC, 2009f).

5.8.2 Environmental Consequences

Significance Criteria

The criteria used in determining whether Project-related socioeconomic impacts would be significant are presented in Appendix G of the California Environmental Quality Act Guidelines. Impacts attributable to the Project are considered significant if they will:

- Induce substantial growth or concentration of population
- Induce substantial increases in demand for public services and utilities
- Displace a large number of people
- Disrupt or divide the physical arrangement of an established community
- Result in substantial long-term disruptions to businesses

Direct Economic Impacts

Construction

The on-site construction workforce would consist of laborers, craftsmen, supervisory personnel, support personnel, and construction management personnel. Table 5.8-11, Site Preparation and Construction Employment by Trade, shows construction labor by month for the Project. The average size of the workforce over the approximately 49-month construction and commissioning period would be 1,159 workers (including construction workers and contractor staff), corresponding to the creation of 6,216 job years (i.e., one job year is one full-time equivalent construction job for one year). The peak construction workforce would occur during Month 31 of construction and include 2,090 craft workers (on site) and 371 contractor staff. Pre-construction and construction is forecasted to begin in June 2013 and truck deliveries and ground disturbance is forecasted to begin in August 2013 and end in February 2017. Pre-commissioning and commissioning is forecasted to begin in March 2016, with commercial operation to initiate in September 2017.

Peak construction employment would represent approximately 20 percent of construction jobs in Kern County in 2010, and approximately 2 percent of construction jobs in Kern County and Los Angeles County combined. The majority of the workforce (approximately 60 percent) is expected to be hired from within Kern County.

Given the available construction labor force in Kern County and Los Angeles County, it is expected that an adequate available labor force within daily or weekly commute distance would be found to supply the workforce associated with construction of the Project. Kern County includes one city with a population over 100,000; the city of Bakersfield had 338,952 residents in 2010.

Sixteen cities in Los Angeles County have populations over 100,000. Construction workers typically tend to have longer commute times because the jobs are temporary. Given that there is a wide availability of construction workers within a daily or weekly commute of the Project Site, the Project would not result in an influx of a significant number of construction workers. Impacts of construction would provide benefits to the local labor force because of the current relatively high unemployment rates.

Construction of the Project is estimated to cost approximately \$3.15 billion. The total direct labor for construction is projected to cost approximately \$1.37 billion. This figure includes direct labor costs for the Project, the linears, and the OEHI Project. The remaining cost of construction, \$1.78 billion, is the cost for engineering, procurements, and construction of the Project. An estimated 60 percent of non-labor construction cost is anticipated to be spent within Kern County on materials and supplies. The remaining materials (comprising approximately 40 percent of non-labor cost), including the turbines, would be purchased outside Kern County.

Businesses in the local area surrounding the Project Site could experience impacts due to construction nuisances (noise, dust, traffic); however, these businesses are predominantly agricultural (e.g., dairy, orchards) and therefore these impacts are not anticipated to interfere with operations. See Section 5.5, Noise, for information on noise impacts from construction. Due to the temporary nature of construction, substantial and long-term disruptions to businesses would not occur. As a result, impacts to businesses from construction would be less than significant.

Operation

HECA LLC estimates that the staffing of the Project during the operational phase would require 200 full-time permanent jobs, including 22 operating technicians on four 12-hour rotating shifts, and 110 administrative, engineering, and maintenance personnel working on a day shift. The Project would also require qualified staffing in the following areas: production planning; equipment maintenance; instrument, electrical, and control support; material coordinating, inventory, and procurement; health, safety, and security; environmental protection; administrative support; benefits and human resource; training; and laboratory functions. HECA LLC has committed to give local preference in hiring and procurements, to the extent practicable. Most of the labor income earned by permanent employees at the Project would be spent in their place of residence.

5.8 Socioeconomics/Environmental Justice

In addition to the permanent staff, maintenance workers would be hired on contract for scheduled and unscheduled outages, maintenance activities, and the routine startup and shutdown of the gasifiers. Also, contract workers would be hired for the gas turbine scheduled inspection maintenance cycle, which typically occurs annually. Contract maintenance would typically include inspections and overhauls for the large compressors and rotating machinery; the combustion turbine, generators, and electrical transmission equipment; the steam turbine and other steam-generating boilers and heat exchangers; gasifier refractory repair and replacement; catalyst and sorbent change out; tower and vessel inspection and repair/replacement of internals; and other non-routine maintenance.

HECA LLC estimates that annual direct labor income of operations for the Project would be approximately \$30 million. Approximately 30 percent of material and supply purchases would occur within Kern County. The annual operation labor income and materials spending related to the Project would represent a permanent economic benefit to Kern County.

Project operation is not expected to result in substantial and long-term disruptions to area businesses. The closest businesses to the Project Site are located in the unincorporated communities of Buttonwillow and Tupman. Due to the distance from the businesses to the Project Site, disruptions to area businesses would be less than significant. Other impacts to the Kern County economy due to Project operations (increased number of jobs, labor income, and spending) would benefit the Kern County economy.

Indirect and Induced Economic Impacts

Construction

Construction activity would result in secondary economic benefits (indirect and induced) within Kern County. Secondary employment effects would include indirect employment due to the purchase of goods and services by firms involved with construction, and induced employment due to construction workers spending their income in their local area. Secondary impacts were estimated using IMPLAN[®] economic modeling software, an input/output model using economic data specific for Kern County from 2009. The IMPLAN data included both the HECA Project and the OEHI Project.

Estimated secondary effects of construction would be the creation of more than 6,950 job years. Based on IMPLAN estimates, construction of the Project and the OEHI Project would produce approximately \$1.67 billion in labor income, of which approximately \$294 million would be a result of indirect and induced effects of construction. This indirect and induced effect would contribute approximately \$843 million of increased economic output, primarily to the Kern County economy during the construction period. These beneficial effects would be temporary, occurring over the site preparation, construction, and commissioning/start-up period, and would lag behind the direct effects of construction by approximately 6 to 12 months. Because a portion of the construction workforce is assumed to be non-local, some of these secondary benefits are expected to be experienced in Los Angeles County; however, the majority of this impact is anticipated to benefit Kern County. These economic benefits would not result in significant adverse impacts.

Operation

Similar to construction, operation of the Project and OEHI Project would result in indirect and induced economic impacts that would occur within Kern County. Indirect and induced impacts were estimated using IMPLAN for Kern County and data for the Project and OEHI Project. Unlike indirect and induced impacts from construction, indirect and induced impacts from operation would represent permanent increases in area economic variables, but are anticipated to lag behind direct effects in timing.

Estimated indirect and induced effects of annual operation in Kern County would be approximately 430 additional job years annually, \$21 million in annual labor income, and \$68 million in annual economic output, based on 2012 dollars, for the life of the project. These economic effects would represent a long-term economic benefit to Kern County. This economic benefit would be concentrated in Kern County; however, some secondary benefits are expected to occur in Los Angeles County, because some non-local workforce and associated spending occurs over the life of the project. No significant adverse impacts would result from indirect or induced economic effects related to Project operations.

*Population**Construction*

HECA LLC estimated that approximately 60 percent of the construction workforce would be from the Kern County labor force. Although non-local workers do not typically permanently relocate to a project area due to the temporary nature of construction, it is possible that a few workers could relocate to communities near the Project Site due to the length of the construction and commissioning period. It is assumed for the purposes of this analysis, as a worst-case scenario, that one-quarter of the non-local workers (116 workers, on average) would relocate to Kern County. The remaining 75 percent (348 workers, on average) of non-local workers would commute on a daily or weekly basis.

Under the assumption that 116 workers (one quarter of the non-local workers) would relocate to Kern County, population in communities near the Project Site would permanently increase by an estimated 364 people. This estimate is based on a 2006–2010 household size of 3.14 for Kern County (U.S. Census Bureau, 2012c). A gravity model was used to approximate where these new permanent residents would live within Kern County. A gravity model is based on the concept that where people relocate is directly proportional to the population size of the chosen community (as a proxy for the number and type of community amenities available) and inversely proportional to the distance from the Project Site. The gravity model for the Project assumed that commute time (travel time) was a greater influence for relocation than straight-line distances.

The results of the gravity model indicate that the majority of the 364 people relocating as a result of construction would locate in Bakersfield (approximately 275 people), with approximately 10 to 20 people locating in Taft, Shafter, Wasco, Delano, and less than 10 people relocating into each of eight other communities elsewhere in the County. This population impact would represent a less-than-significant impact on the Kern County population because the worst-case

5.8 Socioeconomics/Environmental Justice

scenario of 364 new Kern County residents would generally result in population changes of 0.15 percent or less in individual Kern County communities.

The model does forecast a 2.2 percent increase in population in Tupman (an additional 4 people) and 0.5 percent increase in Buttonwillow (an additional 7 people) due to the short drive times from these unincorporated areas to the Project Site; however, based on a family size of approximately 3.14 people, this would represent no more than 2 to 3 families in each community. The temporary nature of construction means that even the estimate of 364 people relocating is a worst-case scenario and would not represent a significant increase in local population. Impacts would be less than significant.

Operation

The Project would require 200 full-time employees during operation. HECA LLC anticipates that approximately 60 percent of operations employees would originate from the Kern County labor force. The remaining employees would originate outside of Kern County. Of the 40 percent non-local workers (80 workers), it is assumed for the purposes of this analysis that half (40 employees) would relocate to Kern County. The other half (40 employees) would commute on a daily or weekly basis.

Under the assumption that 40 employees (one-half of the non-local workers) would relocate to Kern County, population in communities near the Project Site would increase by approximately 126 people. This estimate is based on a 2006–2010 household size of 3.14 for Kern County (U.S. Census Bureau, 2012c). The results of the gravity model indicate that the majority of the new population would locate in Bakersfield (approximately 95 people), and 6 or fewer people would locate in each of the following areas: Taft, Wasco, Shafter, Delano, and in each of several other communities in other parts of the County. These population changes would represent a less-than-significant impact on the Kern County population because the worst-case scenario of 126 new Kern County residents would generally result in population changes of less than 0.1 percent in individual Kern County communities.

The model forecasts a 0.8 percent increase in population in Tupman (an additional 1 person) and 0.2 percent increase in Buttonwillow (an additional 3 people) due to the short drive times from these unincorporated areas to the Project Site; however based on a family size of approximately 3.14 people, this would represent no more than 1 additional family in each community. Even if the population changes due to construction were to occur at the same time as the population changes due to operation, the greatest population changes to an individual community would be a total increase in population (from both construction and operation) of 383 in Bakersfield (0.11 percent increase) and a 3 percent increase in Tupman (5 additional people), neither of which would represent a significant increase in population. Therefore, impacts would be less than significant.

Housing

Construction of the Project (due to its temporary nature) would not displace a large number of people, disrupt or divide an established community, or cause any substantial permanent population increase or changes in population concentration. As a worst-case scenario,

156 workers (construction and operation) and their families (total of 490 people) could require permanent housing in Kern County communities. Based on a vacancy rate of 9.9 percent and a housing unit supply of 281,735 in Kern County in 2010, an estimated 27,900 housing units are available. Using the same methodology, approximately 6,420 housing units are available in Bakersfield. The increased demand for housing (under the worst-case assumption that 156 housing units would be needed) would be spread out among communities and would represent a less-than-significant impact because a more-than-adequate nearby housing supply exists to accommodate the influx of workers from construction and operations.

Approximately 5,400 hotel or motel rooms exist in Bakersfield, as discussed in Section 5.8.1.2, Population, Housing, and Demographics, to serve the non-local or local construction workers and operations employees who choose to commute on a weekly basis (stay in local lodging Monday through Friday). Approximately 1,000 rooms are within 30 minutes of the Project Site, with 196 rooms in the Buttonwillow area. The most recent annual occupancy estimate is 63 percent occupancy for Bakersfield hotels for calendar year 2011 (Lyman, 2012). Assuming a worst-case scenario where all remaining non-local (out-of-county) workforce commutes weekly, there would be an average of 388 workers inhabiting local hotels for the construction and commissioning period.

Construction and operation of the Project may increase the demand for temporary lodging in the Project Site area. Given the expected low demand for temporary lodging and the relatively large availability of nearby hotel and motel rooms, impacts related to the availability of hotels or motels would be less than significant.

Public Services and Utilities

Fire Protection and Emergency Response

The KCFD would provide fire protection services to the Project. KCFD is adequately staffed and equipped to serve the additional population associated with Project construction and operation (Tisinger, 2012). The response time from the closest fire station, Fire Station Number 25, located at 100 Mirasol Avenue in Buttonwillow, is approximately 10 to 12 minutes (KCFD, 2012). The potential for increased fire protection calls is not expected to induce substantial additional demand on the local fire department that could not be met by current staff.

The fire protection program for the Project would include fire prevention and protection measures, as described in more detail in Section 2.4.11, Fire Protection, of the Project Description. Emergency services would be coordinated with the local fire department and hospital. An urgent care facility would be contacted to set up non-emergency physician referrals. First-aid kits would be provided around the Project Site and regularly maintained. At least one person trained in first aid would be part of construction staff upon mobilization. Fire extinguishers would be located at strategic locations throughout the Project Site at all times during construction.

The fire protection and suppression systems would comply with applicable city, state, and national codes, insurer requirements, and industry standards, and would also comply with the Fire Protection Program. Section 2.4.11, Fire Protection, includes detailed information on the

5.8 Socioeconomics/Environmental Justice

Fire Protection Program, including applicable LORS. The potential for increased fire protection calls is not expected to induce substantial additional demand on local fire departments that could not be met by current staff.

Hall Ambulance Service provides emergency ambulance services to the majority of Kern County and would respond to a situation at the Project Site that requires ambulance service (Hall Ambulance, 2012a). The ambulance response time to the Project Site would be approximately 20 to 25 minutes with lights and sirens for a priority phone call, and 30 minutes for a lower-priority call (Hall Ambulance, 2012a and 2012b).

Thus, impacts to fire protection services and emergency response are expected to be less than significant.

Law Enforcement

The Kern County Sheriff's Department (KCSO) would provide law enforcement services to the Project. KCSO could not estimate an expected response time to the Project Site, but KCSO has staff and equipment to adequately serve the additional population associated with Project construction and operation (KCSO, 2012; Downs, 2012). In addition, it is not expected that the potential for increased police service calls would induce substantial additional demand on law enforcement agencies that could not be met by current staff. HECA LLC would establish a security system at the Project Site. Thus, impacts are expected to be less than significant.

Schools

Individual schools are not expected to experience a substantial impact due to the low number of expected new residents resulting from Project construction and operation, and because the new families who could potentially relocate would likely spread out among school districts. An estimated maximum of 122 worker-families during construction and 40 employee-families during operation would relocate for the Project. Approximately 84 (construction) and 28 (operation) additional school children could require educational services. These estimates of school children are based on 0.693 children between the ages of 5 and 17 per household in Kern County in 2010 (U.S. Census Bureau, 2012c). Taft Union High School and Elk Hills Elementary school districts would be able to accommodate the additional school children (Gregory, 2012; Neufeld, 2012). The impacts to local school districts are expected to be less than significant due to the low number of new students in any one school district that would be associated with the Project. The Elk Hills Elementary School District and Taft Union High School District have not prescribed developer school impact fees (Gregory, 2012; Kern County Superintendent of Schools, 2012).

Medical Facilities

Emergency services would be coordinated with the local fire department and hospital. An urgent care facility would be contacted to set up non-emergency physician referrals. First-aid kits would be provided around the Project Site and regularly maintained. The appropriate number of personnel trained in first aid would be part of construction staff upon mobilization. Fire

extinguishers would be located at strategic locations throughout the Project Site at all times during construction.

The medical facilities listed in Section 5.8.1.3, Public Services and Utilities, and Table 5.8-7, Hospitals in the Project Vicinity, could accommodate the increase in demand for services associated with the construction workforce and the operations workforce. In addition, see Section 5.7, Worker Safety and Health, for a discussion of worker health and safety. Project construction and operation could result in an additional 382 residents (construction) and 126 residents (operation) in Kern County. The majority of these new residents are estimated to locate in Bakersfield, with small numbers of new residents in the cities of Taft, Wasco, Shafter, and Delano. The impact on area hospitals would be less than significant.

Utilities

Construction

During construction, temporary utilities would be provided for the construction offices, laydown area, and Project Site. Temporary construction power would be initially generator-powered and would transition to utility-furnished power.

Storm water and natural runoff from off site would be directed through channels or culverts around the Project Site boundary.

For construction activities such as hydrotesting, water will be supplied from on-site wells and/or the WKWD. Consequently, impacts to utilities during construction of the Project would be less than significant.

Operation

The BVWSD would supply brackish groundwater to the Project. The Project would treat this impaired water supply on site to increase quality to Project standards, and would use the water for non-sanitary water consumption needs. The West Kern Water District would supply potable water to the Project Site from its location east of the Project Site.

No municipal sanitary wastewater system is available in the immediate area to serve the Project. Sanitary wastewater from plant restrooms and other facilities would be disposed of in an on-site leach field, as discussed in Section 5.14, Water Resources. Because the septic tank and leach field would be constructed in ground that has been determined to be acceptable by a percolation test, the impact would be less than significant.

Fiscal Impacts

Property Taxes

The current property tax rate for the Project Site, ATNs 159-040-18-00-2 and 159-040-16-00-6, is 1.07 percent. The current assessed value of the Project Site ATNs is \$1,705,016. Therefore, the Project is estimated to annually yield approximately \$22,078 in local property tax revenues to

5.8 Socioeconomics/Environmental Justice

the County. This amount represents less than 0.007 percent of the County's projected share of property tax dollars (i.e., \$336 million [Kern County Assessor's Office, 2012]) for the 2011–2012 fiscal year.

The value of the property would be reassessed as new construction occurs on the Project Site. According to the allocation of taxes for the Project Site ATNs, the General Local Government (1.0 percent) and Kern County WA ZN 19 Debt (0.024 percent) would be the largest beneficiaries of the property tax revenue, as shown in Table 5.8-10, Assessors Tax Numbers 159-040-18-00-2 and 159-040-16-00-6 Property Tax Allocation, Fiscal Year 2011–2012 (Kern County Recorder and Assessor, 2012).

Sales Taxes

Sales tax revenues for Kern County would increase as a result of (1) local equipment and supply purchases for Project construction and operation, and (2) construction and operation worker purchases (i.e., gas, food, and lodging).

The Project is expected to generate approximately \$77.4 million in taxable sales (7.25 percent sales tax multiplied by \$1.06 billion worth of locally purchased materials) during Project construction. Most of this revenue, \$67.3 million, would go to the state of California. An estimated \$10.1 million would be retained in Kern County. After construction is complete, additional sales tax revenues would continue as materials are purchased during operation..

Environmental Justice

In recent environmental justice analyses, the California Energy Commission (CEC) has used methodology consistent with U.S. Environmental Protection Agency (USEPA) guidelines. Under current USEPA methodology and CEC practice, for potential environmental justice impacts to exist, an environmental justice population must be present within 6 miles of the Project Site and the Project must result in “high and adverse” environmental impacts that affect the environmental justice populations disproportionately. As the discussion below demonstrates, the Project would not have “high and adverse” environmental impacts that affect the environmental justice populations disproportionately.

The CEC defines an environmental justice minority population when a minority population of the potentially affected area or the Census area (tract or block) is greater than 50 percent, or when it is meaningfully greater than the reference population. An environmental justice low-income population is identified as an area where the low-income population percentage is meaningfully greater than the low-income population percentage in the general population. For the purposes of this analysis, this threshold figure with respect to the Project Site would be any minority population greater than 50 percent, and a low-income population of 31 percent, which would be 10 percent greater than the Kern County low-income population of 21 percent. Census tract demographic data are typically reviewed to screen for the potential presence of environmental justice populations.

There are two census tracts partially within a 6-mile radius of the Project Site. These census tracts and their distance to the Project Site are depicted in Figure 5.8-2, Census Tracts within a

6-Mile Radius of the Project Site. Neither of these census tracts has a total minority population greater than 50 percent; however, one of them had a percentage very close to 50 percent, so additional analysis was performed, as discussed below. Census Tract 33.04 has a minority population of 17.3 percent and Census Tract 37.00 has a minority population of 49.5 percent, which is also approximately 12 percent below the comparative percentage in Kern County. Census Tract 33.04 has a low-income population of approximately 10 percent, substantially lower than the general (countywide) population or the populations in the other analyzed geographies. However, Census Tract 37.00 has a low-income population of 36 percent, 15 percent above the low-income population percentage of Kern County as a whole.

In addition to the low-income population environmental justice community in Census Tract 37.00, there could be concentrations of minority or low-income persons within the study area census tracts, or in Wasco, where the coal storage/transfer facility is located. Therefore, census data for Tupman and Buttonwillow, as well as Wasco, were reviewed, as presented in Table 5.8-6. Tupman is located within a 6-mile radius of the Project Site. Tupman could be considered an environmental justice community because of its high percentage of low-income population. In 2010, Tupman had a population that was approximately 40 percent low-income, substantially greater than that of either Kern County or the state of California. Similarly, a portion of Buttonwillow, whose minority population comprises 64 percent of the overall population, is located within 6 miles of the Project Site. Wasco, which is located over 17 miles north of the Project Site, also contains a minority population percentage (50.3 percent) high enough to be considered an environmental justice community.

Low-income environmental justice communities were identified in Census Tract 37.00 and in Tupman, and minority environmental justice communities were identified in Buttonwillow and Wasco; therefore, the Project was evaluated to determine whether or not these communities might experience disproportionately high and adverse effects as a result of the Project. As discussed below, these populations would not be disproportionately affected by any significant and adverse impacts associated with the Project.

This AFC Amendment includes a detailed analysis of the Project's potential to result in adverse health or environmental impacts on the surrounding community, including the immediate Project area, and the communities of Tupman, Buttonwillow, and Wasco. It concludes that with proper design and implementation of proposed mitigation measures, the Project would not result in any significant impacts. The following is a summary of the analysis completed in certain areas that are typically the focus of an environmental justice evaluation.

As discussed in Sections 5.1, Air Quality, and 5.6, Public Health, HECA LLC has analyzed the potential for the Project's air emissions to have an adverse impact on the surrounding community. This included an analysis of "criteria air pollutants," which are pollutants typically produced by combustion processes, including nitrogen oxides, sulfur oxides, carbon monoxide, volatile organic compounds, and particulate matter. At certain concentrations, criteria air pollutants can result in adverse health impacts, such as exacerbation of respiratory conditions, including asthma. HECA LLC also analyzed "toxic air contaminants," which are pollutants emitted in much smaller quantities. At certain concentrations, toxic air contaminants can pose a risk of cancer and certain non-cancer health effects.

5.8 Socioeconomics/Environmental Justice

The Project includes a number of design features to reduce the emissions of both criteria air pollutants and toxic air contaminants, including Best Available Control Technology to control emissions. As a result of implementation of these design features, as discussed in Section 5.1, Air Quality, the project will not cause or significantly contribute to an exceedance of either the state or federal ambient air quality standards. These standards are set at a level necessary to protect the most sensitive populations from the potentially adverse impacts associated with criteria pollutants. Further, as discussed in Section 5.6, Public Health, the Project would not result in emissions of toxic air contaminants that would increase the ambient cancer risk, or result in increases in non-cancer health effects, above established significance thresholds. In addition, emissions from the Project would be further mitigated through the purchase of emissions offsets. The modeling analyses conducted to demonstrate whether or not Project emissions exceed applicable air quality standards do not “take credit” for the emission offsets. Therefore, emission offsets provide additional mitigation above and beyond the design features of the Project. With implementation of these measures, and as discussed in further detail in Sections 5.1 and 5.6, the Project will not result in significant adverse impacts to air quality or public health.

As discussed in Section 5.5, Noise, acoustical calculations were performed to evaluate noise impacts associated with the Project. Extensive noise control features incorporated into the Project design ensure that Project operations would result in less than significant noise impacts. If the Project does not develop coal transportation Alternative 1 (rail transportation), there will be operational traffic noise impacts associated with Alternative 2 (truck transportation) along the truck route. In addition, the noise analysis identified that there would be no noise impacts to the environmental justice community in Wasco, located near the transloading facility. Mitigation measures will be incorporated to reduce potential noise impacts due to truck traffic to less-than-significant levels.

As discussed in Section 5.10, Traffic and Transportation, with proposed mitigation, the Project is not expected to have a significant impact on traffic or transportation. Although implementation of the project would result in some impacts to traffic and transportation, proposed mitigation would reduce those impacts to less than significant levels. Further, these impacts would apply equally to all residents and roadway users in the area who may concurrently use those affected traffic and transportation facilities with the Project and, therefore, would not disproportionately impact the identified environmental justice communities.

In summary, the Project is designed to employ state-of-the art environmental controls and would employ mitigation measures to reduce any potential impacts to a less-than-significant level. Consequently, no significant and adverse impacts would occur that could disproportionately impact minority or low-income populations, including those in Census Tract 37.00, Tupman, Buttonwillow, and Wasco. In addition, as discussed further in this section, the Project is expected to have a positive economic impact on the surrounding area.

As documented in Appendix Q, Public Information, Outreach, and Communications Plan, minority and low-income populations have been and will continue to be provided a variety of opportunities to comment on the Project. In September of 2009, an Information Hearing and site visit for HECA was conducted at the Elk Hills Elementary School in Tupman. In April 2010, CEC Staff also conducted a publicly noticed Data Response and Issues Resolution workshop in

Tupman and discussed the topics of air quality, cultural resources, biological resources, public health/hazardous materials, hazardous waste, and soil and water resources. The 2009 HECA Revised AFC was distributed to libraries in Wasco, Taft, Tehachapi, Boron, Bakersfield, and Buttonwillow. Information was provided at these meetings in both English and Spanish, and a Spanish interpreter was present. In addition, documents were sent to state libraries in Eureka, Fresno, Los Angeles, Sacramento, San Diego, and San Francisco. Project representatives have also met with the Wasco City Manager, to provide information and obtain input on the project, and further meetings are planned to be held in Wasco in 2012.

On February 1, 2011, HECA LLC opened an information center at 189 East Front Street, in Buttonwillow. The information center is staffed during weekdays, and can also be visited by appointment to accommodate individuals with work schedules that conflict with the center's hours. The center is staffed by representatives who speak both English and Spanish, and provides both English and Spanish-language materials about the project. In addition, the project website offers Spanish language materials for download.

HECA LLC communicates through periodic newsletter updates to area residents as well as over 1,000 stakeholders. HECA LLC has also been interacting with residents and community leaders in the course of funding several programs and initiatives to enhance the quality of life in western Kern County, particularly in these identified environmental justice communities. These programs include scholarships for local students, community foodbanks, healthy-start programs, community park initiatives, school field trip grants, women's and homeless shelters, and assistance with educational programs such as Head Start for elementary-school age children and the Kern Adult Literacy Council.

HECA LLC is committed to providing continued outreach to the interested public, and providing opportunities for environmental justice populations to obtain information and provide input into the decision making process. During continuing public outreach efforts, HECA continues to implement outreach strategies for the environmental justice communities, including the Wasco area, and will continue to provide Spanish language materials and use Spanish interpreters at public outreach events. Refer to Appendix Q for a copy of the Public Information, Outreach, and Communications Plan.

OEHI Project

Information and analysis related to the socioeconomic impacts of the OEHI Project are contained in Appendix A to this AFC Amendment. The conclusions of that analysis are summarized below.

Construction

According to the analysis contained in Appendix A-1, construction of the OEHI Project would not result in significant adverse impacts to population and housing (Section 4.12), public services (Section 4.13), recreation (Section 4.14) or utilities and service systems (Section 4.16). Nor would the OEHI Project result in disproportionate adverse impacts to an environmental justice community (Section 4.17).

Operation

According to the analysis contained in Appendix A-1, operation of the OEHI Project would not result in significant adverse impacts to population and housing (Section 4.12), public services (Section 4.13), recreation (Section 4.14) or utilities and service systems (Section 4.16). Nor would the OEHI Project result in disproportionate adverse impacts to an environmental justice community (Section 4.17).

5.8.3 Cumulative Impacts Analyses

Under certain circumstances, CEQA requires consideration of a project's cumulative impacts (CEQA Guidelines Section 15130). A "cumulative impact" consists of an impact which is created as a result of the combination of the project under review together with other projects causing related impacts (CEQA Guidelines Section 15355). CEQA requires a discussion of the cumulative impacts of a project when the project's incremental effect is cumulatively considerable (CEQA Guidelines Section 15130[a]). "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (CEQA Guidelines Section 15065 [a][3]).

When the combined cumulative impact associated with a project's incremental effect and the effects of other projects is not significant, further discussion of the cumulative impact is not necessary (CEQA Guidelines Section 15130[a]). It is also possible that a project's contribution to a significant cumulative impact is less than cumulatively considerable and thus not significant (CEQA Guidelines Section 15130[a]).

The discussion of cumulative impacts should reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great a level of detail as is provided for the effects attributable to the project under consideration (CEQA Guidelines Section 15130[b]). The discussion should be guided by standards of practicality and reasonableness (CEQA Guidelines Section 15130[b]).

A cumulative impact analysis starts with a list of past, present, and probable future projects within a defined geographical scope with the potential to produce related or cumulative impacts (CEQA Guidelines Section 15130[b]). Factors to consider when determining whether to include a related project include the nature of the environmental resource being examined, the location of the project, and its type (CEQA Guidelines Section 15130[b]). For purposes of this AFC Amendment, Kern County was contacted to obtain a list of related projects within a 6-mile radius of the Project Site. This list is contained in Appendix I. Depending on its location and type, not every project on this list is necessarily relevant to the cumulative impact analysis for each environmental topic.

For purposes of Socioeconomics, cumulative impacts were assessed by reviewing other projects proposed within the Project Site vicinity where overlapping construction schedules would create a demand for workers that may not be met by the labor force in Kern County. Seventeen proposed developments within 6 miles of the Project Site may affect construction workforce availability. These proposed developments are listed in Table 5.8-12.

These developments could temporarily deplete certain types of trade labor. However, these impacts are not considered significant because of the specialized nature of Project construction and because there is a large supply of construction workers and laborers in Kern County that could be supplemented by the Los Angeles County labor force. Therefore, cumulative impacts during construction would be less than significant.

According to the analysis contained in Appendix A-1, construction and operation of the OEHI Project would not result in significant cumulative adverse impacts to population and housing (Section 4.12), public services (Section 4.13), recreation (Section 4.14) or utilities and service systems (Section 4.16). Nor would the OEHI Project result in disproportionate cumulative adverse impacts to an environmental justice community (Section 4.17).

5.8.4 Mitigation Measures

No potentially significant adverse impacts were identified. Therefore, no mitigation measures beyond those identified in other sections of this AFC Amendment are necessary to reduce impacts to a less-than-significant level.

HECA LLC is committed to providing continued outreach to the interested public, and providing opportunities for environmental justice populations to obtain information and provide input into the decision-making process.

5.8.5 Laws, Ordinances, Regulations, and Standards

Federal, state, and local LORS applicable to the Project are listed in Table 5.8-13, Summary of LORS—Socioeconomics/Environmental Justice, and discussed below.

Federal

Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, national origin, age, sex, or disability in programs and activities receiving federal financial assistance.

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” requires USEPA to develop environmental justice strategies. As a result of the Executive Order, USEPA-issued guidelines requiring federal agencies and state agencies receiving federal funds to develop strategies to address environmental justice issues (USEPA, 1998). The agencies are required 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.

State

Government Code § 65040.12(e) defines environmental justice as “the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.”

5.8 Socioeconomics/Environmental Justice

California Government Code § 65302 requires each city and county to adopt a general plan that contains seven mandatory elements to guide the area's physical development. Kern County manages the county's development through the Kern County General Plan.

California Government Code § 65996-65997 (amended by Senate Bill 50) states that public agencies may not impose fees, charges, or other financial requirements to offset the cost for school facilities. However, the code does include provisions for levies against development projects near schools. School fees are paid directly to the school district and a receipt shown to the permit center technician.

California Public Resources Code § 71113 charges the California Environmental Protection Agency with a mission to ensure that its activities that substantially affect human health or the environment are conducted such that the fair treatment of people of all races, cultures, and income levels, including minority populations and low-income populations of the state, is ensured.

Local

The Project Site is located in an unincorporated area of Kern County. The Kern County General Plan contains an economic development section within the General Provisions of the Land Use Element. The Kern County General Plan establishes goals and policies to address the county's land use and development in the Land Use, Open Space, and Conservation Element. A goal of the Land Use, Open Space, and Conservation Element is to "provide for mixed land uses that offer a variety of employment opportunities and enhance the County's economic assets to allow the capture of regional growth" (Kern County General Plan, 2009). The Project is consistent with this land use goal because the Project would make a positive contribution to Kern County's economy through purchasing Project materials locally and hiring locally.

The San Joaquin Valley Air Pollution Control District (SJVAPCD) is responsible for implementing air quality regulations, including developing plans and control measures for stationary sources of air pollution; implementing permit programs for the construction, modification, and operation of sources of air pollution; and enforcing air pollution statutes and regulations governing stationary sources. The SJVAPCD adopted an Environmental Justice Strategy in 2007 (amended in 2010). The Environmental Justice Strategy is intended to identify and address any gaps in existing programs, policies, and activities that may impede the achievement of environmental justice, and it establishes the mission and goals to guide the SJVAPCD in further integrating environmental justice into programs, policies, and activities.

5.8.6 Involved Agencies and Agency Contacts

Various public service agencies were contacted in the course of the socioeconomics investigation to check on levels of activity and expected impacts of the Project. Table 5.8-14, Involved Agencies and Contacts, lists those agencies.

5.8.7 Permits Required and Permit Schedule

No applicable permits related to socioeconomics are required.

5.8.8 References

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**Table 5.8-1
Kern County Labor Force, Employment, and Industry**

Industry	1990	2000	2010
Civilian Labor Force	257,000	293,500	368,500
Civilian Employment	228,900	269,300	310,000
Civilian Unemployment Rate (%)	10.90	8.20	15.9%
Percent of Employment, by Industry			
Farm	15	20	17
Natural Resources and Mining	6	3	4
Construction	6	5	5
Manufacturing	5	4	5
Trade, Transportation, and Utilities	17	15	15
Information	2	1	1
Financial Activities	3	3	3
Professional and Business Services	8	9	9
Education and Health Services	6	8	10
Leisure and Hospitality	7	7	8
Other Services	3	3	3
Government (non-military)	22	21	19

Source: CEDD, 2010a.

**Table 5.8-2
Current and Projected Unemployment Rates**

Year	Kern County (%)	California (%)
2010	15.9	12.4
2020	7.7	5.4
2030	7.6	5.3
2040	7.5	5.3

Source: Caltrans, 2011.

**Table 5.8-3
Los Angeles County Labor Force, Employment, and Industry**

Industry	1990	2000	2010
Civilian Labor Force	4,523,700	4,677,300	4,879,500
Civilian Employment	4,259,700	4,424,900	4,262,300
Civilian Unemployment Rate	5.8 %	5.4 %	12.7 %
Percent of Employment, by Industry (%)			
Farm	0	0	0
Natural Resources and Mining	0	0	0
Construction	3	3	3
Manufacturing	20	15	10
Trade, Transportation, and Utilities	19	19	20
Information	4	6	5
Financial Activities	7	6	6
Professional and Business Services	13	14	14
Education and Health Services	9	10	14
Leisure and Hospitality	7	8	10
Other Services	3	3	4
Government (non-military)	13	14	14

Source: CEDD, 2010b.

**Table 5.8-4
Population Trends and Projections**

Year	Bakersfield	Buttonwillow	Tupman	Wasco	Kern County	Los Angeles County	State
2000	247,057	1,266	227	21,263	661,645	9,519,338	33,871,648
AARG, 2000-2010	28.9%	16%	-40.1%	17%	21.2%	3.1%	9.1%
2010	347,483	1,508	161	25,545	839,631	9,818,605	37,253,956
AARG, 2010-2020	N/A	N/A	N/A	N/A	2.5%	0.7%	1.3%
2020	N/A	N/A	N/A	N/A	1,086,113	11,214,237	44,135,923
AARG, 2020-2030	N/A	N/A	N/A	N/A	2.5%	0.6%	1.2%
2030	N/A	N/A	N/A	N/A	1,352,627	11,920,289	49,240,891
AARG, 2030-2040	N/A	N/A	N/A	N/A	2.62%	0.48%	1.02%
2040	N/A	N/A	N/A	N/A	1,707,239	12,491,606	54,266,115
AARG, 2040-2050	N/A	N/A	N/A	N/A	2.34%	0.46%	0.97%
2050	N/A	N/A	N/A	N/A	2,106,024	13,061,787	59,507,876

Source: U.S. Census Bureau 2009c; U.S. Census Bureau 2010a data used for 2000 and 2010 numbers; CDOF, 2007 for projections.

Notes:

- = negative

AARG = Average Annual Rate of Growth

N/A = not available

**Table 5.8-5
Regional Housing Characteristics, January 2010**

Location	Total Housing Units	Single-Family	Multi-Family	Mobile Homes	Vacancy Rate (%)
City of Bakersfield	116,692	86,230	27,713	2,749	5.5
Kern County	281,735	205,494	49,841	26,400	9.9
Los Angeles County	3,431,588	1,893,202	1,481,659	56,727	4.2
California	13,591,866	8,747,293	4,247,635	596,938	5.9

Source: CDOF, 2010

**Table 5.8-6
Race and Poverty Data in 2010**

Area	Population	Minority Population ¹	Percentage Minority ²	Population Living Below Poverty Level ²	Percentage Living Below Poverty Level ²
Geographic Areas					
Tupman CDP	161	12	7.5	48	40
Buttonwillow CDP	1,508	974	64.6	456	27
City of Wasco	25,545	12,845	50.3	5,088	20
City of Bakersfield	347,483	216,172	62.2	66,891	19
Kern County	839,631	515,837	61.4	171,950	21
Los Angeles County	9,818,605	7,090,284	72.2	1,697,465	18
State of California	37,253,956	15,800,022	42.2	5,290,061	14
Individual Census Tracts Within a 6-Mile Radius of the Project Site					
CT 33.04	5,248	906	17.3	543	10
CT 37.00	3,953	1,956	49.9	1,420	36

Sources: U.S. Census Bureau, 2010d, U.S. Census Bureau, 2010e ; and U.S. Census Bureau, 2009a.

Notes:

¹ The minority percentage represents the number of residents that, in 2010, were included in the following race or ethnicity categories (defined by the U.S. Census): White Hispanic/Latino, Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, Some Other Race, and Two or More Races.

² Low-income percentage represents the number of residents living below the poverty level, based on their 2009 income, taken as a percentage of the population for whom poverty status is determined (which includes all persons except institutionalized persons, persons in military group quarters and in college dormitories, and unrelated individuals under 15 years old).

CDP = Census Designated Place

CT = Census Tract

5.8 Socioeconomics/Environmental Justice

**Table 5.8-7
Hospitals in the Project Vicinity**

Name	Distance from Project Site and Address	Number of Beds and Type of Care
Mercy Southwest Hospital	21 miles 400 Old River Road, Bakersfield	78-bed general acute care
Good Samaritan Hospital	28 miles 901 Olive Drive, Bakersfield	64-bed general acute care
Bakersfield Heart Hospital	27 miles 3001 Sillect Avenue, Bakersfield	47-bed acute cardiac care
San Joaquin Community Hospital	28 miles 2615 Eye Street, Bakersfield	255-bed acute care
Bakersfield Memorial Hospital	32 miles 420 34th Street, Bakersfield	418-bed tertiary acute care
Mercy Hospital	26 miles 2215 Truxtun Avenue, Bakersfield	211 certified
Kern Medical Center	32 miles 1830 Flower Street, Bakersfield	222-bed acute care
Delano Regional Medical Center	48 miles 1410 Garces Highway, Delano	156-bed general acute care
HealthSouth Bakersfield Rehabilitation Hospital	25 miles 5001 Commerce Drive, Bakersfield	60-bed physical rehabilitation

Sources: KEDC, 2009; Hospital-Data.com, 2012.

**Table 5.8-8
School Enrollment Trends**

	1993-1994 School Year	1998-1999 School Year	2002-2003 School Year	2006-2007 School Year	2010-2011 School Year
Elk Hills Elementary School District	79	70	65	73	136
Taft Union High School District	991	974	983	1,100	1,045

Source: CDOED, 2011.

**Table 5.8-9
Base Factor Property Tax Disbursement, Fiscal Year 2011-2012**

Beneficiary Agency	Property Tax Allocation Percentage of Base Factor (%)
County Government	0.2076
County Fire	0.0962
Cities	0.0519
Special Districts	0.0543
Schools	0.5900
Total	1.0000

Source: CLAO, 2011; KCA, 2012.

**Table 5.8-10
Assessors Tax Numbers 159-040-18-00-2 and 159-040-16-00-6
Property Tax Allocation, Fiscal Year 2010-2011**

Taxing Agency	Rate (%)
General Local Government	1.000000
Kern County WA ZN 17 Debt	0.014797
Kern County WA ZN 19 Debt	0.023717
Elk Hills GOB 04A	0.006945
Elk Hills GOB 04B	0.005712
Elk Hills GOB 04C	0.007913
West Kern Com Col 04B	0.000002
West Kern Com Col 04C	0.004364
West Kern Col 05 Ref	0.006734
West Kern Com Col 04A	0.003365
Total	1.014797

Source: KCTTC, 2012

**Table 5.8-11
Preliminary Estimate of Monthly Construction Labor Power By Craft**

Rev. 5
4/11/2012

Job Category	Months after Construction Mobilization																																																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49		
CRAFT																																																			
Boilermakers													6	6	6	14	14	20	20	30	30	40	60	80	100	120	120	140	140	140	140	120	120	100	80	80	60	60	40	40	20	20	10	10	10	10	10	6	6		
Carpenters		4	4	8	10	14	18	24	30	50	50	60	70	90	100	120	140	140	140	150	150	160	160	180	180	180	200	200	210	210	220	220	200	200	200	180	160	140	100	100	50	50	50	50	50	50	40	40	20		
Cement Finishers								6	6	6	6	6	20	20	20	20	20	20	20	15	15	15	15	15	15	15	15	10	10	10	10	10	10	8	8	8	8	8	8	4	4	4									
Electricians		4	4	8	8	10	12	16	18	20	20	30	40	60	60	80	90	90	100	100	120	120	140	140	160	160	180	220	240	280	300	340	360	400	400	400	400	400	350	300	250	200	100	100	100	100	50	50	20		
Insulation Workers										10	10	10	10	10	10	10	10	20	20	20	30	30	40	40	40	40	40	40	50	50	60	60	80	80	100	120	140	160	180	220	220	150	50	50	50	50	50	30	20		
Iron Workers		2	2	4	6	10	10	20	20	30	30	40	40	40	60	60	80	100	120	140	160	180	200	220	240	260	260	280	280	260	240	200	180	140	100	80	60	40	30	20	20	10	10	10	10	6	6	4	4		
Laborers		11	13	22	45	54	60	71	68	60	61	66	83	133	149	138	138	143	143	131	131	155	155	155	138	115	115	115	104	76	76	54	54	54	52	49	40	40	30	30	20	20	20	20	20	20	10	10			
Millwrights					2	2	2	2	2	4	4	6	6	6	10	10	14	20	26	40	60	80	80	90	90	110	120	140	140	160	180	200	200	200	160	160	140	120	100	100	80	60	40	30	20	20	20	10	10		
Operators	16	16	20	20	30	30	40	40	50	50	60	60	60	70	70	80	80	90	90	110	120	140	140	160	160	180	180	200	200	200	160	160	140	120	100	100	100	80	60	40	30	20	20	20	20	10	10	5			
Painters		2	2	2	2	2	4	4	4	4	4	4	4	6	6	6	8	8	8	10	10	16	16	16	20	20	20	26	26	26	30	30	40	40	50	50	40	40	30	30	20	10	10	10	10	5	5	3			
Pipefitters		2	2	4	10	20	30	40	50	70	90	110	120	120	200	240	260	280	300	320	340	380	420	460	500	540	600	640	680	720	720	720	700	660	600	600	500	500	400	200	150	50	50	50	50	50	30	20	10		
Sheet Metal Workers													4	4	6	6	8	8	10	10	10	10	10	10	12	12	12	12	14	14	14	14	14	14	12	12	12	8	8	6	4	4	4	4	4	4	2	2	2		
Teamsters																																																			
Off plot Construction craft ²											26	26	44	44	44	54	54	39	39	40	26	26																													
Craft Subtotal	16	39	47	68	111	142	164	223	248	302	351	406	503	599	725	828	910	962	1018	1092	1152	1302	1416	1536	1643	1662	1842	1983	2052	2066	2090	2008	1998	1918	1802	1739	1580	1506	1266	1000	778	478	344	344	344	290	243	187	110		
STAFF																																																			
Management	10	10	20	20	20	20	30	40	40	50	90	90	90	100	110	120	127	139	140	140	140	140	140	140	140	140	140	140	140	140	140	130	100	95	90	80	80	60	60	50	30	30	30	30	30	20	20	10			
Engineering	2	2	2	2	2	4	4	6	10	10	10	10	12	14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	10	10	10	10	10	5	5	5	5	5	5	5	5	
Document Control	2	2	2	2	2	4	4	4	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	5	5	5	5	5	4	3	2	2	2	2	2	
Subcontractors Staff	4	6	8	10	14	20	22	28	32	36	40	44	48	54	74	82	90	96	104	108	116	136	146	156	166	170	188	202	210	210	210	206	204	196	184	174	156	144	124	96	68	44	40	40	40	40	20	20	10		
Off plot construction staff ²											4	4	6	6	6	6	6	6	6	6	5	4	4																												
Commissioning (by Owner)																																																			
Admin / Operating Staff (Owner)																																																			
Staff Subtotal	18	20	32	34	38	46	60	78	87	101	149	153	160	178	210	229	244	262	271	274	281	301	307	317	327	331	349	363	371	371	371	417	405	377	370	365	332	344	304	276	233	210	205	204	204	217	187	207	187		
Project Total	34	59	79	101	149	188	224	301	335	403	500	559	663	777	935	1057	1154	1224	1289	1366	1432	1603	1723	1853	1970	1993	2192	2347	2423	2437	2461	2425	2403	2295	2172	2104	1912	1850	1570	1276	1011	688	549	548	548	507	430	394	297		
Schedule																																																			
Site Mobilization																																																			
Site Prep																																																			
Construction																																																			
Commissioning & Start-Up																																																			

Notes:
 (1) These are approximate values
 (2) Off plot includes preliminary estimates for work that may be performed outside of the plot (plot linears, facility upgrades, site interfaces, rail spur, etc.)

**Table 5.8-12
Proposed Developments within a 6-Mile Radius of the Project Site**

Project Location	Project Description
At the intersection of Dairy Road and Adohr Road in the unincorporated area of Kern County.	A conditional use permit to establish a 121-acre dairy and 935-acre crop area.
At the intersection of 7th Standard Road and Brandt Road in the unincorporated area of Kern County.	A conditional use permit to establish a 589-acre dairy and 1,973-acre crop area.
On Tracy Avenue in the community of Buttonwillow.	A development for a “La Quinta” hotel.
345 Driver Road in the unincorporated area of Kern County.	A development for a concrete batch plant.
At the intersection of 7th Standard Road and Superior Road in the community of Rosedale.	A conditional use permit to establish a 20 MW alternating current photovoltaic solar panels.
31139 7th Standard Road in the city of Bakersfield.	A conditional use permit to establish agriculture-related uses.
1 mile west of Elk Hill Road South of Aqueduct in the city of Taft.	A conditional use permit to establish SMARA enforcement proceedings.
Elk Hills in Kern County.	A conditional use permit to establish a 7 MW solar project.
At the intersection of Enos Lane and Baker Road in the city of Bakersfield.	A conditional use permit to establish a 5 MW solar project.
At the intersection of Acacia St and Cherry Ave, in the city of Taft.	A conditional use permit to establish a 20 MW solar project.
At the intersection of Enos Lane and Snow Road, in the community of Rosedale.	A conditional use permit to establish a rock gravel sand distribution and asphalt batch plant.
28323 SR 119, in the community of Dustin Acres.	A conditional use permit to establish an agricultural supply service.
Southeast Enos Lane, 1 mile north of Panama Lane, in the city of Bakersfield.	A conditional use permit to establish a public agency building.
West of Elk Hills Road, 1 mile north of SR 119, in the city of Taft.	A conditional use permit to establish SMARA enforcement proceedings.
Olen Avenue, West of Enos Lane, in the city of Bakersfield.	A precise development for warehouse & mobile homes.
22356 Rosedale Highway, in the city of Bakersfield.	A precise development for recreational vehicle storage.
At the intersection of SR 58 and SR 43, in the community of Rosedale.	A development for a lumber truss manufacturing and warehouses.

Notes:

MW = megawatt
 SMARA = Surface Mining and Reclamation Act
 SR = State Route

**Table 5.8-13
Summary of LORS—Socioeconomics/Environmental Justice**

LORS	Applicability	Administering Agency	AFC Section
Federal Jurisdiction			
Executive Order 12898	Agencies are required 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.	USEPA	Section 5.8.5
State Jurisdiction			
Government Code § 65996-65997	Includes provisions for levies against development projects in school districts.	CEC	Section 5.8.5
Government Code § 65302	Kern County has a general plan to guide the development of the area over which it has jurisdiction.	CEC	Section 5.8.5
Local Jurisdiction			
Kern County	The Project is consistent with a goal of the Kern County General Plan Land Use Element.	Kern County	Section 5.8.5

Notes:

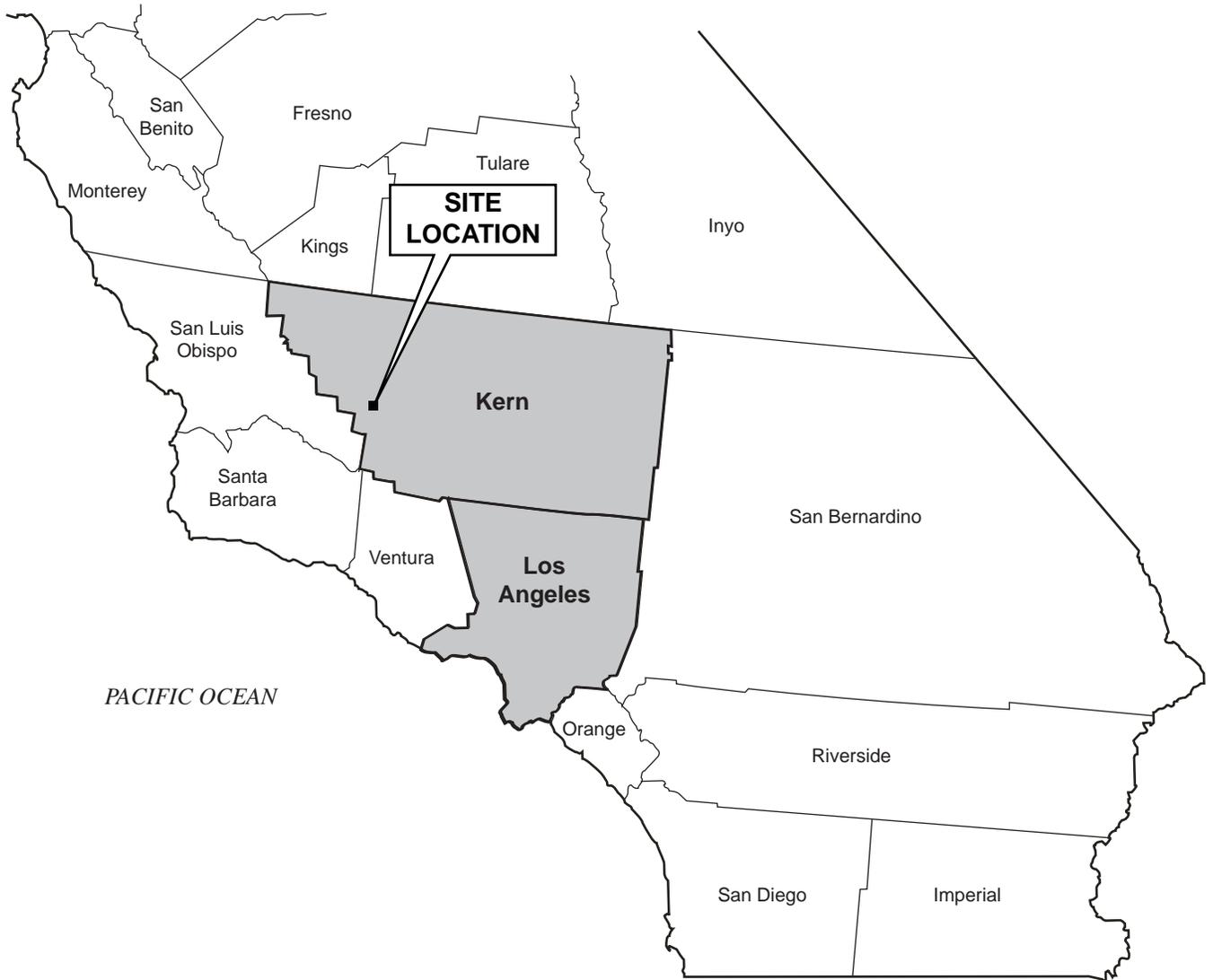
- AFC = Application for Certification
- CEC = California Energy Commission
- LORS = laws, ordinances, regulations, and standards
- USEPA = U.S. Environmental Protection Agency

5.8 Socioeconomics/Environmental Justice

**Table 5.8-14
Involved Agencies and Contacts**

Subject	Agency	Contact/Title	Telephone
Education	Kern Union High School District	Dennis Scott, Assistant Superintendent	661-827-3127
Public Finance and Fiscal Issues (School Impact Fees)	Kern County Office of the Superintendent of Public Instruction	Chris Davis, Representative	661-636-4493
Fire Protection Services	Kern County Fire Department	Derek Tisinger, Fire Captain	661-330-0133
Emergency Services	Hall Ambulance	Jennifer LaFavor, Manager, Communications Division	800-422-0656
Law Enforcement	Kern County Sheriff's Department	Sergeant Marty Downs	661-763-8550
Lodging	City of Bakersfield Convention and Visitors Bureau	David Lyman, Representative	661-852-7282

Sources: Scott, 2008; Lyman, 2012; Tisinger, 2012; Downs, 2012; Hall Ambulance, 2012a; KCT, 2008; Kern County Superintendent of Schools, 2012.



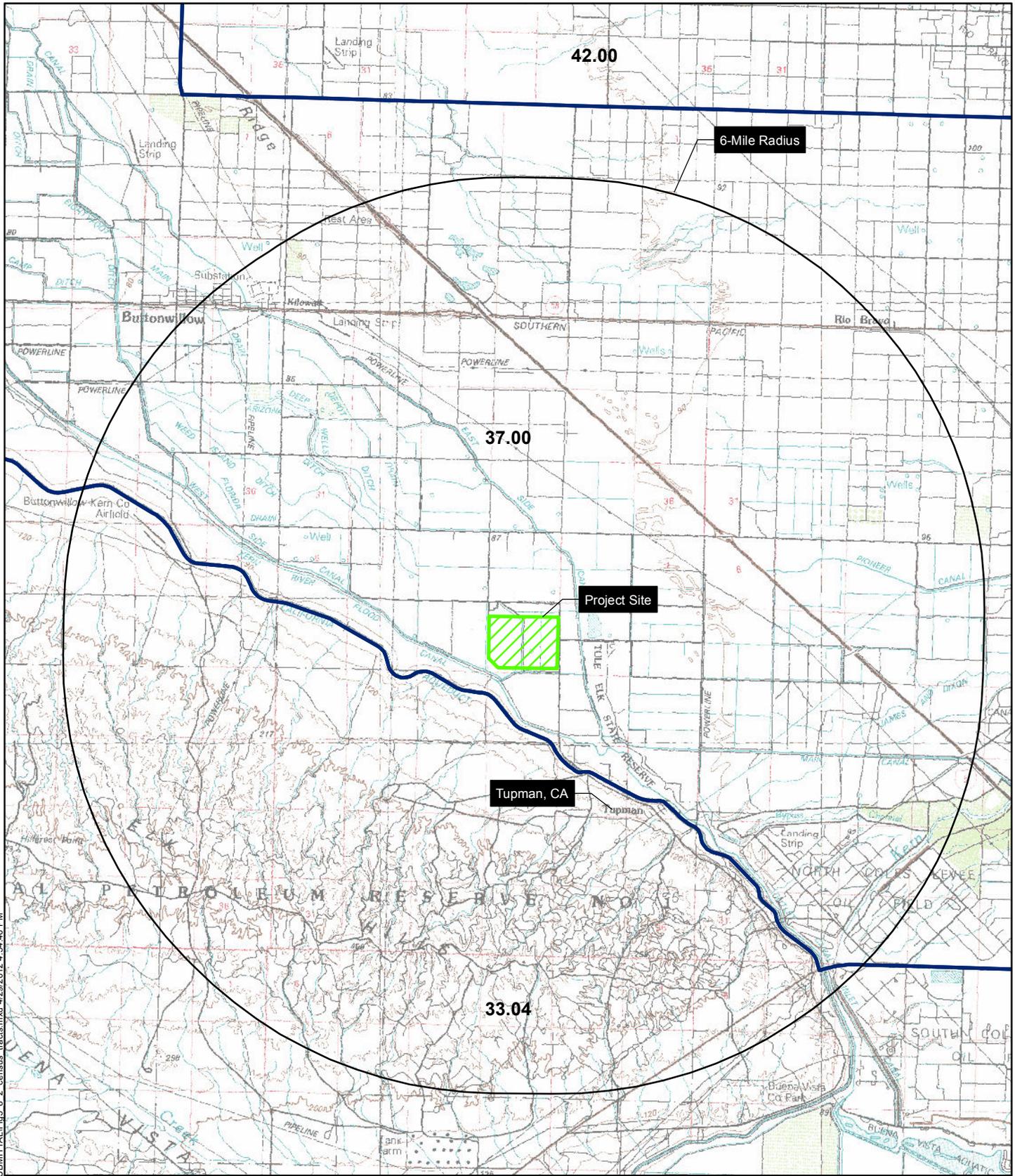
SOCIOECONOMIC STUDY AREA

April 2012
28068052

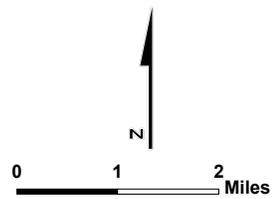
Hydrogen Energy California (HECA)
Kern County, California



FIGURE 5.8-1



-  Project Site
-  Census Tract Boundaries
- 3040 Census Tract



CENSUS TRACTS WITHIN A 6-MILE RADIUS OF THE PROJECT SITE

April 2012
28067571

Hydrogen Energy California (HECA)
Kern County, California



FIGURE 5.8-2

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