

SOCIOECONOMICS

Testimony of Jim Adams – Growth-Inducing Impacts
Steven Kerr – Socioeconomics
Richard McCann – Fiscal Impact Analysis

SUMMARY OF CONCLUSIONS

Energy Commission staff concludes that construction and operation of the Hidden Hills Solar Electric Generating System (HHSEGS) would not cause significant direct, indirect, or cumulative adverse socioeconomic impacts on the project area's housing, schools, parks, fire and emergency medical services, or law enforcement. Staff also concludes that the project would not induce a substantial population growth or displacement of population, or induce substantial increases in demand for housing. In addition, the project's natural gas pipeline and electric transmission line would not induce any additional growth in the project area.

The minority population in Socioeconomics Figure 1 does not constitute an environmental justice population as defined by *Environmental Justice: Guidance Under the National Environmental Policy Act* and would not trigger further scrutiny for purposes of an environmental justice analysis.

HHSEGS would both create new fiscal revenues for Inyo County as well as new costs associated with providing project-related services and infrastructure. Staff prepared the report, *Socioeconomic and Fiscal Impacts of the Hidden Hills Solar Electric Generation System on Inyo County*, to determine the benefits and the costs of the HHSEGS to Inyo County, which is included as **Appendix Socio-1** of this document. Staff concluded that the sales tax revenue generated for the county during the construction period would be much greater than the estimated potential county expenditures.

Staff-proposed Condition of Certification **SOCIO-1** would ensure project compliance with state and local laws, ordinances, regulations, and standards (LORS) related to socioeconomics.

INTRODUCTION

Staff's socioeconomic impact analysis evaluates the project's induced changes on existing population, employment patterns, and community services (emergency medical services, police protection, schools, and parks and recreation). Staff discusses the estimated impacts of the construction and operation of the HHSEGS, as described in the Application for Certification (AFC), on local communities, community resources, and public services, and provides a discussion of the estimated beneficial economic impacts of the construction and operation of the proposed project. Staff also looked at the potential for the HHSEGS natural gas pipeline and electric transmission line to induce growth in the project area.

The subject areas of utilities, fire protection, water supply, and wastewater disposal are analyzed in the **Reliability, Worker Safety and Fire Protection**, and **Water Supply** sections of this Final Staff Assessment (**FSA**).

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

Socioeconomics Table 1 contains socioeconomics laws, ordinances, regulations, and standards (LORS) applicable to the proposed project.

SOCIOECONOMICS Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

Applicable Law	Description
State	
California Education Code, section 17620	The governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstruction of school facilities.
California Government Code, sections 65996-65997	Except for a fee, charge, dedication, or other requirement authorized under Section 17620 of the Education Code, state and local public agencies may not impose fees, charges, or other financial requirements to offset the cost for school facilities.
California Revenue & Taxation Code, section 73	Allows property tax exclusion for certain types of solar energy systems. Assembly Bill 1451 extended the current property tax exclusion for new construction of solar energy systems to expire on January 1, 2017. If a project has started construction prior to the expiration date it would be eligible for the exclusion. After the exclusion sunsets, any solar energy system constructed remains exempt from property tax for so long as the property does not change ownership.

SETTING

The proposed HHSEGS is located in Inyo County, California, along the California-Nevada border. The proposed HHSEGS is located approximately 8 miles¹ south of Pahrump, Nevada, and approximately 45 miles west of Las Vegas, Nevada. A sparsely populated, rural residential community, Charleston View, lies immediately south of the proposed project site. For more information about the surrounding land uses please see the **Land Use** section of this document.

Inyo County encompasses a little over 10,000 square miles in area; approximately two percent (2%) is privately owned, and the remaining 98 percent is publicly owned. The Federal Government holds 92 percent of the land, the State of California holds 2 percent, and the City of Los Angeles holds 4 percent (US Census 2010a, INYO 2008). Over the last ten years (2000 to 2010) Inyo County's population has increased by 3.3 percent (17,945 to 18,546) (INYO 2010a). Most of the population growth occurred in the City of Bishop (8.5 percent, 3,575 to 3,879) in the northern tip of the county, while the remainder of the county grew by about 2 percent (14,370 to 14,667). Tecopa grew 51.5 percent (99 to 150) while Shoshone's population decreased by 40.4 percent (52 to 31).

¹ 28 miles is the driving distance from the proposed project to Pahrump via Old Spanish Trail Highway (also known as Tecopa Road) and Nevada State Route 160. The direct distance from southern Pahrump to the proposed project's Solar Field 1 is 8 miles.

While Inyo County is the second largest county in California by land area, it has the state's sixth smallest county population. Given most of Inyo County land is publicly owned, and with its relatively small population, it is reliant on a tax base that is much smaller than many other counties in California. This dynamic has resulted in systemic budgetary challenges for county leaders, especially as they strive to provide services to remote areas within its borders that would not necessarily be a concern in other California counties with larger populations and budgets, such as San Bernardino County directly to the south.

The median age in Inyo County is 45 years old, compared with California's median age of 34.9, and Nye and Clark counties median age of 47.4 and 35.1, respectively (INYO 2008, US Census 2010b). Inyo County's workforce is predominantly employed in the retail trades industry (14.1 percent, 1,200 workers) and in the health care and social assistance industry (14.0 percent, 1,197 workers). About 9 percent of Inyo County's workforce is employed in the construction industry (764 workers).

To assess project impacts, the AFC identified a Region of Influence as including Inyo County in California and Clark and Nye counties in Nevada (HHS 2011a, pg. 5.10-4). Normally, for the purposes of assessing project impacts, staff defines the "local workforce" during project construction as residing within a two-hour commute of the project. Based on the Electric Power Research Institute's (EPRI's) report, *Socioeconomic Impacts of Power Plants*, construction workers will commute as much as two hours to construction sites from their homes and one hour during operations, rather than relocate. In researching the issue of where construction labor would come from, staff contacted the Kern, Inyo & Mono Counties of California Building Trades Council (BTC) and the United Association Local 525 (Plumbers, Pipefitters, and HVAC Refrigeration Technicians) in Las Vegas (CEC 2011z and 2011aa).

The responses from the BTC and United Association Local 525 both indicate if the project contractor enters into a Project Labor Agreement with the affiliates of the BTC, because of the union structure and their construction workforce dispatch rules, nearly all of the construction workforce would come from California. If the applicant does not enter into a Project Labor Agreement, the construction workforce would mostly come from Clark and Nye counties in Nevada. At the March 13, 2012 Inyo County Board of Supervisors meeting, the applicant stated that they have selected Bechtel as the engineering, procurement, and construction (EPC) contractor for the project, and that Bechtel would likely enter in to a Project Labor Agreement (INYO 2012i, p.109, p. 111). The applicant later clarified that the selection of Bechtel as the EPC contractor is not yet final, but Bechtel is performing preconstruction services under a Master Services Contract (CH2 2012ee, p. 231).

On October 1, 2012, the applicant filed an Updated Workforce Analysis (UWA). The AFC had originally stated that 95 percent of the construction workforce was anticipated to be drawn from Nevada and 5 percent from California. The applicant now anticipates that 70 percent of the construction workforce would be drawn from California and 30 percent from Nevada. The onsite peak construction workforce also increased from 1,033 workers in Month 14, to 2,293 workers in Month 19. The new UWA assumptions of average and peak workforce estimates of 1087 and 2293 workers, respectively, has been incorporated into this FSA. (CH2 2012jj)

Staff defines the study area related to project impacts on population and housing as Inyo County (including its southern towns of Tecopa and Shoshone), and Clark and Nye counties in Nevada. The study area for impacts to sheriff and emergency services is Inyo County. The study area for environmental justice is a six-mile radius buffer from the project site.

USING THE 2010 US CENSUS AND US CENSUS BUREAU'S AMERICAN COMMUNITY SURVEY IN STAFF ASSESSMENTS

The detailed social, economic, and housing information previously collected only in the decennial census was not collected for the 2010 Census (US Census 2011a). This information is now collected through the U.S. Census Bureau's American Community Survey (ACS). Decennial census data is a 100 percent count collected once every ten years and represents information from a single reference point (April 1st). The main function of the decennial census is to provide *counts* of people for the purpose of congressional apportionment and legislative redistricting. ACS estimates are collected from a sample of the population based on information compiled continually and aggregated into one, three, and five-year estimates ("period estimates"), released every year. The primary purpose of the ACS is to measure the changing social and economic *characteristics* of the U.S. population. As a result, the ACS does not provide official counts of the population in between censuses. Instead, the Census Bureau's Population Estimates Program will continue to be the official source for annual population totals, by age, race, Hispanic origin, and sex.

ACS collects data at every geography level from the largest level (nation) to the smallest level available (block group²). Census Bureau staff recommends the use of data no smaller than the Census tract³ level.⁴ Data from the five-year estimates is used for our analysis as it provides the greatest detail at the smallest geographic level. Because ACS estimates come from a sample population, a certain level of variability is associated with these estimates. This variability is expressed as a margin of error (MOE). The MOE is used to calculate the coefficient of variation (CV). CVs are a standardized indicator of the reliability of an estimate. While not a set rule, the US Census Bureau considers the use of estimates with a CV more than 15 percent cause

² Census Block Group - A statistical subdivision of a census tract. A BG consists of all tabulation blocks whose numbers begin with the same digit in a census tract; for example, for Census 2000, BG 3 within a census tract includes all blocks numbered between 3000 and 3999. The block group is the lowest-level geographic entity for which the Census Bureau tabulates sample data from the decennial census. <http://www.census.gov/dmd/www/glossary.html>.

³ Census Tract - A small, relatively permanent statistical subdivision of a county or statistically equivalent entity, delineated for data presentation purposes by a local group of census data users or the geographic staff of a regional census center in accordance with Census Bureau guidelines. Designed to be relatively homogeneous units with respect to population characteristics, economic status, and living conditions at the time they are established, census tracts generally contain between 1,000 and 8,000 people, with an optimum size of 4,000 people. Census tract boundaries are delineated with the intention of being stable over many decades, so they generally follow relatively permanent visible features. <http://www.census.gov/dmd/www/glossary.html>.

⁴ Census Workshop: Using the American Community Survey (ACS) and The New American Factfinder (AFF) hosted by Sacramento Area Council of Governments on May 11 & 12, 2011. Workshop presented by Barbara Ferry, U.S. Census Partnership Data Services Specialist.

for caution when interpreting patterns in the data (US Census 2009a). In situations where CVs for estimates are high, the reliability of estimates improves by aggregating the estimates to a larger geographic area. When projects are proposed in remote locations, there may be very little population within a six-mile buffer of the project site. In these cases, the sample size would most likely be too small to yield estimates with a reasonable CV. Staff would need to expand the study area to include a large enough population that would yield a lower CV.

PROJECT-SPECIFIC DEMOGRAPHIC SCREENING

Staff's demographic screening is designed to determine the existence of a minority, or below-poverty-level population, or both, within a six-mile area of the proposed project site. The demographic screening process is based on information contained in two documents: *Environmental Justice: Guidance Under the National Environmental Policy Act* (CEQ 1997) and *Final Guidance for Incorporating Environmental Justice Concerns in EPA's Compliance Analyses* (US EPA 1998). Due to the change in the sources and methods of collection used by the U.S. Census Bureau, the screening process relies on Year 2010 U.S. Census data to determine the number of minority populations and data from the 2006-2010 ACS to calculate the population below-poverty-level. Staff determined the 2006-2010 ACS data at the county level is appropriate to use for the HHSEGS because the estimates yielded a reasonable CV.

Minority Populations

According to *Environmental Justice: Guidance Under the National Environmental Policy Act*, minority individuals are defined as members of the following groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. A minority population is identified when the minority population of the potentially affected area is greater than fifty percent or when the minority population percentage is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. The 2010 Census showed the total population within the six-mile buffer of the proposed project site is 782 persons, with a minority population of 179 persons, or about 23 percent of the total population (US Census 2010c). (See **Socioeconomics Figure 1**).

Socioeconomics Table 2 presents the minority population data in the six-mile buffer within California and Nevada, and data for communities and counties in a larger geographic area. On the California side of the six-mile buffer, there are 68 people residing in the Charleston View area, sixteen of whom are minorities, or about 24 percent of the population. The minority population in the Charleston View area is less than the minority population percentage in the general population of Inyo County, which is about 34 percent.

Socioeconomics Figure 1 also shows that the six-mile buffer extends into the southern portion of the Pahrump, Nevada area. As shown in **Socioeconomics Table 2**, within the six-mile buffer on the Nevada side, there are 714 people, 118 of whom are minorities, or about 17 percent of the population. The minority population on the Nevada side of the six-mile buffer is 17 percent, which is less than the percent minority of the general population in Pahrump, Nevada of about 20 percent.

Socioeconomics Figure 1 and Socioeconomics Table 2 do not indicate the presence of an environmental justice population. Based on comparisons with reference

geographies, staff concludes that the minority population in the six-mile buffer is not meaningfully greater than the minority populations in the general population in Inyo County and Pahrump, Nevada. Therefore, the minority population in the six-mile buffer does not constitute an environmental justice population as defined by *Environmental Justice: Guidance Under the National Environmental Policy Act* and would not trigger further scrutiny for purposes of an environmental justice analysis within in this **FSA**.

SOCIOECONOMICS Table 2
Minority Populations within the Project Area

Area	Total:	White alone	Minority	Percent Minority
Six-Mile Buffer- CA and NV	782	603	179	22.89
Six-Mile Buffer- CA Only	68	52	16	23.53
Six-mile Buffer- NV Only	714	596	118	16.53
Shoshone*	31	28	3	9.68
Tecopa*	150	115	35	23.33
Inyo County	18,546	12,296	6,250	33.70
Pahrump*	36,441	29,055	7,386	19.99
Sandy Valley*	2,051	1,608	443	21.60
Clark County	1,951,269	935,955	1,015,314	52.03
Nye County	43,946	34,663	9,283	21.12
Notes: *CDP- Census Designated Place, Bold text - minority population 50 percent or greater. Source: US Census 2010c.				

Below-Poverty-Level-Populations

Staff has identified the below-poverty-level population based on 2006-2010 American Community Survey 5-year Estimates from the U.S. Census for Inyo County⁵. Approximately 12 percent, or 2,178 people⁶ in Inyo County live below the poverty threshold. **Socioeconomics Table 3** presents poverty data for Inyo County, plus Clark and Nye counties.

⁵ When projects are proposed in remote locations, there may be very little population within a six-mile radius of the project site and the resulting sample size would be too small to yield estimates with a reasonable CV. Staff determined that data at the county level would be used for this analysis, as it is the smallest geographic area available that retains reasonable accuracy. The data represents a period estimate, meaning the numbers represent an area's characteristics for the specified time period.

⁶ 2,178 with an MOE of ±437 and a CV of 12.2. When a CV is 15 or less the Census Bureau considers the estimate fairly precise (US Census 2010a).

SOCIOECONOMICS Table 3
Poverty Data within the Project Area

Area	Total			Income in the past 12 months below poverty level			Percent below poverty level	
	Estimate*	MOE	CV	Estimate	MOE	CV	Estimate	MOE
Inyo County	18,308	±74	0.25	2,178	±437	12.20	11.90	±2.40
Clark County	1,870,566	±930	0.03	219,116	±6,008	1.67	11.70	±0.30
Nye County	43,377	±328	0.46	8,183	±1,065	7.91	18.90	±2.50

Notes: * Population for whom poverty status is determined.
Source: US Census 2010d.

Additional Environmental Justice Population Considerations

Final Guidance for Incorporating Environmental Justice Concerns in EPA’s Compliance Analyses (US EPA 1998) also encourages outreach to community-based organizations and tribal governments early in the screening process, in order to identify the presence of distinct minority communities residing both within, and in close proximity to, the proposed project. It also identifies those minority groups that utilize or are dependent upon natural and cultural resources that could be potentially affected by the proposed action. For information regarding the Energy Commission staff’s outreach program and consultations with local Native American communities, see the **Cultural Resources** sections of this **FSA**.

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

METHOD AND THRESHOLD FOR DETERMINING SIGNIFICANCE

CEQA defines a significant effect on the environment as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project” (State CEQA Guidelines Section 15382).

Thresholds of significance serve as the benchmark for determining if a project will result in a significant adverse impact when evaluated against existing conditions (e.g., "baseline" conditions). CEQA and the State CEQA Guidelines do not provide specific, quantifiable thresholds of significance for socioeconomic impact determinations. State CEQA Guideline Section 15064(e) specifies that: "[e]conomic and social changes resulting from the project shall not be treated as significant effects on the environment." However, Section 15064(e) continues by stating that when "a physical change is caused by economic or social effects of a project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. Alternatively, economic and social effects of a physical change may be used to determine that the physical change is a significant effect on the environment. If the physical change causes adverse economic or social effects on people, those adverse effects may be used as a factor in determining whether the physical change is significant. For example, if a project would cause overcrowding of a public facility and the overcrowding causes an adverse effect on people, the overcrowding would be regarded as a significant effect."

According to Appendix G of the State CEQA Guidelines, a project may have a significant effect on population, housing, and public services if it would:

- Induce substantial population growth in an area, either directly or indirectly;
- Displace substantial numbers of people and/or existing housing, necessitating the construction of replacement housing elsewhere; or
- Adversely impact acceptable levels of service for police protection, schools, parks and recreation, and hospitals and emergency medical response.

Staff's assessment of the significance of impacts on population, housing, emergency medical services, police protection, schools, and parks and recreation are based on professional judgments, input from local and state agencies, and the industry-accepted two-hour commute range for construction workers and one-hour commute range for operational workers.

DIRECT/INDIRECT IMPACTS AND MITIGATION

Induce Substantial Population Growth

For the purpose of this analysis, staff defines "induce substantial population growth" as workers moving into the project area because of project construction and operation, thereby encouraging construction of new homes or extension of roads or other infrastructure. To determine whether the project would induce substantial population growth, staff analyzes the availability of the workforce and the population within the region, which includes Inyo County in California and Clark and Nye counties in Nevada. Labor projections for Inyo County are reported as part of the Eastern Sierra Region, which also includes labor projections for Alpine and Mono counties. Labor projections for Clark and Nye counties are reported as part of the Las Vegas-Paradise Metropolitan Statistical Area (MSA⁷). Based on information in the BTC letter and the applicant's UWA, staff included construction trades from the Bakersfield MSA (Kern County) and the Riverside-San Bernardino-Ontario MSA (Riverside and San Bernardino Counties) in its assessment of worker availability.

Affected Environment

Socioeconomics Table 4 shows the historical and projected populations for Inyo, Clark, and Nye counties. **Socioeconomics Table 5** shows the total labor by skill for the Eastern Sierra Region (Alpine, Inyo, and Mono counties), Bakersfield MSA (Kern County) and Las Vegas-Paradise MSA.

⁷ An MSA contains a core urban area population of 50,000 or more, consists of one or more counties, and includes the counties containing the core urban area, as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core.

**Socioeconomics Table 4
Historical and Projected Populations**

Area	Population					
	2000 ¹	2010 ²	2020	2030	2010-2030	Percent Growth
Inyo County	17,945	18,546	20,495 ³	22,132 ³	4,187	22.58
Clark County	1,375,765	1,951,269	1,905,694 ^{L4} 2,325,456 ^{H4}	1,979,045 ^{L4} 3,066,872 ^{H4}	27,776 ^{L4} 1,115,603 ^{H4}	1.42 ^{L4} 57.17 ^{H4}
Nye County	32,485	43,946	44,417	46,859	2,913	6.63
Notes: - Data not available, ^L Low job growth, ^H High job growth, Inyo County projected population in 2040 (23,520) in 2050 (25,112) and the growth from 2010 – 2050 (6,566, representing 35.4% increase). Source: ¹ US Census 2000, ² US Census 2010e, ³ CA DOF 2007, ⁴ NVSBDC 2010.						

SOCIOECONOMICS Table 5
Total Labor by Skill in the Project Area (2008-2018)

	Boilermaker ¹	Carpenter	Cement Finisher	Electrician	Equipment Operator	Iron Worker	Laborer	Millwright	Pipefitter ²	Teamster ³
Eastern Sierra Region (Alpine, Inyo, and Mono counties)										
Total Workforce, 2008	-	270	860	50	60	-	120	-	50	100
Total Projected Workforce, 2018	-	270	840	40	60	-	130	-	50	110
Growth from 2008	-	0	-20	-10	0	-	10	-	0	10
Percent Growth from 2008	-	0	-2.33	-20	0	-	8.33	-	0	10
Bakersfield MSA (Kern County)										
Total Workforce, 2008	1,160	1,780	470	2,300	1,130	130	3,780	380	810	1,550
Total Projected Workforce, 2018	1,230	1,920	490	2,390	1,240	140	4,340	350	870	1,760
Growth from 2008	70	140	20	90	110	10	560	-30	60	230
Percent Growth from 2008	6.0	7.9	4.3	3.9	21	7.7	14.8	-7.9	7.4	14.8
Riverside-San Bernardino-Ontario MSA (Riverside and San Bernardino Counties)										
Total Workforce, 2008	3,230	18,380	3,780	5,020	4,460	710	17,950	120	4,330	10,340
Total Projected Workforce, 2018	3,080	18,910	3,910	4,850	4,640	710	19,500	120	4,340	11,120
Growth	-150	530	130	-170	180	0	1,550	0	10	780

	Boilermaker ¹	Carpenter	Cement Finisher	Electrician	Equipment Operator	Iron Worker	Laborer	Millwright	Pipefitter ²	Teamster ³
from 2008										
Percent Growth from 2008	-4.6	2.9	3.4	-3.4	4	0	8.6	0	0.2	7.5
Las Vegas-Paradise MSA										
Total Workforce, 2008	1,212	17,456	3,196	6,676	2,212	1,220	7,414	138	5,781	2,007
Total Projected Workforce, 2018	1,311	17,360	3,151	6,356	2,233	1,296	6,745	137	5,515	2,241
Growth from 2008	441	-96	-45	-320	21	76	-669	-1	-266	614
Percent Growth from 2008	8.2	-0.55	-1.41	-4.79	0.9	6.23	-9.02	-0.7	-4.6	11.7
Total Projected Workforce, 2018 for All Three MSAs										
	5,621	38,460	8,391	13,636	8,173	2,146	30,715	607	10,775	15,231
Total # of Workers for Project Construction by Craft*										
	273	130	18	365	106	138	127	155	517	29
Notes: - Data not available.										
¹ Welders, ² Plumbers, Pipefitters, and Steamfitters, and ³ Industrial Truck and Tractor Operators.										
*Largest number of workers by trade by month plus 397 Non-Craft (Non-union superintendents and construction personnel onsite).needed for project construction (CH2 2012jj).										
Source: CA EDD 2010, NDETR 2008, CH2 2012jj.										

Construction Impacts

The AFC states that construction (from site preparation and grading to commercial operation) would take approximately 29 months. If approved, construction would begin the second quarter of 2013 and conclude the fourth quarter of 2015. The two solar plants would be constructed concurrently with a planned three-month delay between their start dates (HHSG 2011a, pgs. 2-17 & 2-18). The applicant's Table 5.10-16R2 identifies the number of workers needed at the project site. The workforce need would range from a high of 2,293 workers in month 19, a low of 128 workers in the first month, and an average of 1,087 workers during the entire 29-month construction period (CH2 2012jj).

As stated above, the applicant is working with Bechtel Corporation. If selected as the Engineering, Procurement and Construction (EPC) contractor, Bechtel would likely enter in to an official Project Labor Agreement (PLA) that would use a union workforce. Because of the union structure and their construction workforce dispatch rules, the construction labor would come primarily from California union halls. As shown in **Socioeconomics Table 5**, the labor force within the Eastern Sierra Region, Bakersfield MSA, Riverside-San Bernardino-Ontario MSA, and Las Vegas-Paradise MSA combined would be more than sufficient to accommodate the labor needs for construction of the HHSEGS.

Due to the remoteness of the project site and limited housing, services, and infrastructure, Inyo County has expressed concerns about construction workers moving to the immediate Charleston View area during project construction, potentially contributing to population growth, and impacting county services in the Tecopa area (INYO 2012b). Because staff's analysis shows there is a sufficient labor force already in California and more workers available in the Las Vegas area if needed, the project would not induce substantial permanent population growth. In addition, the amount and location of available housing also determines whether the project would induce population growth. Staff's analysis shows that the project would not impact housing or necessitate construction of additional housing to accommodate the construction and operations workforces (see discussion below).

Operation Impacts

Socioeconomics Table 6 presents the operations force for the crafts specifically needed for the construction of HHSEGS. An operations workforce of 100 workers would be permanently needed for the project.

**SOCIOECONOMICS Table 6
HHSEGS Plant Operation Workforce**

Operations Workforce	
Solar fields and Power Block Workers	24
Technicians	16
MWM Operators	15
Warehouse & Maintenance Staff	13
Administration & Support Staff	32
TOTAL	100
<small>Note: Total workforce includes only the crafts specifically needed for the HHSEGS. See SOCIOECONOMICS Table 5 for a list of crafts included in the total workforce figures. MWM = mirror washing machine. Source: CH2 2012jj</small>	

The applicant estimates that most of the operations workforce would come from Las Vegas in Clark County, as well as from the rural areas in southern Inyo County. Some of the operation workforce would come from Pahrump in Nye County and from existing applicant staff (HHSG 2011a, pg. 5.10-28). The labor force within the Eastern Sierra Region, Bakersfield, and Las Vegas-Paradise MSA combined are more than sufficient to accommodate the labor needs for the operation of the HHSEGS. Staff agrees with the applicant's assumptions about the operations workforce and does not expect employees to relocate to the immediate project area, given the robust regional workforce. In addition, the United Association Local 525 letter stated that about 80 to 85 percent of the operations workforce would come from Clark County, with most of the workforce coming from Las Vegas. Pahrump does not have a large union labor supply. The BTC letter had no information on where the operations workforce would come from.

Displace Existing Housing and Substantial Numbers of People, Necessitating the Construction of Replacement Housing Elsewhere

As of April 1, 2010, there was a total of 613,228 housing units in the three-county project area (Inyo, Clark, and Nye counties) within a two-hour commute of the project site, with a combined vacancy of 83,441 units, representing a 13.61% vacancy rate (US Census 2010g). A five percent vacancy is largely accepted as a minimum benchmark for a sufficient amount of housing available for occupancy (Virginia Tech 2006). As **Socioeconomics Table 7** shows, the housing counts in the project area indicate a greater supply of available housing units than demand.

Socioeconomics Table 8 shows a more detailed breakdown of the vacant units in the area. Of the 83,441 vacant units, 32,064 were for rent, 16,025 were for sale, and 12,651 were listed for seasonal, recreational, or occasional use. **Socioeconomics Figure 2** provides a visual reference for the locations of each city and census designated place within about a two-hour commute of the project site listed in **Socioeconomics Tables 7 and 8**.

SOCIOECONOMICS Table 7
Housing Supply Within Two-Hour Commute of the Project Site

Geographic Area	Total	Occupied	Vacant	Percent Vacant
Shoshone CDP, Inyo Co, CA	31	17	14	45.16
Tecopa CDP, Inyo Co, CA	159	92	67	42.14
Beatty CDP, Nye Co, NV	700	508	192	27.43
Pahrump CDP, Nye Co, NV	17,824	14,870	2,954	16.57
Boulder City, Clark Co, NV	7,412	6,492	920	12.41
Enterprise CDP, Clark Co, NV	49,563	39,848	9,715	19.60
Goodsprings CDP, Clark Co, NV	124	108	16	12.90
City of Henderson, Clark Co, NV	113,586	101,314	12,272	10.80
City of Las Vegas, Clark Co, NV	243,701	211,689	32,012	13.14
Moapa Town CDP, Clark Co, NV	379	319	60	15.83
Mount Charleston CDP, Clark Co, NV	504	164	340	67.46
Nelson CDP, Clark Co, NV	43	21	22	51.16
City of North Las Vegas, Clark Co, NV	76,073	66,499	9,574	12.59
Sandy Valley CDP, Clark Co, NV	1,024	808	216	21.09
Searchlight CDP, Clark Co, NV	461	301	160	34.71
Sunrise Manor CDP, Clark Co, NV	70,255	60,874	9,381	13.35
Whitney CDP, Clark Co, NV	16,420	14,153	2,267	13.81
Winchester CDP, Clark Co, NV	14,969	11,710	3,259	21.77
Total	613,228	529,787	83,441	13.61
Source: US Census 2010f, US Census 2010g				

SOCIOECONOMICS Table 8
Vacancy Status Within Two-Hour Commute of the Project Site

Geographic Area	For Rent	For sale	For seasonal, recreational, or occasional use	Other Vacant	Total
Shoshone CDP, Inyo Co, CA	3	1	3	7	14
Tecopa CDP, Inyo Co, CA	4	4	47	12	67
Beatty CDP, Nye Co, NV	106	7	41	38	192
Pahrump CDP, Nye Co, NV	549	509	498	1,398	2,954
Boulder City, Clark Co, NV	276	144	333	167	920
Enterprise CDP, Clark Co, NV	1,925	2,045	2,985	2,760	9,715
Goodsprings CDP, Clark Co, NV	2	1	0	13	16
City of Henderson, Clark Co, NV	3,646	2,335	2,895	3,396	12,272
City of Las Vegas, Clark Co, NV	14,777	6,096	3,083	8,056	32,012
Moapa Town CDP, Clark Co, NV	26	5	5	24	60
Mount Charleston CDP, Clark Co, NV	7	30	267	36	340
Nelson CDP, Clark Co, NV	0	3	12	7	22
City of North Las Vegas, Clark Co, NV	3,410	2,241	769	3,154	9,574
Sandy Valley CDP, Clark Co, NV	10	23	63	120	216
Searchlight CDP, Clark Co, NV	20	16	87	37	160
Sunrise Manor CDP, Clark Co, NV	5,228	1,443	461	2,249	9,381

Geographic Area	For Rent	For sale	For seasonal, recreational, or occasional use	Other Vacant	Total
Whitney CDP, Clark Co, NV	721	514	337	695	2,267
Winchester CDP, Clark Co, NV	1,354	608	765	532	3,259
Total	32,064	16,025	12,651	22,701	83,441
Source: US Census 2010h					

There is little lodging immediately near the project site, or in the towns of Tecopa and Shoshone. The closest area with any meaningful lodging available is in the town of Pahrump, Nevada, approximately a 26-mile drive from the project site.

Socioeconomics Tables 9 and 10 present the available temporary lodging within an approximately one-hour commute range from the project site. **Socioeconomics Table 9** shows there are over 148,000 motel/hotel rooms within one-hour commute of the project site; **Socioeconomic Table 10** shows abundant RV park spaces within a two-hour commute of the project site.

SOCIOECONOMICS Table 9
Hotel/Motel Supply Within One-hour Commute of the Project Site

Geographic Area	Hotels/Motels	Total Number of Rooms
Tecopa, CA	2	33 rooms/4 cabins/13-bed budget hostel
Shoshone, CA	1	17 rooms
Pahrump, NV	3	314 rooms
Las Vegas, NV	numerous	148,935 rooms
Sources: DVCC 2011, PVCC 2011, SV 2011, TN 2011, LVCVA 2011a, LVCVA 2011b.		

SOCIOECONOMICS Table 10
RV Park Supply Within Two-Hour Commute of the Project Site

Geographic Area	RV Parks	Total Number of Spaces
Tecopa, CA	3	219 spaces
Shoshone, CA	1	24 spaces
Pahrump, NV	8	766 spaces
Las Vegas, NV	13	3,555 spaces
Amorgosa Valley, NV	2	143 spaces
Boulder City, NV	4	642 spaces
Beatty, NV	5	161 spaces
Henderson, NV	1	80 spaces
North Las Vegas, NV	1	196 spaces
Searchlight, NV	1	72 spaces
Sources: DVCC 2011, PVCC 2011, SV 2011, TN 2011, LVCVA 2011a, LVCVA 2011b.		

Construction Impacts

The Updated Workforce Analysis indicates that construction work would be scheduled on a five-day per week, 10-hour per day basis. This would result in many construction workers commuting to the site either Sunday evening or Monday morning (depending upon if they are day or swing shift workers), seeking nearby lodging for four nights, then heading for home either Friday evening or Saturday morning. (CH2 2012jj, pp.1-2).

Because of the ample lodging available in the three counties and the fact that there is very little available housing in Tecopa and Shoshone, staff agrees that most construction workers would take advantage of existing available lodging within a two-hour commute distance in Nevada, and commute to the project site. Staff's research with Building Trades Councils and unions regarding commuting habits of construction workers shows that union workers do not bring their families with them if they temporarily relocate to a job site. Given the ample lodging options in the three-county region, staff does not anticipate any new housing construction because of the project.

Operation Impacts

The project would require 100 full-time employees during project operation. The applicant anticipates that most of the operational workforce would come from Las Vegas in Clark County and parts of surrounding rural areas in Inyo County and some may come from Pahrump in Nye County. The applicant assumed that 95 percent (95 employees) would come from Nye and Clark counties and 5 percent (5 employees) would come from Inyo County. (HHSG 2011a, pg. 5.10-28) United Association Local 525 also expects that the operations workforce would come mostly from Las Vegas and from Clark County (CEC 2012d). The applicant expects the operational workforce would commute from their existing residences to the project site. Because there are so few housing choices in Tecopa and Shoshone, staff agrees with the applicant's assumptions.

As presented above in **Socioeconomics Tables 7 and 8**, there would be an adequate housing supply in the area to accommodate the project's operational workforce.

Conclusion

The proposed project site and construction laydown area are located in an unincorporated area of Inyo County known locally as Charleston View. The site is not developed, but it contains unimproved dirt roads and trails. The proposed project is a solar power plant, an industrial use, and would not displace existing housing, induce substantial population growth, or necessitate the construction of replacement housing elsewhere. Given the ample lodging options in the three-county region, staff does not expect the project would necessitate any new housing construction to accommodate construction and operations workers.

Inyo County has expressed concerns about the project workforce and its potential to impact county services and housing. County staff has stated that the remote location of the project site raises logistical concerns for county administrators because the majority of their existing available resources such as social services are concentrated within the county's population center of Bishop, 250 miles northwest of the project site.

According to Inyo County staff, illegal camping on private property in the Charleston View area has been a problem at times. Inyo County is concerned that due to the limited supply of temporary lodging and RV parks in nearby Tecopa or Shoshone, construction workers will lease land in the adjacent community of Charleston View to park their RVs, or camp illegally on vacant land near the project site (INYO 2012b). Vacant properties in Charleston View do not have electricity and the availability of water is uncertain. Staff has identified an ample supply of existing housing, hotels/motels, and RV parks in the area for construction workers who may temporarily relocate during project construction. Staff concludes that with the ample housing choices, construction workers would not camp illegally, but would instead reside temporarily in available housing near commercial services, and would not significantly impact Inyo County services. Although staff has not identified a significant impact to housing, with the intention of taking a proactive approach to the County's concerns regarding illegal camping, staff proposes Condition of Certification **SOCIO-2**, requiring that information regarding illegal and unauthorized camping be included with the Worker Environmental Awareness Program (WEAP) training for all personnel. Additional details of the WEAP training can be found in the **Biological Resources** section of this **FSA**.

Staff concludes that the project would not induce substantial population growth in the area or displace substantial numbers of people or housing because there is a sufficient existing labor force in the region and the workforce would reside in existing, available housing.

Public Services

Result in Substantial Physical Impacts to Government Facilities

As discussed under the subject headings below, the HHSEGS would not cause significant impacts to law enforcement, schools, and parks. The Southern Inyo County Fire Protection District (SIFPD) and the applicant are still discussing how best to ensure adequate fire and emergency service for the project. At this time, staff cannot conclude that the proposed project would not significantly impact fire and emergency medical services. Safety and health issues including the applicant's proposed systems and procedures to provide occupational safety and health protection for the HHSEGS workers are discussed in the **Worker Safety and Fire Protection** section of this **FSA**.

Emergency Medical Services

Affected Environment

The project site is within the jurisdiction of the Southern Inyo Fire Protection District (SIFPD). SIFPD is the local agency authorized to provide fire prevention, fire suppression, and emergency medical services in an approximately 1,250 square mile area, including the HHSEGS site. SIFPD operates on a very limited budget, and has one station in Tecopa and one temporary location in Charleston View. SIFPD does not receive a share of the one percent property tax levied on the project site, so there would need to be provisions for financing fire and emergency services (SIFPD 2012b).

The Tecopa fire station would be the first responder for medical emergencies at the project site (CH2 2011e, pg. 14). A response from the Tecopa Station, 27 miles from the project site, would take about 30 to 40 minutes (HHS 2011a, pg. 5.16-21, and CEC 2012h, CH2 2012z, pg. 7-2). As of February 2012, SIFPD staff at the Tecopa station consisted of two personnel with Emergency Medical Technician-Basic (EMT-B) certification, one Firefighter II (FFII), two Firefighter I (FFI) in training, and four Entry Level Firefighter/First Responders. With the exception of the Fire Chief and the Administrative Officer, which are paid, SIFPD personnel are volunteers that respond on a 24-hour, 7-day per week basis. The SIFPD equipment consists of two Light Rescue Units, two Type 2 Engines, one Basic Life Support Ambulance, and one Ambulance (CH2 2012z, pg. 7-1). All firefighters in SIFPD have first response medical training called Basic Life Support (BLS) training. The Tecopa station has one ambulance staffed with three personnel and a fire truck staffed by two personnel, which would likely respond to emergencies at the project site. (CH2 2011e, pg. 14, and CEC 2012h)

At staff's request, the applicant provided a draft Fire and Emergency Services Risk and Needs Analyses (FESNA) on May 9, 2012 (CH2 2012z). The analyses suggest that by complying with LORS, the project would not create significant impacts on the local SIFPD or local emergency response resources, because any responses needed for fire, medical, or technical rescue needs would be sourced from either the Pahrump Valley Fire-Rescue Services (PVFRS) or Nye County Emergency Services (NCES) in Pahrump, Nevada. The mechanism of how these services would be sourced and paid for from another jurisdiction in the state of Nevada rather than from the local Authority Having Jurisdiction (AHJ), in this case SIFPD, has not been clearly established. Correspondence from Larry Levy, Acting Chief of the SIFPD (CEC 2012h), and William D. Ross, who provides legal representation for the SIFPD (SIFPD 2012a), states that the HHSEGS project would have an impact on SIFPD's ability to maintain its level of service for fire, hazmat, and EMS emergencies to its service district.

PVFRS has a long-standing practice of providing SIFPD mutual aid and response, but does not currently have a signed agreement. PVFRS has four stations, all located in Nevada and staffed with full-time and volunteer firefighters. All PVFRS staff has basic medical training. PVFRS has five ambulances and two medical squads distributed among their four stations. PVFRS' main station has two EMTs and one paramedic, as well as two advanced life support- (ALS) certified ambulances and one ALS-equipped medical squad vehicle (CEC 2011j). The estimated response time from Pahrump Valley Fire Station No. 3 (12 mile distance) is approximately 15-20 minutes, and from Station No.1 (18 mile distance), it is estimated to be approximately 18-25 minutes (CH2 2012z, Table 7-1). PVFRS is the closest responder to the project site with ALS capabilities and are staffed 24 hours a day.

Nye County Emergency Services (NCES) has a HazMat team that operates through the Nye County Fire Department's Station 51 in Pahrump, which is 28 road miles from the project site, and has an approximate response time of 45 minutes. Station 51 is staffed with 15 to 20 volunteers who are trained as HazMat technicians. The team has the following equipment, as of April 2011: one HazMat truck with 25-foot trailer, one biohazard unit, one fire engine, and one ambulance (HHS 2011a, Sect 5.5.4.3).

PVFRS would respond to trauma or industrial accidents with an ALS ambulance, Heavy Rescue, and can request a helicopter for air rescue, if necessary, and based on availability (weather, other calls, etc.). Additional assistance is available from Round Mountain/Smoky Valley Fire Services in Nye County and Las Vegas as well, but it is at least a 1-hour response time from Las Vegas, and can take up to 2 hours (HHS 2011a, pg. 5.16-21).

If a patient's condition is serious (e.g. serious cardiac arrest, stroke, large laceration, etc.), PVFRS can transport these patients via Mercy Air to University Hospital Medical Center (UMC) in Las Vegas in 20 minutes. The UMC is designated as a Level I adult and Level II pediatric trauma center, has Nevada's only burn center, has a heart center and a transplant center, and is equipped with 11 resuscitation and 18 intensive care unit beds (UMC 2011). The UMC trauma center serves an area over 10,000 square miles including southern Nevada, parts of California, Utah, and Arizona.

If the patient's condition is not serious then a PVFRS paramedic ambulance transports the patient to Desert View Regional Medical Center in Pahrump, the closest hospital to the project site with an emergency room. Drive time between the project site and Desert View Regional Medical Center is approximately 45 to 50 minutes (HHS 2011a, pg. 5.16-23). Desert View Regional Medical Center is a 24-bed hospital with a 24-hour/7 day a week physician-staffed emergency room (DVRMC 2011). Minor injuries could also be treated at the Saint Rose Dominican Hospital in Henderson, Nevada (either the Rose de Lima or Siena campuses) or the UMC in Las Vegas. Both facilities have emergency departments, a full range of surgical and rehabilitative services, respiratory therapy, and radiology services (St Rose 2011).

Construction Impacts

Energy Commission staff contacted SIFPD and PVFRS staff to discuss the proposed project, ascertain their ability to provide emergency medical services to the project, and solicit comments or concerns they might have about the project. Staff has received comments from PVFRS and SIFPD and incorporated them in this analysis.

In response to staff's Emergency Medical Response Needs Assessment Form, SIFPD Acting Fire Chief, Larry Levy, stated that SIFPD would like to enhance their emergency medical services (EMS) in the Charleston View area to provide response times to the project site in the 5-10 minute range. This would require the acquisition of both facilities and equipment as well as the training of additional responders. SIFPD estimates that to achieve their desired response times they would need a three-bay station to house a new ambulance and existing fire apparatus in the project area and a minimum of two trained EMTs and four firefighters in the project area.

SIFPD expects that increased traffic would result in increased motor vehicle accident responses. The applicant estimated at least five (5) additional off-site vehicle accidents in the vicinity of the project site related to construction and workforce traffic (CH2 2012z, Table 6-4, pg. 6-10). For more information about traffic-related impacts, please see the **Traffic and Transportation** section of this **FSA**.

The applicant is actively engaged in discussions with SIFPD to ensure adequate fire and emergency service for the project. Discussions are ongoing. With the inclusion of Staff's proposed conditions of certification, **Worker Safety-6 and 7**, funding for increased emergency services would be provided, and impacts mitigated.

Operation Impacts

Facility operators would be trained as first responders and in safe operation, maintenance, and emergency response procedures to minimize the risk of personal injury (HHS 2011a, pg. 2-20). HHSEGS would operate in compliance with federal and state occupational safety and health program requirements. Compliance with these programs would minimize project effects on employee safety (HHS 2011a, pg. 2-21). The applicant states that the HHSEGS operation would not create significant adverse impacts on medical resources in the area due to the safety record of power plants and few operations staff. To protect the safety and health of workers during the construction and operation of HHSEGS, Worker Safety and Fire Protection staff is proposing two conditions of certification (**Worker Safety-1 and -2**) that would require the project owner to submit to the Compliance Project Manager (CPM) a copy of the Project Construction Safety and Health Program, and a copy of the Project Operations and Maintenance Safety and Health Program. Cal-OSHA's requirements are prescribed by, and contained within, the requested programs and plans. The project owner's compliance with proposed conditions of certification **Worker Safety-1 and -2** would help to mitigate impacts to emergency medical services.

Conclusion

SIFPD submitted an initial review of the draft FESNA on June 4, 2012 and the applicant and SIFPD stated they had entered into an agreement to negotiate at the June 27, 2012 PSA Workshop in Bishop, CA. At this time, Energy Commission staff has not been notified by the applicant or SIFPD that they have reached an agreement on how fire and emergency medical services will be provided and funded for the project site. Therefore, the **Worker Safety and Fire Protection** section of this document includes proposed Conditions of Certification **WORKER SAFETY-6** and **WORKER SAFETY-7** to ensure SIFPD has adequate funding. Staff concludes the HHSEGS would not significantly impact fire and emergency medical services if staff's proposed mitigations are implemented. For more information and proposed mitigation for fire protection and emergency medical services response, please see the **Worker Safety and Fire Protection** section of this document.

Law Enforcement

Affected Environment

The HHSEGS proposed project site is located within the jurisdiction of the Inyo County Sheriff's Department. There is a sheriff substation in Shoshone, approximately 34 miles from the project site. There are two resident deputies stationed in Shoshone who reside in County-owned housing. The patrol area for the deputies patrolling the HHSEGS site encompasses 3,200 square miles, consisting of both paved and unpaved roads (INYO 2012j, p. 19). This area includes the towns of Furnace Creek Ranch and Stovepipe Wells (both in Death Valley), which are located 60 and 90 miles from the Shoshone substation. The deputy on duty would likely respond from the patrol location, as they are

usually on patrol and on call in the service area and not present at the substation. As such, response time to an emergency on the project site ranges between 30 minutes to 4 hours (INYO 2012i, pp. 50-58). Depending on the type of assistance needed, and the geographic location of the other deputies, response time for any additional or specialized assistance could be an added 3 to 4 hours on top of the 30 minutes to 4 hours initial response time (INYO 2012b).

The California Highway Patrol (CHP) is the primary law enforcement agency for state highways and roads. The agency is predominately concerned with traffic safety, service to the motoring public, and protection of state property. The CHP does not have the legal authority to be the lead agency for general law enforcement and does not contract for general law enforcement duties. When appropriate, CHP officers can provide law enforcement assistance if the Inyo County Sheriff's Department requests such aid. CHP services include law enforcement, traffic control, accident investigation, and the management of hazardous materials spill incidents (HHSO 2011a, pg. 5.16-22). CHP has one resident patrol officer in Furnace Creek and one in Pahrump (CEC 2011y). Both officers are full time staff. The officers patrol the Death Valley area and if called can respond from the patrol area, or if off duty and needed, the officers can respond from their resident posts. The main area office is in Bishop (Inyo County). The Death Valley National Park Rangers can also respond to law enforcement calls when requested (HHSO 2011a, pg. 5.16-22).

Because the HHSEGS site is on the western border of the Nevada state line, the roads and highway in the vicinity (to the east of the project) are under the jurisdiction of the Nevada Highway Patrol (NHP). The closest NHP station to the project site is the Pahrump Substation on East Postal Drive in Pahrump (HHSO 2011a, pg. 5.16-22). CHP has a mutual agreement with the Nevada Highway Patrol (NHP) giving authority for up to 50 miles into each other's state when requested to provide assistance to one another (CEC 2011y).

The letter from the Inyo County Sheriff that was included in the February 16, 2012 Inyo County correspondence on county services and anticipated costs associated with HHSEGS (INYO 2012b, pg. 8), indicated that the Sheriff would need additional resources to serve the area during both the construction and operation of HHSEGS. The Sheriff's office provided estimates categorized as one-time initial costs totaling \$2,130,966.00, and annual on-going costs totaling \$1,269,120.00 for the first year, with an annual 4 percent increase each year for increased expenses. The one-time initial costs include hiring, training, and equipping seven new officers, constructing a new substation, and providing officer housing. On-going costs include salaries for the seven officers and one office manager, training, utilities, and other maintenance and administrative costs (INYO 2012b). After reviewing the applicant's UWA, the Sheriff's staff determined that during the construction phase an additional \$9,600 per month (in overtime costs) would be needed due to the estimated increase in peak workforce numbers and related traffic and general law enforcement. The total additional cost of overtime during the construction phase would be \$278,400 (INYO 2012i).

Following receipt of the February 16, 2012 letter from the Inyo County Sheriff, staff contacted the applicant to see if they had a contact at the San Bernardino County

Sheriff's office that could share their experiences in dealing with similar existing facilities in San Bernardino County. The San Bernardino County Sheriff's office in Barstow would respond to any law enforcement incidents at the Ivanpah construction site. In terms of fire protection, for example, the Ivanpah construction has only resulted in five calls to San Bernardino County since construction commenced in October 2010, and its construction activities and workforce are similar to that of the HHSEGS. (CH2 2012z, pg. 8-2)

The existing Solar Energy Generating Systems (SEGS) solar power plants in Daggett, Kramer Junction, and Harper Lake are all within about a 40-minute drive of the Sheriff's office in Barstow with close proximity to small neighboring communities and access from highways. The SEGS projects went online in the mid-1980s through the early 1990s. Staff contacted the Barstow office to get a sense of how often they have had to respond to the SEGS plants throughout their many years of operations. Sheriff Custody Assistant, Analeah Leon Guerrero, researched Sheriff's call log records through 2006 and found no records of incidents requiring Sheriff's staff response to the SEGS facilities or the Ivanpah construction site (CEC 2012o).

Staff also contacted the Las Vegas Metropolitan Police Department for calls for service and felony crime statistics in the Primm, Nevada area, where much of the Ivanpah labor force has resided in available lodging during construction. The groundbreaking ceremony marking the start of construction at Ivanpah was on October 27, 2010, and as of August 2012, construction is halfway complete. In the Primm area⁸ calls for service increased about 6 percent from 2010 to 2011; however, felony crimes decreased about 43 percent (CEC 2012ee). As most of the HHSEGS construction labor force is likely to reside in the much larger community of Pahrump, or in Las Vegas, it is not likely that Inyo County would experience changes in service calls similar to Primm.

At the March 13, 2012, Inyo County Board of Supervisors meeting, Sheriff William Lutze provided additional insights regarding the project site location based on his experience working in the vicinity (INYO 2012i, pp 50-58). He stated that comparing the HHSEGS site to the Ivanpah site is not reasonable and is likely to result in misinformation where impacts to response times and services are concerned. Sheriff Lutze grew up in the area and was the resident deputy in the area for eight years. He explained that there has been an increase in vandalism and theft in the area in recent years, such as bullet holes in signs and theft of metal items that can be sold as scrap. He expressed concern that because the project site is in such an isolated, yet accessible area, that it would be an attractive target for those who might want to steal construction equipment and materials. He also noted that the proposed project would need to be considered as part of the county's homeland security assessment because it would be a significant power plant (INYO 2012i, p. 56). For these reasons, the Sheriff advised the applicant to provide a comprehensive site security plan describing all proposed security measures for the project.

A Draft Construction Site Security Plan was filed under Confidential Cover with the Energy Commission on April 16, 2012, and later provided to the Inyo County Sheriff's Department. The Sheriff and his staff reviewed the Draft Construction Site Security

⁸ Statistics include Primm, Sandy Valley, Jean, and Good Springs, within Clark County, Nevada.

Plan and determined that as presented the plan did not lessen the need for additional resources as originally presented in the County's February 16, 2012 letter.

At the May 9, 2012 Staff Workshop, Sheriff Lutze explained that he determined the need for seven additional officers based on his knowledge that a 24-hour station needs 6.4 persons per day for staffing. Additionally, he stated that the current staffing situation in the southeast County requires five patrol officers, but only two are currently on staff. (CEC 2012t)

Conclusion

Staff's analysis in the *Socioeconomic and Fiscal Impacts of the Hidden Hills Solar Electric Generation System on Inyo County (Appendix Socio-1)*, including staff's review of other power plant projects and comments made in the May 9, 2012 Staff Workshop, shows that two additional resident deputies would be sufficient to provide adequate police protection and response times. With this increase in staffing at the Tecopa/Shoshone substation, it appears that patrol coverage would be sufficient such that an additional substation building would not be required.

As shown in **Appendix Socio-1**, the sales tax revenue that would be generated for the County during the construction period of HHSEGS would be far greater than the potential county expenditures estimated by Inyo County staff and by Energy Commission staff. Therefore, if Inyo County chooses to implement the full increases in Sheriff's Department resources as originally proposed in their February 16, 2012 letter, they would have the tax revenue to do so. Impacts to law enforcement from HHSEGS would be less than significant because the County would have adequate financial resources to provide appropriate Sheriff's protection to the project site and southern Inyo County.

Education

Affected Environment

The HHSEGS site is located within the Death Valley Unified School District (DVUSD). There are five schools in the DVUSD with a current enrollment of 64 students for the 2011/2012 school year. Staff contacted the DVUSD to obtain current enrollment counts and assess capacity of the school district. DVUSD staff reported that there would be no need to add any facilities if new students were to enroll in the District as the classrooms can physically accommodate approximately 20 students per classroom and the district has approximately 17 classrooms (CEC 2011x). DVUSD staff also explained that additional teachers may need to be hired if new students were to enroll in the district. **Socioeconomics Table 11** shows the current district enrollment and calculated capacity available for each school.

SOCIOECONOMICS Table 11
Death Valley Unified School District

Death Valley Unified School District	2011-2012 Enrollment (students)	Capacity (seats)*	Teachers
Death Valley Elementary	4	160	1
Shoshone Elementary (5th and 6th grades)	14	20	1
Tecopa-Francis Elementary (K to 4th grade)	13	40	1
Death Valley High Academy (7th to 12th grades)	32	100	5
Shoshone High (Continuation)	1	20	1
Total District	64	340	9
Notes: *Approximate capacity based on the number of classrooms with a capacity of 20 students per classroom. Source: CEC 2011x, CA DOE 2011, US CENSUS 2010i.			

There are 357 schools in the Clark County School District with a current enrollment of 309,480 students for the 2011/2012 school year and a capacity of 317,056 students (CEC 2011cc). The 357 total schools in the district are comprised of 217 elementary schools, 59 middle schools, 49 high schools, and 32 special/alternative schools. As **Socioeconomics Table 12** shows, the district is within capacity, but the elementary and special/alternative education schools are above capacity.

SOCIOECONOMICS Table 12
Clark County School District

Clark County School District	2011-2012 Enrollment (students)	Capacity (seats)
Elementary	147,492	139,211
Middle	72,331	83,435
High	86,788	92,744
Special/Alt. Ed.	2,869	1,637
Total District	309,480	317,056
Source: CEC 2011cc.		

Schools within the Nye County School District range widely in size from a single classroom school to a school with 40 to 50 classrooms, so staff focused on schools within the Pahrump Valley. There are six schools in Pahrump Valley, four elementary, one middle school, and one high school. **Socioeconomics Table 13** shows the enrollment and available capacity for each of the Pahrump Valley schools.

SOCIOECONOMICS Table 13
Nye County School District (Pahrump Valley)

Nye County School District (Pahrump Valley area only)	2011-2012 Enrollment (students)	Excess Capacity (seats)
Elementary	1,870	+500
Middle	1,042	+200
High	1,300	+200 to 400
Total Pahrump Valley	4,212	+900 to 1,100
Source: CEC 2011n.		

A new addition to the high school was completed in January, 2012. At that time, all students moved into the addition as a part of Phase I. Under Phase II, the existing high school will be remodeled and once completed in late 2012, the 9th graders will be moved back into the newly remodeled school. With the completion of Phase II, Pahrump Valley High will have a total capacity for 1,600 students.

Construction Impacts

During construction, staff expects the majority of the labor force would commute daily from the region. Based on the Updated Workforce Analysis (UWA), work would be scheduled on a five day-per-week, 10 hour-per-day basis, comprised of a day shift and swing shift. This would allow construction workers who have temporarily relocated during the construction period to commute to the site either Sunday evening (day shift) or Monday morning (swing shift), and then head home either Friday afternoon (day shift) or early Saturday morning (swing shift). Based on communication with the various BTCs, and examples from other solar projects, staff does not expect construction workers to relocate their families to the project area; therefore, staff does not expect a significant adverse impact to the schools from construction of the proposed project.

Operation Impacts

An estimated 100 permanent workers would be needed to operate the HHSEGS, once constructed. The AFC states that five percent of the 100 operational employees (five workers) would come from Inyo County (HHSG 2011a, pg. 5.10-30). Based on the average family size in Inyo County of 2.88 persons per household, there would be an estimated addition of five students to the Death Valley Unified School District. As shown in **Socioeconomics Table 11**, there would be ample capacity available within the school district to accommodate the additional children. The HHSEGS operation would not create any significant adverse impacts to the local school system.

As noted in **Socioeconomics Table 1**, Section 17620 of the Education Code states “The governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstruction of school facilities.” State and local agencies are precluded from imposing additional fees or required payments on development projects for mitigating possible enrollment impacts to schools. The current statutory school fees for the 2011-2012 fiscal year for commercial or industrial development within the Death Valley Unified School District is \$0.47 per square foot of covered and enclosed space (CEC

2011x). The applicable fees are calculated prior to the issuance of building permits during plan review. Based on the preliminary project design, approximately 23,673 square feet would be considered occupied structures (HHSG 2011a, pg. 5.10-30). Based on this preliminary estimate, approximately \$11,126.31 in school fees would be assessed for the Death Valley Unified School District.

Conclusion

Staff is proposing Condition of Certification **SOCIO-1** to ensure the payment of fees to the Death Valley Unified School District and compliance with Section 17620 of the Education Code through the one-time payment of statutory school impact fees. Staff concludes the project would not adversely impact service levels for schools and would have a less than significant impact on schools.

Parks

Inyo County Parks and Recreation offers outdoor recreation by providing fifteen parks and campgrounds within the county for residents and visitors. The closest facility is the Tecopa Hot Springs Park & Campground located approximately 26 miles southwest of the project site (INYO 2010b). Staff's analysis shows that the construction and operation of the HHSEGS would not induce population growth in the project area. Given the shortage of residential, commercial, and service-oriented development in the immediate project area, staff does not expect construction or operations workers to permanently relocate to the project area. Therefore, staff concludes that the construction or operation workforce would not have a significant adverse impact on parks or necessitate construction of new parks in the area.

Conclusion

Staff concludes the project would have a less than significant impact on parks.

Other Services

In addition to the comments from the Sheriff's office, the February 16, 2012 letter from Inyo County included preliminary estimates of the fiscal impacts of construction and operation of the HHSEGS project on several other county departments (INYO 2012b). The County provides non-law enforcement services to the Charleston View community near the proposed HHSEGS site with limited local staff, based in Tecopa, and supplements those services with staff from other County offices located in Lone Pine, Independence and Bishop (INYO 2012j, p.19). The County's total estimated costs associated with construction of HHSEGS amount to \$11.4 million in expenditures, with \$1.7 million in additional annual expenditures expected during the operation period of the project.

Each department head who contributed to the February 16, 2012 letter made a public presentation of their HHSEGS impact estimations (for construction and operation) during a special Inyo County Board of Supervisors meeting held on March 13, 2012 in Independence. Departmental management and representatives from the County also attended the May 9, 2012 Issues Resolution Workshop in Sacramento to present and discuss their estimates with staff and other parties to the HHSEGS proceeding, including the applicant. County staff have consistently stated that the remote location of

the project site raises legitimate logistical concerns for county administrators because the majority of their existing available offices and resources are concentrated within the communities of Independence and Bishop, more than 200 miles northwest of the project site, in the northern part of Inyo County. In addition to the Sheriff's Department, the identified fiscal impacts were to the following county departments: Agricultural Department, Assessor's Office, Health and Human Services, Information Services, the Inyo County Motor Pool Program, the Department of Public Works, Waste Management and the Inyo County Water Department.

As discussed above, Inyo County is the second largest county in California in land area and has the sixth smallest population of counties in California, with much of the land publicly owned. Because the tax base is smaller than many other counties in California and the land area so large, the county has not yet been able to invest in the level of infrastructure and public services that would be needed to service large-scale industrial developments in the remote, southeastern portion of the county, such as HHSEGS.

Conclusion

The applicant was available at the March 13, 2012, Inyo County Board of Supervisors meeting and was encouraged to work closely with Inyo County planning staff and department heads to understand the costs identified by the County, and to ensure that Inyo County Staff had the requisite information they need to understand the potential impacts (and benefits) from the project. At the April 26, 2012 workshop at the Energy Commission, staff and Inyo County again addressed the applicant on the potential economic and fiscal impacts of the projects on the county.

To help quantify the economic and fiscal impacts to the county noted in its February 16, 2012 letter, staff prepared a report to determine the benefits and the costs of the HHSEGS to Inyo County, which is included as **Appendix Socio-1** of this document. Staff concluded that over the life of the project, the County would gain about \$33.2 million net present value. The sales tax revenue alone generated for the County during the construction period would be far greater than the potential county expenditures estimated by Inyo County staff and by Energy Commission staff.

Preliminary cost estimates from the Inyo County departments of Public Works, Agriculture, Waste Management, and Water received in the February 16, 2012 letter are addressed in the **Traffic and Transportation, Biological Resources, Waste Management, Soils and Surface Water** and **Water Supply** sections of this **FSA**.

CUMULATIVE IMPACTS AND MITIGATION

A project may result in significant adverse cumulative impacts when its effects are cumulatively considerable; that is, when the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects [Public Resources Code Section 21083; California Code of Regulations, Title 14, Sections 15064(h); 15065 (c); 15130; and 15355]. Mitigation requires taking feasible measures to avoid or substantially reduce the impacts.

In a socioeconomic analysis, cumulative impacts could occur when more than one project in the same area has an overlapping construction schedule, thus creating a demand for workers that cannot be met locally, or a demand for public services that does not match a local jurisdiction's ability to provide such services. An influx of non-local workers and their dependents can strain housing, schools, parks and recreation, law enforcement, and medical services.

The project site is in Inyo County, along the California and Nevada border. Adjacent on the Nevada side of the state border is Nye County, with Clark County in close proximity. HHSEGS construction is anticipated to begin in the second quarter of 2013 and continue through the fourth quarter of 2015. The AFC evaluated projects within a 20-mile distance from the project site for the potential of creating cumulative impacts. Although there are a number of projects that are currently under development in the vicinity of the HHSEGS that could potentially have an adverse cumulative socioeconomic effect, most of these projects have not advanced to the point where enough is known about them in terms of construction workforce requirements or construction schedule (HHS 2011a, pg. 5.10-31).

The HHSEGS construction labor is expected to primarily come from unions in the counties of Kern, Inyo, and Mono, which the BTC serves. As shown in **Socioeconomics Tables 5 and 6**, the project would require workers of various specialized trades, which is common for construction of similar renewable energy plants. Although there are non-renewable energy projects in the vicinity of HHSEGS that are in various stages of development, they are not expected to conflict with the construction of HHSEGS because of the requirements of the construction workforce.

The nearby St. Therese Mission project is currently under construction, and would not likely employ the same types of specialized trade workers as HHSEGS. Agreements for the Pahrump Valley Airport are being coordinated between the Town of Pahrump, BLM, and the Federal Aviation Administration (FAA); once completed, the EIS process is expected to take several years. Therefore, staff considered a geographic area for cumulative impacts of Clark, Nye, Kern, Inyo, and Mono counties and sought out reasonably foreseeable renewable energy projects that may have overlapping construction schedules with HHSEGS. Staff also included projects in San Bernardino County due to its proximity to the south of the project site and the multitude of renewable energy projects proposed there in recent years.

Socioeconomics Table 14 lists the projects considered part of the HHSEGS cumulative scenario, from a socioeconomic resources perspective. **Socioeconomics Figure 3** displays the cumulative project locations on a map. Staff reviewed project tracking information and available environmental reports and notices on the websites of local jurisdictions and the BLM, and spoke with project managers from various agencies to compile the list.

SOCIOECONOMICS Table 14
Cumulative Socioeconomic Projects

ID #	Project Name	Peak Construction Workers	Operation Workers	Construction Begin	Construction End
	HHSEGS	2,293	100	2nd Qtr 2013	4th Qtr 2015
F	Silver State South Solar	230-400	70-100	3 rd Qtr 2012	4 th Qtr 2014
G	Stateline Solar	500	7-10	4 th Qtr 2013	4 th Qtr 2015
I	Searchlight Wind Energy	250-300		2012	2013
J	Southern Owens Valley Solar Ranch	300	10	3 rd Qtr 2012	3 rd Qtr 2015
N	Hidden Hills Valley Electric Transmission	66		4 th Qtr 2012	1 st Qtr 2015
O	Calnev Pipeline Expansion	550-650		2012	2013/1014
	Total	4,189-4,509	187-220		

Source: US BLM 2012a, US BLM 2012b, US BLM 2012c, LADWP 2010, CH2 2012jj.

The applicant estimates a peak construction workforce of 2,293 workers during HHSEGS construction. An operations workforce of 100 workers would be needed for the project. As mentioned above, the operations workforce is, by and large, not anticipated to relocate to the immediate project area. **Socioeconomics Table 5** presents the total labor force for the crafts specifically needed for the construction of HHSEGS. As shown in the table, the labor force within the Eastern Sierra Region, Bakersfield MSA, and Las Vegas-Paradise MSA are more than sufficient to accommodate the labor needs for construction and operation of the HHSEGS and other probable future projects. Staff knows of no other projects currently under construction that could overlap with the construction schedule and workforce requirements of HHSEGS.

The HHSEGS does not directly or indirectly impact parks and housing and would not contribute to a cumulative impact to law enforcement, parks and housing; the HHSEGS would not directly or indirectly induce population growth, displace substantial numbers of people and/or existing housing or contribute to a cumulative impact in these areas. Assuming six operational employees reside in Inyo County, the estimated addition of five to six children as a result of the operational employees families would be an addition the DVUSD could readily accommodate. Staff’s proposed Condition of Certification **SOCIO-1** would ensure applicable school fees are paid by the project. The increased usage of neighborhood or regional parks or other recreational facilities as a result of the project would be minimal. At this time, staff cannot conclude whether the HHSEGS would significantly impact emergency services and would contribute to a cumulative impact in this area.

POTENTIAL FOR PROJECT’S GAS PIPELINE AND ELECTRIC TRANSMISSION LINE TO INDUCE GROWTH IN THE PROJECT AREA

The CEQA Guidelines (Section 15126.2(d)) address whether projects which would remove obstacles to population growth could be growth-inducing, such as a major expansion of a waste water treatment plant that allows more construction in a public service area. This section analyzes the project’s natural gas pipeline and electric

transmission line and the potential for this new infrastructure to induce growth in the project area.

Overview of Development in the Area

In the 2001 Inyo County General Plan, the Charleston View area was designated Open Space and Recreation (OSR) and Resort/Recreational (REC) and the zoning was Open Space 40-acre minimum (OS-40). In 2011, Charleston View was one of 14 areas within the county identified for potential renewable energy development by the Inyo County Board of Supervisors. The most recent General Plan Progress Report notes that two conditional use permits were granted in 2010 in the Charleston View area: one for the St. Therese Mission environmental park development and another for placing a temporary weather monitoring station to see if the area is viable for solar energy production (Inyo County 2011a).

Beginning in the late 1950's, the Charleston View area, including the HHSEGS site, was subdivided into small- and medium-size parcels. An unpaved road grid system remains from that past activity, which would have been used had the residential developments occurred. However, given the low level of infrastructure development, and public services in the area combined with the scarcity of groundwater resources (see discussion below), no significant development occurred, no improvements were implemented, and no infrastructure was brought to the site. The proposed project site is currently undeveloped, vacant private land.

Project Infrastructure/Service Capacity Increase

In a letter to the U.S. Bureau of Land Management (BLM), dated December 6, 2011, the Chair of the Inyo County Board of Supervisors identified the project's electric transmission line and natural gas pipeline as potential triggers for growth-inducing impacts (INYO 2011b).

The electric transmission line and natural gas pipeline would be located on BLM managed lands and an environmental analysis pursuant to NEPA will be prepared by BLM as the lead agency (HHSG 2011a, pg. 1-3). In early February 2012, BLM released a Scoping Report for the Hidden Hills Transmission Project which identified various comments on cumulative and growth-inducing impacts related to the HHSEGS electric transmission line and natural gas pipelines, and additional renewable resource generation facilities in Nevada. These comments were submitted by various local government agencies including Inyo County (INYO 2011b), environmental groups (Basin and Range Watch), and members of the public. Response to these comments would be part of the Draft Environmental Impact Statement (DEIS) which is scheduled to be published in late December, 2012 or early January, 2013.

Natural Gas Pipeline

A 12-inch-diameter natural gas pipeline would be required for the project. The gas pipeline would enter the HHSEGS site in the common area where it would connect with an onsite gas metering station. It would exit the HHSEGS site at the California-Nevada border, extending 32.4 miles to the Kern River Gas Transmission (KRG T) existing

mainline system just north of Goodsprings in Clark County, Nevada. Because of the gas line's exclusive use by HHSEGS, staff concludes the gas pipeline would not induce any additional growth in the project area.

Electric Transmission Line

HHSEGS will interconnect to the Valley Electric Association (VEA) system.⁹ The interconnection would require an approximately 10-mile-long generation tie-line (gen-tie line) from the HHSEGS to the proposed Crazy Eyes Tap Station,¹⁰ where the project would interconnect to the VEA electric grid. The gen-tie line would originate at the HHSEGS' onsite switchyard, cross the Nevada state line, and continue east for approximately 1.5 miles until reaching Tecopa Road. At Tecopa Road, the route would head northeast paralleling Tecopa Road until it reaches the Crazy Eyes Tap Substation, which would be located immediately east of the Tecopa Road/SR 160 intersection.

Staff has reviewed the **Transmission System Engineering** section of this **FSA**, which notes that the generator tie-line is rated to carry the full output of the project. The applicant has stated that power generated at HHSEGS would go to Pacific Gas & Electric (PG&E) under two power-purchase agreements approved by the California Public Utilities Commission in 2010, and this power would serve electricity needs in PG&E's service territory (HHSG 2011b). A small amount of electric power would be used onsite to power auxiliaries such as pumps and fans, control systems, and general facility loads including lighting, heating, and air conditioning. Additionally, some power would also be converted from alternating current (AC) to direct current (DC) and stored in batteries on site, which would be used as backup power for the plant control systems and essential uses. No other electrical power would be made available, either onsite, or offsite.

For these reasons, staff concludes the project's transmission infrastructure would not induce any additional growth in the project area. Staff has not assigned significance to impacts or required mitigation for the project's electrical and gas infrastructure in Nevada since that is the responsibility of the BLM.

Limitations to Development

As discussed in the **Water Supply** section of this **FSA**, the Pahrump Valley groundwater basin (PVGB), which includes the Charleston View area, has experienced significant declines in groundwater levels during the last 100 years. The PVGB has experienced average water level declines of approximately one foot per year since the 1950s. Staff believes the scarcity of local groundwater resources is a serious constraint to any significant development. New commercial/residential development is also constrained in the local area by the Open Space Recreation and Resort/Recreation land use designations, which are more fully discussed in the **Land Use** section of this **FSA**.

⁹ In January, 2013, VEA will become a participating transmission owner (PTO) and will turn operational control of its facilities over to the California Independent System Operator (CAISO).

¹⁰ In the HHSEGS AFC, and in the Preliminary Staff Assessment published on 5/24/2012, this substation was referred to as the "Tap Substation."

RESPONSE TO COMMENTS

Several comments were received on the Preliminary Staff Assessment during the public review period. Staff has reviewed these comments and has incorporated applicable edits and discussion into this **FSA**. For a listing of all of the staff's responses, please refer to **Appendix 2**, PSA Response to Comments, Growth-Inducing Impacts.

CONCLUSIONS AND PROPOSED FINDINGS OF FACT

Natural gas used to augment the solar operation at HHSEGS would be provided by a 12-inch gas pipeline and would not be available for any additional development; therefore, the project's gas pipeline would not induce any additional growth in the project area. The bulk of electricity generated by HHSEGS would provide power to the proposed VEA Crazy Eyes Substation, which would go to PG&E pursuant to two power-purchase agreements, and a small amount would be used on site for auxiliary power plant operational purposes; therefore, the project's 230-kV transmission line to the VEA Crazy Eyes Substation would not induce any additional growth in the project area. The scarcity of local groundwater resources and the existing land use designations are serious constraints to any significant economic development in the project area.

In terms of impacts on BLM land in Nevada, the HHSEGS is one of several renewable energy projects that are being reviewed by BLM. As the lead federal agency under the National Environmental Policy Act, BLM has the responsibility to analyze the various issues related to the proposed energy projects, including growth-inducing impacts. Growth-inducing and cumulative impacts were identified in several comments in the BLM Scoping Report for the VEA Hidden Hills Transmission Project, and would be discussed more fully in the forthcoming BLM DEIS. Staff has not assigned significance to impacts or required mitigation for the project's electrical and gas infrastructure in Nevada since that is the responsibility of the BLM.

PROPOSED FINDINGS OF FACT

Based on the analysis above, staff makes the following proposed findings:

1. The HHSEGS would involve the construction and operation of a 230-kV electric transmission line.
2. HHSEGS would require a 12-inch-diameter natural gas pipeline.
3. Both linears would be located on BLM managed lands and would be analyzed in a DEIS scheduled to be released in December, 2012 or January, 2013.
4. The project's natural gas pipeline and electric transmission line would not induce any additional growth in the project area.
5. The Pahrump Valley groundwater basin, which includes the Charleston View area, has experienced significant declines in groundwater levels during the last 100 years and staff believes this is a serious constraint on any significant development. Current land use designations are an additional constraint on new commercial/residential development in the local area.

NOTEWORTHY PUBLIC BENEFITS

The AFC provided an estimate of the direct, indirect, and induced impacts resulting from the construction and operation of the HHSEGS project based on an IMPLAN model analysis. IMPLAN is an input-output model that relies on a series of multipliers to provide estimates of the number of times each dollar of input or direct spending cycles through the economy in terms of indirect and induced output, or additional spending, personal income, and employment. The IMPLAN model is widely used by governmental agencies, trade associations, and public interest research groups.

According to the AFC, indirect and induced economic impacts from construction typically lag behind direct effects by 6 to 12 months, beginning approximately between the fourth quarter of 2013 and the second quarter of 2014. Indirect and induced economic impacts from the operation would lag behind direct effects by 6 to 12 months, beginning approximately between the second quarter of 2014 and fourth quarter of 2014. **Socioeconomics Tables 15 and 16** present the IMPLAN results presented in the UWA. These IMPLAN results are based on the applicant's assumption that 70 percent of the construction workforce would be drawn from California and 30 percent from Nevada.

At the March 13, 2012, Inyo County Board of Supervisors meeting, the supervisors encouraged the applicant to work with their EPC contractor to develop programs to entice young people within the county to join the project workforce (INYO 2012i, pp 141-142).

SOCIOECONOMICS Table 15
HHSEGS Economic Benefits from Construction (2011) dollars

Fiscal Benefits	5-County ¹ Region, CA	Clark & Nye counties, NV	Total
State and local sales taxes:			
Construction (annual)	\$3,875,000 ²	\$1,721,480	\$5,571,590
Non-Fiscal Benefits			
Total capital costs	\$2.2 billion	\$ 0	\$ 2.2 billion
Construction payroll	\$185.3 million	\$120 million	\$213.7 million
Construction materials and supplies	\$50 million	\$21.4 million	\$71.4 million
Direct, Indirect, and Induced Benefits			
Estimated Direct Benefits			
Jobs (average)	769	329	1,098
Estimated Indirect Benefits			
Jobs	89	41	130
Income	\$3,594,400	\$1,687,620	\$5,282,020
Estimated Induced Benefits			
Jobs	409	257	666
Income	\$15,189,370	\$11,131,100	\$26,320,470
¹ The 5-county region is: Inyo, Mono, Kern, Riverside, and San Bernardino counties. ² Estimate applies to Inyo County only. Source: CH2 2012jj			

SOCIOECONOMICS Table 16
HHSEGS Economic Benefits from Operation (2011) dollars

Fiscal Benefits	Inyo County, CA	Clark & Nye counties, NV	Total
Estimated annual property taxes	\$3.9 million	\$0	\$3.9 million
State and local sales taxes:			
Operation (annual)	\$2,090	\$41,010	\$43,100
School Impact Fees (estimated)	\$11,126.31	\$ 0	\$ 11,126.31
Non-Fiscal Benefits			
Operations payroll (annual)	\$652,180	\$12,391,330	\$13,043,500
Operations and maintenance supplies (annual)	\$27,000	\$513,000	\$540,000
Direct, Indirect, and Induced Benefits			
Estimated Direct Benefits			
Jobs	5	95	100
Estimated Indirect Benefits			
Jobs	0	2	2
Income	-	\$97,630	\$97,630
Estimated Induced Benefits			
Jobs	2	62	64
Income	\$60,150	\$2,697,310	\$2,757,460
Source: CH2 2012jj			

In Data Response SE-3, the applicant stated that they are willing to work with Inyo County to maximize the allocation of sales and use tax to the county given the supply chain that will be established for construction of the project. A similar arrangement has worked well with San Bernardino County at Ivanpah SEGS, and it is anticipated that a similar arrangement would work equally well with the HHSEGS Project (CH2 2012u).

Staff prepared a report on the socioeconomic and fiscal impacts of the project on Inyo County, which is included as **Appendix Socio-1** of this document. **SOCIOECONOMICS Table 17** shows that based on staff's analysis of the information available, county agencies would receive about \$33.2 million more than it expends over the life of the project. Staff is proposing Condition of Certification **SOCIO-3**, to ensure economic benefits to the County by obtaining the receipt of sales and use tax revenues.

SOCIOECONOMICS Table 17
Net Fiscal Impacts on Inyo County: 28 Years

	Construction (29 Month Total)	Operation (Years 1-3)	Operation (Years 4 on)	Net Present Value
Revenues	\$30,043,00	\$801,000	\$801,000	\$37,289,000
Expenditures	\$2,791,000	\$388,000	\$58,000	\$4,054,000
Net Impact	\$27,252,000	\$413,000	\$743,000	\$33,200,000
Source: Appendix Socio-1 <i>Socioeconomic and Fiscal Impacts of the Hidden Hills Solar Electric Generation System on Inyo County</i>				

PROPERTY TAX

The AFC states the proposed HHSEGS would generate property tax revenue to Inyo County, California. As the legislation currently stands, HHSEGS, if under construction

by January 1, 2017, qualifies for the exclusion of certain parts from valuation per the Revenue and Taxation Code, Section 73. The applicable property tax rate for the project site is one percent. Assuming the property tax exemptions apply, Inyo County would receive about \$3.9 million annually. This additional property tax revenue would constitute an almost 23 percent increase in the total county taxes over fiscal year 2010 amounts. (HHS 2011a, pg. 5.10-29)

Staff's report *Socioeconomic and Fiscal Impacts of the Hidden Hills Solar Electric Generation System on Inyo County* (**Appendix Socio-1**) estimates that after the project becomes operational, Inyo County government would receive \$0.75 million more in property taxes annually from the parcels within the project's boundaries than is currently being received for those parcels.

RESPONSE TO AGENCY AND PUBLIC COMMENTS

Please see **Appendix 1** – PSA Response to Comments, Socioeconomics

PROPOSED FINDINGS OF FACT

Staff concludes the HHSEGS would not cause a significant adverse direct, indirect, or cumulative socioeconomic impact as a result of the construction or operation of the proposed project in the areas of population, fire and emergency medical services, law enforcement, housing, schools, parks and recreation, based on the following proposed Findings of Fact:

1. The project's construction and operation workforces would not directly or indirectly induce a substantial population growth in the project area.
2. The project's construction and operation workforce would not have a significant adverse impact on housing within the project area and would not displace any people or housing, or necessitate construction of replacement housing elsewhere.
3. The project would not result in substantial adverse physical impacts to schools.
4. The project would not increase the use of existing neighborhood and regional parks or recreational facilities to the extent that substantial physical deterioration of the facility would occur or be accelerated, and new parks are not proposed by or needed as a result of the project.
5. The sales tax revenue generated for Inyo County during the construction period would be greater than the estimated potential County expenditures. Therefore, the County would have adequate financial resources to provide appropriate Sheriff's protection to the project site and southern Inyo County.
6. The construction and operation of the project would not significantly impact the local fire district if proposed Conditions of Certification **WORKER SAFETY-6** and **WORKER SAFETY-7** are implemented.

PROPOSED CONDITIONS OF CERTIFICATION

SOCIO-1 The project owner shall pay the one-time statutory school facility development fees to the Death Valley Unified School District as required by Education Code Section 17620.

Verification: At least 30 days prior to the start of project construction, the project owner shall provide to the Compliance Project Manager (CPM) proof of payment to the Death Valley Unified School District of the statutory development fee.

SOCIO-2 Information regarding illegal and unauthorized camping shall be provided to all onsite personnel at the time of their Worker Environmental Awareness (WEAP) training.

Verification: At least 60 days prior to the start of any project-related pre-construction site mobilization, the project owner shall provide to the CPM (for review and approval, and to Inyo County for review and comment), electronic copies of the information regarding illegal and unauthorized camping that will be provided to all onsite personnel at the time of their WEAP training. At least 30 days prior to the start of any project-related pre-construction site mobilization, the project owner will provide two copies of the final information regarding illegal camping to the CPM and implement the training for all workers at the time of their WEAP training.

SOCIO-3 In order to ensure economic benefits to the County and to the State of California as intended by the enactment of the Renewables Portfolio Standard¹¹ by obtaining the receipt of sales and use tax revenues, the project owner will work with the County and the contractors that will be responsible for the acquisition of materials and the construction of the Project so sales and use tax shall be accepted in the unincorporated area of the County of Inyo. A signed and notarized statement from someone authorized to sign on behalf of the project owner shall include terms mutually acceptable to the County and the project owner indicating a good faith effort will be made to ensure the receipt of sales and use tax revenue in the unincorporated area of the County of Inyo. Terms that would ensure the receipt of sales and use tax could include, but not be limited to, the following:

1. Make a good-faith effort to have all transactions that will generate sales and use taxes, including transactions of project owner's contractors, occur in the unincorporated area of the County;
2. Encourage the contractors to establish a business location and tax resale account, and take other reasonable steps, to maximize receipt of sales and use tax revenues for the County;
3. Include in a master contract and any other contract for construction, language ensuring that the County will receive the benefit of any sales

¹¹ The State of California's Renewables Portfolio Standard is established and amended in CA Public Utilities Code § 399.11 et seq., CA Public Resources Code § 25740 et seq., and SBX1-2.

and use tax generated by the Project to the fullest extent permitted by law;

4. Include the following provision from California Board of Equalization, Regulation 1806(b), in all construction contracts:

The jobsite is regarded as a place of business of a construction contractor or subcontractor and is the place of sale of "fixtures" furnished and installed by contractors or subcontractors. The place of use of "materials" is the jobsite. Accordingly, if the jobsite is in a county having a state administrated local tax, the sales tax applies to the sale of the fixtures, and the use tax applies to the use of the materials unless purchased in a county having a state-administrated local tax and not purchased under a resale certificate.

5. In all agreements related to the Project, identify the jobsite as the project address, which is located within the unincorporated area of the County of Inyo;
6. If the project owner enters into a joint venture or other relationship with a contractor, supplier, or designer, the project owner shall either establish a buying company within Inyo County under the terms and conditions of Board of Equalization Regulation 1699(h), to take possession of any goods on which sales and use taxes are applicable but are not defined by Regulation 1806 and shall include in it their requests for bids, procurement contracts, bid documents, and any other agreement whereby California Sales and Use Taxes may be incurred, that the sale occurs at that place of business in the unincorporated area of Inyo County; or, alternatively, any entity that may sell goods on which sales taxes are applicable may establish its own place of business within the unincorporated area of Inyo County where delivery is ultimately made to the project owner; principle negotiations for all such sales shall be carried on in Inyo County;
7. Provide notice to all out-of-state suppliers of goods and equipment, no matter where originating, that Inyo County is the jurisdiction where the first functional use of the property is made.

Verification: At least 30 days prior to the start of any project-related pre-construction site mobilization, the project owner shall provide to the CPM (for review and approval, and to Inyo County for review and comment), a signed and notarized statement from someone authorized to sign on behalf of the company, with language acceptable to the company and the CPM specifying the terms related to sales and use taxes

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APPENDIX SOCIO-1: SOCIOECONOMIC AND FISCAL IMPACTS OF THE HIDDEN HILLS SOLAR ELECTRIC GENERATING SYSTEM ON INYO COUNTY

Dr. Richard McCann, MPP, Ph.D.

EXECUTIVE SUMMARY

This fiscal impact report estimates a range of potential economic impacts in jobs and spending under reasonably foreseeable scenarios for a solar project proposed on privately owned land in Inyo County (County). It also assesses changes in the County government's fiscal situation if the proposed project is built, using the best available data and constructing reasonably foreseeable scenarios.

The study evaluates of the following project under review by the County. The Hidden Hills Solar Electric Generating System (HHSEGS) project is proposed by BrightSource Energy. BrightSource proposes to construct and operate two solar fields, each consisting of 250 MW, for a total of 500 MW.

The two scenarios examined differ in their assumptions of county expenditures resulting from the proposed project and sales and use tax revenue to Inyo County agencies.

Scenario 1: County estimates of mitigation costs associated with the project are used. This amounts to \$11.4 million in expenditures during the construction period and \$1.7 million in annual expenditures during the operation period. Mirror costs are not included in sales and use tax base under the case that the vendor applies for and receives a state manufacturing exemption, and sales tax generated from employee spending are not included in revenues to the County. This amounts to revenues of \$24.1 million during the construction period and annual revenues of \$0.77 million during the operation period.

Scenario 2: Revised estimates of \$2.7 million in construction period expenditures and \$0.39 million annual operation period expenditures in the first three years and \$0.06 million thereafter generated by our staff based on new information and analysis are used. Mirror costs are included in the sales and use tax base, and sales and use tax generated from employee spending is included in revenues. This amounts \$30 million in revenues during the construction period and \$0.80 million in annual revenue during the operation period.

The proposed project is expected to cost in the range of \$2.2 billion in total to construct with direct material costs of roughly \$1.05 billion, based on estimates for the solar power tower technology provided by the applicant. Using conservative assumptions about where plant components are assembled, a reasonably foreseeable scenario is that about \$50 million of the total value of materials and supplies would be purchased locally over three years. However, staff assumes only \$0.23 million (0.46 percent) would be spent within Inyo County, and the remaining \$49.7 million (99.54 percent) would be

spent in neighboring counties in California. This level of spending could be expected to directly produce two jobs within Inyo County and 1,096 jobs in the neighboring counties, indirectly create seven jobs within the County, and induce another 41 positions within the County. Such spending would increase County economic output by \$41.6 million and earnings by \$2.8 million over the 29-month construction period.

Annual operational payroll and spending on operating costs of the project are projected by the applicant to be about \$13.04 million and \$0.54 million, respectively, with 5 percent going to the County. This could directly produce five jobs, indirectly generate approximately three jobs and induce 11 jobs in the County. County economic output could rise by \$2.2 million and earnings by \$1 million.

The proposed project would generate between \$82.9 to \$100.4 million in total sales and use tax revenues over three years based on the cost estimates presented here of which \$24.1 to \$29.2 million would go to the County based on the representations by the project proponents and state tax allocation formulas. This amount represents the maximum available assuming the County and state take the actions necessary to ensure compliance with tax collection. Of this amount, \$8 to \$9.7 million would go directly to the County General Fund for city and county operations, and \$5.3 to \$6.5 million would go to Special Districts in the County as part of the Rural Counties Transaction Tax. \$10.7 to \$13 million would be provided to the County indirectly through the Local Public Safety and Local Revenue Funds allocated from state revenues. The proposed project is unlikely to qualify for a sales tax exemption that sets the lower bound on this estimate for several reasons discussed in this report. After the project becomes operational, the County government would receive a levelized annual amount of \$0.75 million more in property taxes annually from the parcels encompassed in the project's boundaries than is currently being received for those parcels. The proposed project would avoid \$16.25 million annually in property taxes based on this cost estimate with the state exemption. However, if the project is sold, the new owners would be liable for this amount.

Construction and operation of the project would require the County to pay additional costs for public safety and other services in the local area. As noted above, staff generated scenarios in which the cost of these services would be between \$2.7 and \$11.4 million during construction and approximately \$0.39 million for the first three years and \$58,000 annually thereafter to \$1.7 million per year during plant operations.

Other County costs outside of Charleston View are not expected to change substantially. While most of the labor force will be coming from outside the County, the applicant projects that most will reside in Nevada for the duration, so the County population and workforce are expected to remain stable. Thus general County government expenditures should remain stable. Although social welfare and public health expenditures may decrease as unemployment decreases and socioeconomic conditions improve, no reliable estimation method is available to calculate those impacts. Such a study would require an in-depth analysis of affected departmental budgets that is beyond the scope of this analysis.

Appendix Socio-1 Table 1 and **Table 2** summarize the net fiscal impacts during the construction and operational periods for both scenarios. During the 29-month construction period, County agencies would receive about \$12.6 to \$27.3 million more than it expends. Once operational, the County would annually expend between \$0.94 million more than it receives and up to \$0.75 million less than it receives after the first three years of operation.

**APPENDIX SOCIO-1 Table 1
Net Fiscal Impacts on Inyo County: 28 Years, Scenario 1**

	Construction (29 Month Total)	Operation (Annual)	Net Present Value
Revenues	\$24,069,000	\$773,000	\$31,471,000
Expenditures	\$11,408,000	\$1,714,000	\$31,337,000
Net Impact	\$12,661,000	(\$941,000)	\$100,000

**APPENDIX SOCIO-1 Table 2
Net Fiscal Impacts on Inyo County: 28 Years, Scenario 2**

	Construction (29 Month Total)	Operation (Years 1-3)	Operation (Years 4 on)	Net Present Value
Revenues	\$30,043,000	\$801,000	\$801,000	\$37,289,000
Expenditures	\$2,791,000	\$388,000	\$58,000	\$4,054,000
Net Impact	\$27,252,000	\$413,000	\$743,000	\$33,200,000

This analysis has several key caveats which could alter the results and conclusion significantly if the situation changes. The first is that the overall project cost estimates are based on published sources and only partially reflect the actual costs that will be revealed once the project is constructed and assessed by the County Assessor. The proportion of the project costs subject to taxation also could vary as (1) the amount of material sales subject to local sales tax could vary, and (2) the County Assessor may determine that differing proportions of the plants qualify for the property tax exemption. Perhaps the largest caveat for Scenario 2 is that the manufacturing plants for the projects mirrors will not qualify for a sales tax exemption as well. However, the project still shows a positive fiscal impact on the County so long as an agreement on the point of sale is concluded to direct sales and use tax into California. And finally, the calculations of the local shares of property and sales tax are complex and uncertain due to changing fiscal conditions at the state level.

This report that follows contains further discussion of the rationale and supporting documentation for this summary.

INTRODUCTION

The HHSEGS project is proposed by BrightSource Energy, Inc. BrightSource proposes to construct and operate two 250 MW solar power plants (500 MW combined) on privately owned land in the Charleston View area of Inyo County, adjacent to the California/Nevada border. BrightSource has two purchase agreements (PPA) with Pacific Gas and Electric Company (PG&E) to deliver power that have been approved by the California Public Utilities Commission (BrightSource Energy, Inc., 2011a).

This report estimates potential economic impacts in jobs and spending, under a reasonably foreseeable scenario, from the construction and operation of the Hidden Hills project. It also assesses changes in Inyo County (County) government's fiscal situation if the proposed project is built. The economic impacts are derived from direct costs based on publicly available estimates for each of the technologies, and these costs are used in a regional economic input-output model. The economic impacts show jobs creation and increased earned income in the County.

The fiscal impacts reflect both increased net revenues and changes in County costs. This report addresses the direct fiscal impacts on the County's government agencies of the construction and operation of the plants, and not from any other induced economic activity. This report does not address the larger question of how overall changes in economic activity might affect the County's fiscal situation due to the complexity and uncertainty of the required analysis. In other words, it does not fully account for either the changes induced by increased local employment on County expenditures or revenues. The revenue changes reflect property and sales taxes generated by the project directly. The costs reflect those created directly either by the project itself, or the change in employment at the project locations.

COUNTY OF INYO SOCIOECONOMIC PROFILE

The Hidden Hills Solar Electric Generating System would be located on private property in the Charleston View area in eastern Inyo County, adjacent to the California/Nevada border. The County's 2010 population was estimated to be 18,546, and the State Department of Transportation forecasts an increase to 20,279 by 2020 and 21,592 by 2030. Most of the population resides in the County's unincorporated areas, with the three largest cities and Census-designated places being Bishop, with a population of 3,879, Dixon Lane-Meadow Creek, with 2,645 residents, and West Bishop, with 2,607 residents (United States Census, 2012a; California Department of Transportation, 2011).

Inyo County's 2010 annual average unemployment rate reached a 15-year high of 10 percent, which was still below the State's average jobless rate of 11.7 percent (U.S. Bureau of Labor Statistics, 2012). At \$29,966 per capita (in 2008), personal income is 2.7 percent above the statewide average of \$29,188, with the lower proportion of very-low-income people than the statewide average — 11.9 percent of the population have

incomes below the poverty level in the County, compared to 13.7 percent across the state (U.S. Census Bureau, 2012b).

**APPENDIX SOCIO-1 Table 3
Employment Profile of the Study Area, 2011**

Industry	Inyo County Labor Force
Total Farm	50
Construction and Mining	200
Education and Health Services	450
Financial Activities	150
Government	3,220
Information	70
Leisure and Hospitality	1,520
Manufacturing	250
Professional & Business Services	250
Trade, Transportation, Utilities	200
Other Services	180
Total Employed	8,480
Unemployment Rate	9.2%
Source: CAEDD, 2012	

Appendix Socio-1 Table 3 displays the employment in the County by sector for 2011, the most current year available (CAEDD, 2012). As indicated in the table, government agencies are the number one employer in Inyo County. In 2008, the annual average County unemployment rate was 6.5 percent. The recession increased this rate to 9.2 percent in 2009, and the most recent reported rate for December 2011 also is 9.2 percent. This is a slight decrease from the annual average of 10 percent in 2010 but still one of the higher unemployment rates for the country in recent years (U.S. Department of Transportation, 2011).

ECONOMIC INFLUENCE OF THE HIDDEN HILLS SOLAR ELECTRIC GENERATION SYSTEM

The project has two distinct phases that have different economic consequences for the County. Construction is the first short-term phase, which will take place over a specified period, planned as 29 months in this case. This entails a fairly intensive amount of activity with substantial expenditures and material components. Operation and maintenance is the second, longer-term phase. The majority of the costs during the second phase will be for operation staff of the power plants. These expenditures, uses of resources and changes in the labor force will result in changes in the local economy and associated governmental activities.

BrightSource provided much of the required cost estimates for construction and operation of the proposed project (BrightSource Energy, Inc., 2011a; BrightSource Energy, Inc., 2011b; BrightSource Energy, Inc., 2012a; BrightSource Energy, Inc., 2012b). The cost assumptions presented here are consistent and within the range of publicly available published reports and models, and represent a reasonably

foreseeable outcome. Unless explicitly stated, this report assumed manufacturing and non-labor operating expenditures would occur out of the County. The project proponents have their corporate offices or headquarters located outside of Inyo County, and no significant solar panel manufacturing plant is located locally. While a certain proportion of these expenditures are likely to occur locally, there is insufficient detail from any source to quantify this amount accurately. This report uses the applicant's estimates of local expenditures as a reasonably foreseeable scenario. Construction and operating labor costs are allocated between Inyo and outside of the County (Mono, Kern, Riverside, and San Bernardino counties in California and Clark and Nye counties in Nevada) based on the employee locations provided by the applicant and U.S. Bureau of Economic Analysis personal income data. The applicant failed to provide construction cost and employment estimates for Inyo County, opting instead to provide this data for the five-county region that includes Inyo, Mono, Kern, Riverside, and San Bernardino Counties. Staff used Inyo's share of total personal income in the 5-county region (0.46 percent) to allocate the reported construction costs between Inyo and the remaining four counties in the region. Similarly, staff used Inyo's share of personal income in the construction and wholesale trade industries (0.22 percent) to allocate construction payroll expenditures and employment between Inyo County and the rest of the five-county region.

BRIGHTSOURCE'S PROPOSED HIDDEN HILLS SOLAR GENERATING SYSTEM

The HHSEGS is a proposed 500 MW AC PV power plant. The proposed project would be developed within an approximate 3,277-acre area, with approximately 6,000 additional acres assumed to be used for mitigation measures. The plant would be composed of two solar fields and associated solar facilities. The two solar plants will use heliostats—elevated mirrors guided by a tracking system mounted on a pylon—to focus the sun's rays on a solar receiver steam generator (SRSG) atop a tower near the center of each solar field (BrightSource Energy, Inc., 2011a). **Appendix Socio-1 Table 4** details the assumptions and costs for construction and operation of the HHSEGS plant. Data on the construction period and labor force size were provided by the applicant, BrightSource, as was data on per worker labor costs. Certain cost elements were then allocated based on the U.S. Department of Energy's National Renewable Energy Laboratory's (NREL) Jobs and Economic Development Impact II, or JEDI II input-output model (NREL, 2011). The land purchase costs, which are the basis for the assessed values of the land portion of the secured property, are based on the average per acre price derived from data on 2011-2012 land sales in the Charleston View Area (Deputy County Counsel, 2012a).

**APPENDIX SOCIO-1 Table 4
HHSEGS Economic Parameters and Costs**

Plant Size	
Production (AC Net MW)	500
Acreage	9,277
Land cost per acre	\$3,312
Total land cost if purchased – Inyo County	\$30.7 million
Months of construction period	29
Construction Costs¹	
Cost of construction	\$2,176 million
Supplies & materials costs	\$1,050 million
Local construction expenditures – Inyo County	\$0.2 million
Local construction expenditures – outside county	\$71.2 million
Annual Average Local construction payroll – Inyo County	\$0.5 million
Annual Average Local construction payroll – outside county	\$62.9 million
Average monthly number of construction workers – Inyo County	2
Average monthly number of construction workers – outside county	1,096
Average salary & wages – Inyo County	\$0.12 million
Average salary & wages – outside county	\$88.4 million
Average benefits & other overhead costs – Inyo County	\$0.05 million
Average benefits & other overhead costs – outside county	\$37.9 million
Operation Impacts²	
Annual operation and maintenance cost	\$13.6 million
Local operation expenditures – Inyo County	\$0.7 million
Local operation expenditures – outside county	\$12.9 million
Labor portion of annual operation cost – Inyo County*	\$0.7 million
Labor portion of annual operation cost – outside county	\$12.4 million
Annual Number of FTE permanent positions – Inyo County	5
Annual Number of FTE permanent positions – outside county	95
Labor wage portion of annual operation cost	\$9.1 million
Average salary & wages – Inyo County	\$0.5 million
Average salary & wages – outside county	\$8.6 million
Average benefits & other overhead costs – Inyo County	\$0.2 million
Average benefits & other overhead costs – outside county	\$3.8 million
Source: BrightSource, 2011; BrightSource, 2012b.	
* Includes wages, benefits, and other employer costs.	
1 Outside County includes Mono, Kern, Riverside, and San Bernardino counties in California and Clark and Nye counties in Nevada	
2 Outside County includes Clark and Nye counties in Nevada	

REGIONAL ECONOMIC IMPACT FORECAST METHODOLOGY AND RESULTS

The economic significance of the proposed solar project to the Inyo County economy can be assessed using an input-output model of the County's economy based on the NREL JEDI input-output model system of regional economic accounts (Lantz and Mosey, 2009). The "region" here is defined as the County. These County multipliers for employment, wage, and salary income and output (economic activity), and personal expenditure patterns included in JEDI are adapted from the IMPLAN Professional model (MIG, 2011). In turn, the IMPLAN data set is derived from U.S. Bureau of Economic Analysis data. These regional model assesses impacts to such variables as industry output (or gross sales), labor income (employee compensation and self-employed proprietors' earnings), other property ownership-related income (corporate profits, dividends, rents and other returns on capital assets), indirect business taxes (mainly sales and property taxes), and employment (full- and part-time jobs). These models are commonly used to evaluate economic activity in which changes in the total demand for output of the industries being studied results in changes in inputs and outputs by the local economic sectors. For example, these models have been used to estimate the impacts of such projects as construction and operation of new factories, development of tourism facilities, and military base closures. A recent study by the University of California found that IMPLAN produced an accurate estimate of actual job losses in the Central Valley related to the 2009 drought (Howitt, et al, 2011).

Economic activity is measured with two important concepts. The first is "total output," which is the total expenditures and receipts associated with all transactions in the economy. However, it includes both activity which may only be a simple transfer with little associated economic production as well as the actual economic activity that is facilitated by or facilitates the transfer.

The second concept of "value added" measures the actual economic activity associated with a transfer, and is a component of total output. It is the component that adds actual wealth to the economy. Value added is the economic value added to a product by an industry beyond the costs of purchasing the necessary inputs from other industries, as measured by labor and property income and indirect taxes. Each step of the production, delivery, and service process adds incremental value. The cumulative value added across these industries, plus any out of state imports, will equal the total cost to provide the final product to the end consumer. The sum of all of this value added for California is known as the "Gross State Product" or GSP. The GSP excludes out of state imports, and does not include the multiplier effect. The GSP is directly analogous to the U.S. Gross Domestic Product or GDP, whose growth rate is followed closely in the business and economic press.

The JEDI model uses multiplier analysis to estimate the total change in County economic activity due to an initial change in construction and plant operational activity. The total change in economic activity consists of three parts: (1) the direct impact, (2) the indirect impact, and (3) the induced impact. The direct impact is simply the initial change in activity. For example, if farm sales fall by \$1 million, the direct impact is the change to farm sales, farm income, farm employment, and tax receipts caused by the

fall in farm output. The indirect impact is the change in output, earnings, and employment to all businesses that are linked to the affected downstream sector and impacted by reduced demand for its inputs. The induced impact is the change in regional output, earnings, and employment caused by changes in household income and spending associated with the direct and indirect impacts. Together, direct, indirect, and induced impacts capture the full range of changes in County economic activity stemming from an initial direct change in demand for a good or service. The assumptions about the economic relationships that induce spending and job creation are embedded in the JEDI model and are complex and extensive. The reader is referred to the JEDI and IMPLAN documentation to understand these assumptions and data sources in greater depth.

ISSUES IN MODELING REGIONAL ECONOMIC IMPACTS TO THE COUNTY FROM THE PROPOSED SOLAR PROJECT

Regional economic models such as RIMS, IMPLAN and JEDI can give useful insights into how policy choices might affect the economy. However, they have several limitations on their results. The most important is that they do not account for changes in the economy over time. They rarely capture such technological changes such as the introduction of personal computers. Another shortcoming of input-output models such as IMPLAN or RIMS is that they do not account for relative price changes. For example, if beef becomes cheaper than chicken, the model does not reflect how beef consumption would increase and chicken would fall. Because of these limitations, regional models tend to overstate the economic impacts from large projects or policy changes, especially as the analysis extends further out into the future.

Three particular issues are of note for this regional economic analysis. First, some of the economic activity and flows associated with the proposed project occur outside of, or “leak” from, Inyo County economy into other counties. “Leakage” occurs in a regional economy when goods and services are bought outside of the local economy. Such leakage is common in every regional modeling exercise; however, there are some additional considerations in this case. First, most of the solar panel manufacturing would occur outside of the County. And second, a large segment of the labor force for both construction and operation would commute from outside the County due to the remote location of the proposed project. Often there is a counterbalancing inflow, as will occur with this proposed solar project.

Finally, the standard configuration for the JEDI model assumes that all construction for the project takes place in one year and that the plant begins operating in that same year once construction is complete. This is problematic because most large scale projects are not completed within one year. Construction of the Hidden Hills plant will span 29 months, not including month 0 (BrightSource Energy, Inc., 2011a). In order to calculate the construction costs by year, staff generated a separate version of the JEDI model for each year in which construction occurs and another version of the model to determine the O&M costs and impacts. To do so, staff assigned a share of the total project construction costs to each year based on the proportion of construction employees over the life of the project working that year using detailed data on the project timeline and construction personnel provided in the HHSEGS AFC and revised in a Data Response (BrightSource Energy, Inc., 2011b)

The project is expected to begin construction in the third quarter of 2012, with a three month delay between the start of plant 1 and plant 2, and end in Q2 2015.¹ This allows for an on-line date of Q1 2015 for plant 1 and Q2 2015 for Plant 2. Given this information, we determined that construction would occur for three months in 2012, 12 months in both 2013 and 2014, and three months in 2015.

Table 5.10-16R1 of the HHSEGS AFC provides number of construction personnel by month for the duration of the construction period. Using the construction timeframe noted above, each month was assigned to one of the four construction years. Staff summed the total monthly construction workforce to determine the annual construction workforce for each of the four years in which construction takes place. Staff found that of the 32,620 construction personnel employed throughout the total construction period, 1.5 percent are employed in year 1 of construction, and 32.4 percent, 61.4 percent, and 4.7 percent are employed in the following years.

Staff multiplied the annual employment percentage values by the \$2.176 billion in total construction costs to calculate the construction costs for each year of the project, which were then entered into the JEDI model for the respective years. To ensure that no O&M impacts were reported in the construction year models, staff set all O&M costs to zero and set the local share of property taxes, debt and equity financing/repayment, insurance and land purchase/lease parameters to zero. These items are all used to compute the O&M impacts but have no effect on the construction impacts.

For the O&M version of the JEDI model, staff used the estimated O&M costs provided in the AFC and set the local share of the items listed in the previous paragraph to the appropriate values. The local share of construction-related sales tax was set to zero as sales tax generates impacts from plant construction in the model. To ensure that the proper property tax value was computed and used in the model, staff entered the total construction period costs; however, the local share of all construction-related costs were set to zero to ensure that the model would compute only O&M impacts.

Impacts were measured in terms of County output, earnings, and employment. Economic output accounts for the total value of forgone goods and services produced or sold in Inyo County, including the value of imports into the County. These parameters consider only the economic value generated within Inyo County. Earnings represent the portion of value-added that accrues to wage earners and business proprietors. Employment counts the number of full- and part-time positions created by the construction and operation of the proposed project.

SUMMARY OF MODELING RESULTS FOR COUNTY ECONOMIC IMPACTS

The economic impacts from the project will occur in two phases. The first will last about 29 months as the project is constructed. **Appendix Socio-1 Table 5** shows a rea-

¹ The schedule was changed from that in the AFC and reflected in the numerous data submissions by Bright Source. The project now is expected to begin construction in the second quarter of 2013, with a three month delay between the start of plant 1 and plant 2, and end in Q4 2015. This allows for an on-line date of Q3 2015 for plant 1 and Q4 2015 for Plant 2.

sonably foreseeable scenario for increased employment, earnings and output, or product and services sold, within Inyo County for the 2012-2015 period, based on the assumptions specified here and included in the JEDI model algorithms and data. The modeling results show that two jobs would be created in the County directly from construction activity and another 48 would be induced through increased activity in the County.² Total County earnings would rise by \$2.8 million, and total output by \$41.6 million for the full 29 month period, or about \$1.2 million annually for earnings and \$17 per year for output.

The second phase is the long-term operation of the proposed plants, which is expected to extend at least 25 years based on financing projections used in the industry and the terms of the respective PPAs. **Appendix Socio-1 Table 6** shows a reasonably foreseeable scenario for the period beginning as early as 2015, depending on the operational date for the plant. BrightSource estimates five jobs out of 100 total jobs will be created for and filled by local residents. Another 13 jobs would be induced through local activity and purchases, for a total of about 18 jobs created County-wide. Total annual earnings would increase by \$0.9 million and output by \$2.2 million.

**APPENDIX SOCIO-1 Table 5
Proposed Project Economic Impacts during Construction 2012-2015**

Impact	Jobs	Earnings \$million (2012)	Output \$million (2012)
Project development and onsite labor impacts	2	\$0.4	\$0.4
Module and supply chain impacts	7	\$0.4	\$31.5
Induced impacts	41	\$2	\$9.7
Totals	50	\$2.8	\$41.6

**APPENDIX SOCIO-1 Table 6
Proposed Project Annual Economic Impacts during Operation – 25 Years**

Impact	Jobs	Earnings \$million (2012)	Output \$million (2012)
Onsite labor impacts	5	\$0.7	\$0.7
Local revenue and supply chain impacts	2	\$0.1	\$0.4
Induced impacts	11	\$0.3	\$1.2
Totals	18	\$1.1	\$2.3

No economic losses from reduced agricultural activity are projected as the reasonably foreseeable impact is negligible. As discussed in AFC Section 5.6 Land Use, there are currently no agricultural uses within the HHSEGS site.

² Note that the JEDI model results will differ from the project specific inputs to the model, as it segments job creation pathways.

FISCAL IMPACTS ON INYO COUNTY

The proposed solar project, located within the County, would use services provided by various local government agencies, such as public safety and health inspection, and would generate additional revenues for those agencies, such as property and sales and use taxes. Construction and operation of the solar project will also generate additional tax revenues from increased economic activity at other local businesses through indirect and induced economic effects from both project expenditures and increased employment. On the other hand, the solar project would include active solar systems under AB 1451 (Revenue and Taxation Code Section 73), which states that fully qualifying active solar systems are 100 percent exempt and dual-use equipment is 75 percent exempt, and would not be considered new construction. Therefore, a significant portion of the total assessed value of each project would be exempt from property taxes.

The project applicant is not aware of sales and use tax exemption that applies to the project (CEC, 2012c). Sales and use tax generated by the project depends on the designation of the “point of sale” and the ownership structure of the facility. The County would receive none of the sales tax if the “point of sale” is designated outside of Inyo County. However, several factors make such a designation highly unlikely, as discussed below. For this reason, we presume that the sales and use taxes will accrue to Inyo County.

Public service expenditures — such as expenditures on public health and safety — are induced by changes in the population, workforce,³ socioeconomic conditions such as unemployment, or facilities in an area. In some cases, such as for water and other utility charges, these costs are paid for directly through property tax increments or usage bills. In other cases, new services are paid for from general fund revenues, and growth may or may not contribute sufficient new sources of revenue to pay for itself.

From an economic perspective, it is the “marginal costs” that are created by economic or population growth that must be examined to determine whether or not a new project produces additional public sector costs. That is, a large portion of public service expenditures are fixed — they cannot be changed quickly. In many cases capital-related costs are sized with extra, or flexible, capacity. Other costs, such as staffing, may vary with demand and funding, but also can be “lumpy”, that is, an employee is hired after a threshold level of demand or funding is added.

Fixed costs such as school classrooms, fire stations, and roads will generally not be affected by a small increase in demand. For example, a dozen or more students can typically be added to a school with 500 students without creating a need to enlarge the facility. Similarly, two to three additional calls a year to the fire and police departments will not create the need for a new fire station, or even another officer. However, an additional student, or extra police visit, will result in additional costs associated with supplies, transportation, and other operating expenses. A series of such small

³ Population and employment may differ as a community may have significant net inflow or outflow of commuters. For example, San Francisco has a population of about 800,000, but its daytime “population” including workforce is about 1.4 million.

incremental increases or a single large project can reach a cumulative threshold where a new school or fire station would be required.

The public costs engendered by the proposed solar project can be illustrated by examining the average cost associated with the provision of various public services. Average costs are different from marginal costs in that they simply reflect a per capita expenditure associated with a particular population, but say little about how those expenditures change given changes in the population served. Likewise, average costs do not account for revenues generated by activities (e.g., reimbursement for building code enforcement), and as a result can overstate per capita expenses. On the other hand, marginal costs estimate the specific cost of adding one additional unit of service, for example, teaching one more student.

For some activities, the private provision of quasi-public services may act to offset any additional demand that the facility may otherwise have caused. For example, the primary burden the solar project places on police services is the need for additional patrols to prevent and investigate crimes against property. In this case the use of security devices and appropriate facility design may minimize the need for professional police services.

DIRECT GOVERNMENT SERVICE COSTS FOR THE PROPOSED PROJECT

The proposed solar project would cause the County to incur direct costs to serve the public safety, health protection, and roadway requirements in the immediate vicinity of the project.

This section presents the county's estimates of direct government service costs and our own, more conservative, estimates, which form the basis of the two expenditure scenarios used in this analysis.

Scenario 1 – Estimates Based on County Projections

Scenario 1 relies on County expenditure projections developed by nine Inyo County Departments. The County recommended the following, as well as many additional, service upgrades to meet the increased demands in the Charleston View area:

- Resurfacing of Old Spanish Trail Road to the state border.
- The Inyo County Office of the Sheriff will require seven new positions. Training is required for each of the new officers, and new officer will be provided with equipment (patrol car, uniforms, etc.) and housing.
- The Department of Public Works will need one additional road department position for the life of the plant and one 30-month limited term position.

Appendix Socio-1 Table 7 shows the recommended annual mitigation costs proposed by the County for its service agencies or departments. The total costs estimated by the managing County departments during the construction period would be \$11.4 million and \$1.7 million annually during the operating period for serving a solar project in Inyo County.

APPENDIX SOCIO-1 Table 7
Annual Mitigation Costs Associated with HHSEGS Construction and Operation:
Scenario 1 (Inyo County Estimates)

County Service	Construction Period	Operation Period (Annual)
Inyo County Health and Human Services Department	-	\$188,115*
Inyo County Assessor Department	\$120,000	\$120,000
Inyo County Sheriff Department	\$2,409,366	\$1,269,120
Inyo County Public Works Department	\$8,157,000	\$78,500
Inyo County Information Services	\$237,600	
Inyo County Agricultural Department	\$150,000	\$50,000
Inyo County Waste Management Department	\$156,000	-
Inyo County Motor Pool Department	\$33,200	-
Inyo County Water Department	\$145,000	\$8,000
Total	\$11,408,166	\$1,713,735
Source: CEC, 2012		
* Annual costs shown are for the first year. They are estimated to increase 5% per year.		

APPENDIX SOCIO-1 Table 8
Annual Mitigation Costs Associated with HHSEGS Construction and Operation:
Scenario 2 (Staff Estimates)

County Service	Construction Period	Operation Period (Annual)
Inyo County Health and Human Services Department	\$470,000	-
Inyo County Assessor Department	-	\$50,000
Inyo County Sheriff Department	\$871,000	\$330,000*
Inyo County Public Works Department	\$1,213,000	-
Inyo County Information Services	\$237,600	-
Inyo County Agricultural Department	-	-
Inyo County Waste Management Department	-	-
Inyo County Motor Pool Department	-	-
Inyo County Water Department	-	\$8,000
Total	\$2,791,600	\$388,000
Note: * - Additional annual cost to the Sheriff is for first three years of operation.		
Totals may differ due to rounding.		

Scenario 2 – Estimates Revised for Updated Information

Scenario 2 consists of Staff estimates of county expenditures. **Appendix Socio-1 Table 8** shows the Staff's estimates of direct government service costs for various county agencies as a result of the proposed project. Mitigation costs in this scenario are

significantly lower than in Scenario 1, with estimates of \$2.8 million for the construction period and \$0.4 million annually during the O&M period. A detailed discussion of how we arrived at these estimates is presented below.

Construction Housing

BSE and Bechtel considered the project area for the similarly-configured Ivanpah Solar Energy Generating Station to have a two-hour commute radius for construction. The population within this radius included large numbers of construction workers, so it was assumed that they would commute to the construction site.

“All workers would reside within commuting distance of the proposed ISEGS site, and therefore would not need to move into the area. Therefore, no construction or operation-related impacts are expected on the local housing supply availability or demand.”

Similarly, the Hidden Hills site is located within one hour of the suburbs of Las Vegas, Nevada, and Pahrump, Nevada with a population of 36,441 in the 2010 U.S. Census is less than 15 minutes away (BrightSource Energy, Inc., 2011a). Given that Valley Electric Association, the electric cooperative headquartered in Pahrump, is promoting the siting of large-scale renewable power projects in its service territory, Pahrump can expect an influx of power plant construction employees for other projects as well.

Health and Human Services

In a review of Staff Assessments and environmental documents for 18 remote solar and natural gas-fired power plant projects, none have indicated additional costs to county health services (County of San Luis Obispo Department of Planning and Building, 2011a; County of San Luis Obispo Department of Planning and Building, 2011b; California Energy Commission, 2010a; California Energy Commission, 2010b; California Energy Commission, 2010c; California Energy Commission, 2010d; California Energy Commission, 2010e; California Energy Commission, 2010f; California Energy Commission, 2010g; California Energy Commission, 2010h; California Energy Commission, 2010i; California Energy Commission, 2009a; California Energy Commission, 2009b; California Energy Commission, 2008; California Energy Commission, 2006a; California Energy Commission, 2006b; California Energy Commission, 2000; California Energy Commission, 1999). While Inyo Health and Human Services indicated in their December 12, 2011 letter that additional funding would be required on an ongoing annual basis, the need for this additional funding seems to be based on costs incurred during construction, not necessarily during operation (County of Inyo, 2012). With a peak construction workforce of 2,293 personnel during Month 19 of construction, assuming that construction workers have been drawn from outside the study area, Health and Human Services costs for additional services appears reasonable for the duration of construction (BrightSource Energy, Inc., 2012b). It is likely that the operational workforce of 120 would be largely drawn from the local population, much of it in Nevada, and if not, this increase would not represent a substantial increase in demand on services. In addition, this population is likely to be employed and of working age so demands on social services should be substantially less than the average experienced in the region. Consequently, the ongoing annual cost projected by Health and Human Services has been extrapolated for the 29-month duration of construction instead of as an ongoing cost. However,

these costs would not create a significant environmental impact and are beyond the regulatory purview of the Commission.

Assessor

The County projected that the average annual cost for the Assessor's Office would be approximately \$120,000. Additionally, according to recent correspondence with Gruen Gruen + Associates, the assessment of the Coso Geothermal project cost the Assessor's Office approximately \$200,000 per year (Gruen Gruen + Associates, 2012). These costs largely represent legal costs that would occur on an ongoing basis following the completion of construction. For the HHSEGS, staff estimates that ongoing annual legal costs to the Assessor's Office could be \$50,000 (CEC, 2012d). However, given that the majority of these costs are for adversarial legal proceedings, it would be presumptive to require BSE to pay the County's legal fees prior to the determination of the outcome of proceedings that may not even occur. The Staff also believes that Inyo County can generate substantial savings by sharing information and resources with neighboring San Bernardino County, which will be assessing the largely identical Ivanpah Solar Energy Generating Station.

Sheriff

Reviewing the Energy Commission Staff Assessments for 16 remote solar and natural-gas fired power plants, project-related increases in property damage and theft were not identified as issues that would substantially increase demands on police protection services. For the projects reviewed, law enforcement response times ranged from three minutes to one hour. Each project included security fencing and nighttime lighting, with most projects specifying the inclusion of razor wire or barbed wire on the fencing. None of the projects indicated an increased demand on police protection that would require additional staffing or law enforcement facilities. For the solar and natural-gas fired power projects that did not specifically include security measures in their project descriptions, Energy Commission staff required Conditions of Certification for the power plants to implement a minimum level of security consistent with the 2002 North American Electric Reliability Corporation Security Guidelines for the Electricity Sector and the 2002 U.S. Department of Energy draft Vulnerability Assessment Methodology for Electric Power Infrastructure. These Conditions of Certification included perimeter fencing and breach detectors, guards, alarms, site access procedures for employees and vendors, site personnel background checks, and law enforcement contact in the event of a security breach (California Energy Commission, 2010a; California Energy Commission, 2010b; California Energy Commission, 2010c; California Energy Commission, 2010d; California Energy Commission, 2010e; California Energy Commission, 2010f; California Energy Commission, 2010g; California Energy Commission, 2010h; California Energy Commission, 2010i; California Energy Commission, 2009a; California Energy Commission, 2009b; California Energy Commission, 2008; California Energy Commission, 2006a; California Energy Commission, 2006b; California Energy Commission, 2000; California Energy Commission, 1999). Additionally, discussions with San Bernardino County Sheriff's Department have indicated that the Ivanpah, Kramer Junction, Daggett, and Harper Dry Lake Solar Energy Generating Systems have not increased the number of incidents

requiring response by the Sheriff's Department (California Energy Commission, 2012a; California Energy Commission, 2012b).

Based on a review of other power plant projects and comments made in the May 9, 2012 Staff Workshop, Staff estimates that two additional resident deputies would be sufficient to provide adequate police protection and response times. The County Sheriff stated at the workshop that the current situation requires five patrol officers in eastern Inyo County but only two are currently on staff. Thus, the County already requires three additional deputies plus administrative staff to meet current needs, so these positions are netted from the County's estimated requirements specific to the project. With this increase in staffing at the Tecopa/Shoshone Substation, it seems that patrol coverage would be sufficient such that an additional substation building at the plant site would be unnecessary. Assuming an average tenure for officers of 12 years based on U.S. Bureau of Justice Statistics national data, and an expected average remaining tenure of officers currently employed by the County of six years, the officers hired in response to HHSEGS construction would replace other officers through attrition or retirement in six years.⁴ Consequently, the cost projection for salary and annual training for these new officers is estimated for the 29 months of construction and the remaining three years and seven months following completion of HHSEGS construction.

For this cost projection, the monthly resident deputy allowance of \$400 is used to estimate housing costs to the County, for a total of \$24,000 for HHSEGS construction at an annual cost of \$9,600.

Revising the County Sheriff's Hiring and Recruitment, Academy Training, and Initial Startup costs for two additional employees instead of seven (including the officers' salaries and housing for the duration of construction), initial and construction costs would be reduced from \$2,130,966 to \$871,295.

Eliminating the cost of the proposed Substation would eliminate the ongoing annual projected utilities and maintenance costs and personnel costs would be reduced proportionately for two instead of seven additional personnel. This would reduce ongoing costs from \$1,269,120 to \$329,998.

Public Works

Inyo County Public Works had projected that severe truck traffic loads from Hwy 127 along Old Spanish Trail Road to the HHSEGS site would require reconstruction of the entire 30.1-mile length of Old Spanish Trail Road. The projected cost estimates provided by the Department of Public Works for repair and maintenance of Old Spanish Trail Road (\$8,157,000 during construction and \$78,500 annually during operation) appear consistent with other road maintenance costs determined for other projects on a cost per mile basis (County of Inyo, 2012). However, BSE has stated that 100 percent of truck trips and 90 percent of all construction workforce traffic would come and go from the SR 160 along Old Spanish Trail Road. 10 percent of construction workforce traffic would use Old Spanish Trail Road west of the project site to Hwy 127 (BrightSource Energy, Inc., 2012b). Consequently, the 3.4-mile segment of Old Spanish Trail Road in Inyo County from the western boundary of the HHSEGS east to the

⁴ If the average tenure within the Inyo County Sheriff's Department were less, then the projected incremental costs would decrease because the excess force could be reduced more quickly.

Nevada state line would receive 95 percent of all construction traffic including all truck trips and would be subject to the most severe damage from construction. Doug Wilson, Interim Director of Inyo County Public Works acknowledged at the May 9 Workshop that the County was unlikely to incur large costs on Old Spanish Trail west of the plant site (CEC, 2012d).

The County projection of \$8,000,000 for the replacement of the 30.1-mile length of Old Spanish Trail Road translates to a per mile replacement cost of \$265,781 per mile. This projection assumes that the entire length of Old Spanish Trail Road will be equally impacted by construction. As described above, however, the 3.4-mile segment of Old Spanish Trail Road from the HHSEGS to the Nevada state line will receive 90 percent of the traffic impacts and the 26.7-mile segment from the HHSEGS to Hwy 127 will receive at most 10 percent of the traffic impacts. The proportional replacement cost per mile can be determined by using the County's cost per mile and multiplying it by the percentage of impacts that segment of road will receive.

However, this calculation assumes that car and truck trips damage the road equally, which is empirically untrue (General Accounting Office, 1979). If truck trips were weighted more heavily in the calculation, then because trucks only travel on the 3.4-mile segment to the Nevada state line, the proportion of traffic impacts to the 3.4-mile segment would increase, approaching 1.0, while the proportion of traffic impacts to the 26.7-mile segment would decrease, approaching zero. If the proportion of traffic impacts to the 3.4-mile segment comes close to 1.0, the proportional replacement cost increases near \$265,781/mile, giving a total replacement cost for the segment from HHSEGS to the Nevada state line of \$903,655 while the replacement cost for the segment from HHSEGS to Hwy 127 nears \$0.

To balance these two different estimation methods, the staff has used the average of the two, which implies 95 percent of the damages come from traffic to Nevada and the remainder for traffic to California. On this basis, for the 3.4-mile segment from HHSEGS to the Nevada state line, \$265,781/mile is multiplied by 0.95 to give a proportional replacement cost per mile of \$252,492. For the 26.7-mile segment from the HHSEGS to Hwy 127, \$265,781/mile is multiplied by 0.05 to give a proportional replacement cost per mile of \$13,289. Multiplying each by the mileage of each segment we find a total proportional replacement cost for the 3.4-mile segment to be \$858,473 and a total proportional replacement cost for the 26.7-mile segment to be \$354,816, for a grand total of \$1,213,289.

Inyo County Public Works department anticipated that the maintenance required for the 30.1-mile length of Old Spanish Trail Road during construction and afterward during operation would require an additional staffing position, a medium sized front end loader and a pick-up truck. As replacement and maintenance activities would disproportionately occur on the 3.4-mile segment from HHSEGS to the Nevada state line, little more than 10 percent of the 30.1-mile length of Old Spanish Trail Road, it is expected that current Road Department staff and equipment would be able to accommodate the additional maintenance burden. With 95 percent of traffic coming and going from SR 160 along Old Spanish Trail Road, no additional Public Works staffing or equipment would be necessary.

Information Services

Construction activities at the HHSEGS will draw a maximum of 2,293 workers to the project area for the duration of construction, requiring the temporary installation and maintenance of information infrastructure in the Tecopa/Shoshone area for the duration of construction (County of Inyo, 2012; BrightSource Energy, Inc., 2012b). While it is expected that the communications tower proposed as part of the project would be sufficient for communication needs directly related to the HHSEGS project, additional infrastructure will be required to accommodate additional County Services. Based on ongoing AT&T monthly charges for County workstations, the County's Information Services projected cost for the duration of construction appears reasonable (County of Inyo, 2012).

Agricultural

While the costs projected by the Agricultural Commissioner appear consistent with weed management costs for other projects, it should be noted that all the power plant projects reviewed included Conditions of Certification requiring the applicants to develop and implement weed management plans (County of San Luis Obispo Department of Planning and Building, 2011a; County of San Luis Obispo Department of Planning and Building, 2011b; California Energy Commission, 2010a; California Energy Commission, 2010b; California Energy Commission, 2010c; California Energy Commission, 2010d; California Energy Commission, 2010e; California Energy Commission, 2010f; California Energy Commission, 2010g; California Energy Commission, 2010h; California Energy Commission, 2010i; California Energy Commission, 2009a; California Energy Commission, 2009b; California Energy Commission, 2008; California Energy Commission, 2006a; California Energy Commission, 2006b; California Energy Commission, 2000; California Energy Commission, 1999). With the inclusion of Conditions of Certification as described in Biological Resources section requiring HHSEGS to develop and implement a weed management plan, it is expected that additional weed management by the County will not be necessary.

Waste Management

At this point in the planning process, it is unclear how construction worker housing may be accommodated in the area, but as discussed above, it appears sufficient housing is available within commuting distance to accommodate the workforce. No such camp has been constructed at Ivanpah SEGS which is similarly remote. While a 300-space RV park to provide housing for project employees could require waste disposal services during the 30-month construction period, these plans are speculative, but sufficient for inclusion in this cost estimate (County of Inyo, 2012). Other similar projects have developed Temporary Construction Worker Accommodations Areas in which the applicant was responsible for waste management (County of San Luis Obispo Department of Planning and Building, 2011a; County of San Luis Obispo Department of Planning and Building, 2011b). Without better knowledge of the construction labor force, these costs are uncertain and could be lower or higher. The **Waste Management** section addresses issues of waste disposal services. At this time, the Staff believes that no additional costs will be incurred by the County for this project.

Motor Pool

The projected cost estimates provided for the Inyo County Motor Pool (\$66,000 during construction) appear consistent with costs determined for other projects (BrightSource Energy, Inc., 2011a). However, the Commission is fully responsible for all compliance and inspection, so the County need not incur any costs to visit the work site or the operating facility.

Water Department

While Water Department costs for oversight and monitoring appear consistent with costs determined for other projects, the costs for plan and model development would be borne by the HHSEGS project. Additionally, it seems presumptive to assume that the County would lose grant funding as a result of the project based on increasing the risk of being deemed ineligible. This would eliminate the Water Department costs of \$145,000 during construction, while keeping the \$8,000 annual cost. The **Water Supply** section addresses issues of groundwater monitoring.

CHANGES IN INDIRECT COUNTY EXPENDITURES

Beyond the direct public safety and health protection services discussed above, the solar project could result in changes to local governmental expenses, primarily in two ways. The first is increased spending induced by increased population. The second is decreased spending caused by improved socio-economic conditions.

The first set is associated with an increase in the number of employees located in Inyo County who could be new residents. These indirect increases include both the public facility development costs identified for impact fees and other general governmental service costs such as health and social services, recreation, judiciary and detention, and permitting and licensing. These costs generally increase with the population, or with a related metric such as daytime workforce population. The usual underlying economic assumption in the studies that develop these costs is that the local economy is in a stable equilibrium represented by long-term averages that relate county expenditure growth to population growth. In turn, this assumption implies that increased employment leads to both increased jobs for current residents and attraction of immigrants from other jurisdictions, which implies a growing population, and increased County government spending.

Given the extraordinarily high unemployment rate now being experienced which is expected to continue for several years, few employees at this project can be expected to be new residents. Combined with other communities in neighboring counties, there will be an available labor supply in proximity to the proposed solar project. The applicant plans to employ up to 2,293 workers during the peak construction period should have a negligible impact on the County's current population of 18,546 and labor force of 9,550 as the majority of them will reside in neighboring counties and the California Employment Development Department employment figures indicate that approximately 1,000 members of the County's labor force are unemployed. The existing County labor force will likely fill these new jobs where needed and project developers will not need to offer higher compensation to attract outside labor. The current situation is in contrast to

recent history when construction labor costs escalated through the 2000s to attract an increase labor supply across geographic regions.

While the daytime population will be shifting from neighboring areas to the Charleston View area, so that demand on services will also shift to a currently underserved portion of the County, those services will still be rendered within the County boundaries. Building and operating the proposed solar project could increase County governmental expenditures on direct services, but the County's indirect costs in total are unlikely to increase as a result. For this reason, the County should not expect to experience higher costs for the public services beyond the direct service costs identified in Section 5.1 specifically for the proposed project.

The second set of potentially affected services is associated with decreased social welfare and public health services due to reduced unemployment and improved socioeconomic conditions, including higher income. While the relationships for the expenditures on the first set of services described above are well understood, the relationships for the expenditures on the second set of services are not. For example, the quantitative relationship between the number of unemployed and County health service expenditures has not been estimated and would require substantial analysis of the affected departments' budgets. For this reason, while the County should expect lower costs for social welfare and health services as a result of reduced unemployment, those savings cannot be estimated at this time.

CHANGES IN LOCAL GOVERNMENT REVENUE

Local government revenue sources can be categorized into seven general types:

- property tax and property-related taxes and fees,
- local sales and use tax,
- vehicle license fees,
- fines and forfeitures,
- fees for services,
- other local taxes (e.g., transient occupancy tax, utility users tax, business license tax), and
- intergovernmental transfers.

California's cities and counties vary in the extent to which they rely on the above taxes and fees to support their functions due to the differing nature of their relationship with the state government, their responsibilities, and their authority.

Further, developing the proposed solar project will impact the various taxes and fees in different ways. Due to the specificity of the taxes, changes in property and sales taxes can be estimated on an incremental basis with information about changes in property values, projected sales, and the appropriate tax rates. Certain special taxes, such as the transient occupancy tax, also can be estimated using an incremental approach focused on the added economic activity. Changes in other taxes are more readily estimated using the average revenue per County resident due to their less direct relationship to changes in population and business activity. Due to the complexity of the relationships between changes in economic activity and fiscal revenues, those changes have been estimated only where a direct relationship can be identified. For property and

transfer taxes, and impact fees, these are derived solely from proposed project activities. For sales taxes, both the project construction costs and the indirect supply chain expenditures have been included in the calculation. Left out are the fines, licenses and special taxes such as transient occupancy, as well as the sales and property taxes from induced economic activity because those require a wider and detailed modeling of County economic activity.

Property Tax Impact

Although the active solar energy system portions of the proposed solar project would be excluded from the assessment of property taxes, pipes and ducts that are used to carry energy derived from solar are active solar energy system property only to the extent of 75 percent of their full cash value, and non-generating facilities would be assessed at their full value. For HHSEGS, the annual property tax avoided due to exemptions is roughly \$13.6 million based on the cost estimates presented here. This translates to a total of \$4 million that would have gone to the County services including the General Fund, libraries and roads. The land on which the project is located would be taxed at their newly assessed values, as well as the transmission interconnection facilities. The assumption is that the current “highest and best use” used for value assessment is agricultural, and that will change to an industrial activity definition with a new higher assessment upon transfer.

Changes in property taxes were estimated from the Deputy County Council’s data on tax allocation, property assessments and sales; exemption details from BrightSource; and the appropriate tax rates for each area, as reported by the County. Property tax is assessed on project land and equipment. Current property tax on project land was estimated using the assessed value of BrightSource project area parcels (Deputy County Council, 2012b). The parcels are assessed 1.0 percent, resulting in the pre-project parcels generating approximately \$62,000 in property taxes annually, \$18,000 of which goes to county services. With the construction under the proposed solar project, the value of the parcels will be reassessed and property taxes will be assessed accordingly. In addition, the assessed value of the plant facilities would be \$2.176 billion for the project. After the first year, staff applied the BOE’s percent good factor to discount the assessed value of plant facilities over the life of the project (BOE, 2012a), resulting in a levelized assessed value over the life of the project of \$1.63 billion per year. Approximately 45 percent of the project property will be taxable non-solar property, of which 38 percent will be dual-use and, thus, taxable at 25 percent of full value and 7 percent will be fully taxable (BrightSource Energy, Inc., 2012). Based on these values, the proposed solar project is estimated to generate approximately \$2.63 million in property taxes annually, a net increase of about \$2.56 million over the total fiscal year 2010 amounts. **Appendix Socio-1 Table 9** shows the increases in property tax revenues to the various agencies under current allocation rules after the land is leased and reassessed at the new purchase price. The County’s revenues would increase by about \$0.75 million annually.

APPENDIX SOCIO-1 Table 9
Changes in Annual Property Tax Revenues with the Project Completed

Property Tax Revenues	County Allocation	Added Revenues
School districts	62.5%	\$1,600,000
County Services	29.43%	\$760,000
Incorporated cities	1.16%	\$30,000
Special districts	6.91%	\$180,000
Total	100%	\$2,560,000
Source: Deputy County Council County of Inyo, 2012.		

BSE has provided cost information regarding the non-generating facilities to be constructed as part of the project (BrightSource Energy, Inc., 2011a). The addition of new construction would also generate property tax revenue, although without the capital costs of the non-energy production components of the project, the additional revenue cannot be estimated. The structures subject to additional property tax not included here are listed in **Appendix Socio-1 Table 10**. These components would be taxed at their assessed value.

APPENDIX SOCIO-1 Table 10
Structures Subject to Additional Property Taxes

Structures	Square Feet
HHSEGS	
Visitor Center	23,637
Source: BrightSource Energy, Inc., 2011a	

Sales and Transaction Taxes Impacts

In fiscal year 2009-10, Inyo County received over \$1.2 million in revenues from its share of the sales and use tax (California State Controller, 2012). **Appendix Socio-1 Table 11** shows the distribution of sales taxes collected within the County borders. The components sent to the County are shown in italics. The County receives 0.75 percentage point directly to its General Fund. Two other components of 0.5 percentage points each are directed to criminal justice activities and human and health services under state law. Finally, the County imposes a tax 0.5 percentage points for a Special Districts. 0.5 percentage points go to County transportation funds, but these revenues are controlled by the Inyo County Local Transportation Commission (ICLTC), which consists of representatives from the Inyo County Board of Supervisors and Bishop City Council, as opposed to being directly controlled by the county, so these are not considered, conservatively, as part of the local share. The County thus receives 2.25 percentage points of the 7.75 percentage point sales tax revenue from the proposed project. A second component equal to 1.06 percentage points is deposited into the Local Revenue Fund 2011 in the State Treasury; this is then reallocated back to the counties based on formulas specified in Assembly Bill 118 (2011). The amount that

Inyo County receives is independent of the sales and use tax revenues generated in the County.

**APPENDIX SOCIO-1 Table 11
Distribution of Sales Tax**

Purpose	Rate
State (General Fund)	3.94%
County Transportation Funds (ICLTC)	0.25%
State (Fiscal Recovery Fund)	0.25%
State (Local Public Safety Fund)	0.5%
State (Local Human and Health Services Fund)	0.5%
State (Local Revenue Fund 2011)	1.06%
City and County Operations	0.75%
County Special Districts Tax	0.5%
Total	7.75%
Source: BOE, 2012b.	

The proposed project is subject to sales and use taxes upon construction and operation, and the tax would be payable within the County per Board of Equalization Regulation 1826(b) (BOE, 2002). Sales tax revenues for the County are largely dependent on the final purchase price and designated “point of sale” for the proposed project, both of which are currently unknown. However, the applicant has made clear its desire to and intention of working with Inyo County to ensure that it maximizes the allocation of sales and use tax to the County (BrightSource Energy, Inc., 2012). In the past, BrightSource worked with the County of San Bernardino to maximize sales and use tax allocated to the unincorporated San Bernardino County stemming from construction of the Ivanpah SEGS project (07-AFC-05C). This indicates that it is reasonably foreseeable that BrightSource will follow through with its intentions and do the same for Inyo County. Furthermore, BrightSource noted that even if it designated the “point of sale” as nearby Pahrump, NV, it would still be subject to use tax in Inyo County.

Based on these assumptions presented by the proponents, the County government could receive \$24.1 to \$29.2 million, depending on the scenario, in its local share of sales and use tax over the 29-month construction period based on the assumptions presented in this report. The difference in sales tax revenues between the two scenarios is derived from the fact that mirror costs are not included in the sales tax base in Scenario 1. These amounts represent the maximum available assuming the County and state take the actions necessary to ensure compliance with tax collection.

During operation, however, sales tax revenues from the project will be negligible because non-payroll O&M expenditures spent in the County amount to only \$27,000 annually. Of the amount collected, only \$2,900 would go to the county. The sales tax revenue generated for the County during the construction period is far greater than the

potential county expenditures estimated by the County and by Staff. Because of this, the net present value of the project net impact is positive in both cases.

Scenario 2 assumes that the project will generate additional sales tax revenues for the County because the newly employed local workers will be spending some of their additional disposable income locally on various goods, such as food, appliances and clothing. We generated a rough estimate of how much sales tax revenue employees of the direct and induced jobs created by the project will generate through local spending. Employees of the 50 direct and indirect jobs resulting from project construction will generate over \$0.9 million during the 29-month construction period, and employees of the 18 direct and indirect jobs created by operations and maintenance spending will generate roughly \$28,000 annually during the 25-year operation period. The County has expressed concern that increased employment during the O&M period could double the local population, which would place a financial burden on the County services that are population dependent. While a doubling of the local population would indicate roughly 100 additional employees in the O&M period, over five times the increase in jobs predicted by the model, we estimated the sales tax generated by employee spending if employment rose to 100 and found that this would generate nearly \$156,000 annually for the County. This would offset most of the estimated County costs induced by increases in population.

In addition, an education impact fee would be assessed on the administration building at a rate of \$0.47 per square foot. This would generate another \$11,109. Staff did not include property transfer tax revenues in our analysis because there will likely be no transfer of property for the proposed project. Currently, the applicant has not acquired any property for the project but is under an option to lease and has obtained the right of land. If the lease is carried out, as anticipated, there will be no property transfer tax revenues.

One question is whether the project might be excluded from the sales and use tax by the California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA) under the authority granted by the recently enacted Senate Bill 71 (Public Resources Code Section 26003, et al). It appears questionable whether the project would qualify in any case given the criteria listed by the CAEATFA emphasizing the requirement that “the project develops manufacturing facilities, or purchases equipment for manufacturing facilities, located in California” (CAEATFA, 2010). Nevertheless, the project owners must (1) apply for the exclusion to the CAEATFA and (2) demonstrate that the project would not have been constructed without the exclusion. The County can object to that exclusion and present a case in opposition. It is doubtful that the project would qualify for an exclusion because (1) the project has a power purchase agreement with PG&E and (2) the project is prepared to begin construction as soon as the Energy Commission approves it (assuming it is approved). Currently, BrightSource has stated that it is not operating the facility, and the vendor has not applied for such an exemption for this project. The vendor is not expected to going forward because it has not done so at Ivanpah (CEC, 2012c)

The solar project will have two additional economic impacts on the County’s sales and use tax revenues that are not quantified in this study due to the complexity of the analysis. A balanced presentation of the added sales tax revenues requires a full

accounting of the added governmental costs as well. Such an analysis is beyond the scope of this study. These additional economic impacts to County sales tax revenue include:

- First, developing the solar project will have an indirect, but positive, effect on complementary services in the vicinity. Businesses en route to the project sites, such as convenience stores and gas stations, stand to benefit from increased traffic moving through the area. A higher sales volume for these entities will lead to higher tax revenues for the County's share of the sales tax as well as other taxes (e.g., gasoline taxes). The value of these additional revenues with the County is unknown, and would be substantially larger during the construction period than during the longer operational period. However, few businesses are located close to the site in Inyo County, so these added revenues are likely to be small.
- Second, the increased sales tax revenues from the additional "rounds" of spending by the businesses supplying the solar project, their employees, and the induced spending on the overall economy are excluded in this analysis. This would depend on the local share of expenditures on project supplies.

CONCLUSION

The proposed project is expected to cost in the range of \$2.176 billion in total to construct with direct material costs of approximately \$1.05 billion. Using conservative assumptions about where plant components are assembled, it was determined that about \$71.4 million of the total \$2.176 billion in construction costs would be spent locally over three years. However, only \$0.23 million (0.3 percent) is projected by the applicant to be spent within Inyo County, and the remaining \$71.2 million (99.7 percent) would be spent in neighboring counties. This spending is expected to directly produce about two jobs within Inyo County, and induce another 48 positions. Such spending would increase County economic output by \$41.6 million and earnings by \$2.8 million.

Local spending on annual operating costs would be about \$27,000 based on the applicant's projections. This spending could directly produce 100 jobs, with about 5 of the 100 positions being filled by County residents and the remainder commuting from neighboring counties. It could indirectly generate another 13 jobs. Annual County economic output could rise by \$2.2 million and earnings by \$0.9 million.

Based on County Agency estimates, the County could incur gross costs of \$11.4 million during construction and \$1.7 per year during operation on public safety and other services in the local area (Scenario 1). Staff estimates are more conservative and predict that the county could incur costs of \$2.8 million during construction and \$0.39 per year during operation (Scenario 2).

Appendix Socio-1 Table 12 and **Table 13** summarize the net fiscal impacts during the construction and operational periods, and over the 28-year period of expected construction and operation for the two expenditures scenarios. These estimates represent the maximum available revenues presuming that the County and state take

the actions necessary to ensure that taxes are appropriately collected at the project site. (San Bernardino County has taken such actions at Ivanpah SEGS which is also owned by BrightSource.) The net present value represents the discounted sum of the cash flow of revenues and expenditures. A 5.2 percent “real” discount rate was used based on the current yield on Inyo long-term debt and the inflation rate projected by prices on U.S. Treasury bonds (Big Pine Unified School District., 2010; FMS Bonds, Inc., 2012; Yahoo Finance, 2012; U.S. Department of the Treasury, 2012a; U.S. Department of the Treasury, 2012b).⁵ During the three-year construction period, County agencies could receive between \$12.6 and \$27.3 million more than it expends. Once operational, the County could expend \$940,000 annually more than it receives in Scenario 1 and receive \$413,000 more than it expends in the first three years and \$743,000 more thereafter in Scenario 2. Over the entire period, the County would effectively break even in Scenario 1 and gain \$33.2 million net present value in Scenario 2. County gains would be positive even if the amount of materials subject to sales tax is cut in half in Scenario 2.

**APPENDIX SOCIO-1 Table 12
Net Fiscal Impacts on Inyo County:
28 Years, Scenario 1**

	Construction (3 Year Total)	Operation (Annual)	Net Present Value
Revenues	\$24,069,000	\$773,000	\$31,471,000
Expenditures	\$11,408,000	\$1,714,000	\$31,337,000
Net Impact	\$12,661,000	(\$941,000)	\$100,000

**APPENDIX SOCIO-1 Table 13
Net Fiscal Impacts on Inyo County:
28 Years, Scenario 2**

	Construction (29 Month Total)	Operation (Years 1-3)	Operation (Years 4 on)	Net Present Value
Revenues	\$30,043,000	\$801,000	\$801,000	\$37,289,000
Expenditures	\$2,791,000	\$388,000	\$58,000	\$4,054,000
Net Impact	\$27,252,000	\$413,000	\$743,000	\$33,200,000

Other County costs are not expected to change substantially. Population should remain unchanged as the local labor force, particularly for construction, is experiencing high unemployment and should be able to easily absorb the increased projected demand over the forecast period. Social welfare and public health expenditures may fall as unemployment decreases and socioeconomic conditions improve, but those have not been quantified. This report did not estimate induced changes in County revenues from the increased economic activity, which could be significant given the reported economic changes under a reasonably expected to occur scenario.

⁵ The “real” discount rate is used for cashflows that are not adjusted for future inflation, as is the case here. The discount rate has the inflation rate subtracted out.

This analysis has several key caveats which could alter the results and conclusion significantly if the situation changes. The first is that the overall cost estimates are based on published sources and only partially reflect the actual costs that will be revealed once the project is constructed and assessed by the County Assessor and Board of Equalization. The proportion of the project costs subject to taxation also could vary as (1) the amount of material sales subject to local sales tax could vary, and (2) the County Assessor may determine that differing proportions of the plants qualify for the property tax exemption. Perhaps the largest caveat is that the manufacturing plant for the mirrors will not qualify for a sales tax exemption as well. If that portion did qualify, the project could have a net negative direct fiscal impact on the County departments. And finally, the calculations of the local shares of property and sales tax are complex and uncertain due to changing fiscal conditions at the state level.

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SOCIOECONOMICS

List of Comment Letters

		Socioeconomics Comments?
1	Inyo County	X
2	Bureau of Land Management	
3	National Park Service	
4	The Nature Conservancy	
5	Amargosa Conservancy	
6	Basin & Range Watch	X
7	Pahrump Paiute Tribe	
8	Richard Arnold, Pahrump Piahute Tribe	
9	Big Pine Tribe of Owens Valley	
10	Intervenor Cindy MacDonald	X
11	Intervenor Center for Biological Diversity	
12	Intervenor, Old Spanish Trail Association	
13	Applicant, BrightSource Energy, Inc.	X

Comment #	DATE	COMMENT TOPIC	RESPONSE
1	July 17, 2012	Inyo County	
1.8		County objects to use of private lands for mitigation purposes.	Objection noted. Appropriate mitigation lands within Inyo County are unlikely to have other useful economic purposes unless they have specific mineral rights.
1.9		Economic impacts of retired private lands not included in economic analysis.	The economic impacts of the lands used for mitigation are included in the analysis. Because such lands are currently of low valuation and any alternative valuation would be highly speculative given the extremely limited water supplies in the region and a lack of identified mineral rights, the county will experience a net positive impact from the inclusion of mitigation lands in proximity of the power plant site. This has been clarified in the revised report. This analysis complies with County Title 21, Section 21.20.010.
1.10		The Consultant's report has a false premise that 1,000 construction workers will commute to site from their homes.	Appendix Socio-1 assumes that the construction workforce will either be hired directly from the Las Vegas / Pahrump labor pool, or under a PLA California workers will find temporary housing in the Las Vegas or Pahrump area, similar to the practice at the Ivanpah SEGS site. Further rationale is discussed in the Consultant's report at p.4-12.6. This has been clarified in the revised report.

Appendix 1 -- PSA Response to Comments, Socioeconomics

1.11a		Service demands for a commuting workforce will impose higher county costs.	The analysis includes most of the estimated county service costs. Specific changes are addressed to specific comments. This analysis complies with Inyo County Title 21, Section 21.20.010.
1.11b		Not unreasonable to anticipate a number of construction employees to dry camp or to reside in Tecopa or Shoshone.	The analysis currently assumes that 5% of the construction labor force will reside in Inyo County. Anyone dry camping will require an independent water supply which is problematic in the area. The number residing in Tecopa or Shoshone will be limited by available residential dwellings. The analysis does not include the positive fiscal impacts from increased employee populations and <u>commensurate local spending.</u>
1.12a		Clark County reports an increase of 30% in service calls in Primm during construction of Ivanpah.	According to Inyo County Sheriff William Lutze, the 30% increase in service calls is a comparison of stats from October 2009 to October 2010. The groundbreaking ceremony marking the start of construction at Ivanpah was on October 27th, 2010, therefore a 30% increase in calls to Las Vegas Municipal Police Department (LVMPD) in October 2009 to October 2010 would not be attributable to the construction at Ivanpah, which as of August 2012 is at the half-way point of completion. Staff requested more recent data from LVMPD which showed an increase in service calls in the Primm area of 6% from 2010 to 2011 and a decrease in felony crimes of 43% for the same period. Furthermore, as most of the HHSEGS construction labor force is likely to reside in the much larger community of Pahrump, or in Las Vegas, it is not likely that Inyo County would experience changes in service calls similar to Primm. This analysis complies with County Title 21, Section 21.20.010.
1.12b		The consultant did not visit the HHSEGS proposed project site to discover that camping on private land has been a problem.	See proposed Condition of Certification SOCIO-2.
1.13		Consultant did not question the applicant's estimate that 5% of construction costs would be spent in the county, and the Consultant substituted his judgement for that of the Sheriff.	At the July 27 workshop, the county pointed out that the 5% estimate probably was too high, not too low as implied by this comment. That 5% is too high implies that demand on the Sheriff's services will be lower than estimated in the report. Staff's report <u>uses the Sheriff's estimates for needed staffing.</u>
1.14		The absence of a CEC condition requiring a letter of credit or other financial assurance is nothing short of cavalier.	See proposed Condition of Certification SOCIO-3.

Appendix 1 -- PSA Response to Comments, Socioeconomics

1.15		The Consultant expresses uncertainty whether the project owner might seek a sales and use tax exclusion under CAEFTA.	Only the mirror manufacturing plant is eligible to request such an exemption, not the entire plant. This has been clarified in the revised report. Staff's report states that it is not reasonable to expect that such an exemption will be requested or granted for the reasons expressed in the report. However, Scenario 1 assumes that the vendor receives a sales and use tax exclusion.
1.16		It is not inconceivable that BSE might apply for a CAEFTA sale and use tax exemption.	BSE does not own the mirror manufacturing plant, which is owned by a vendor. The vendor has not applied for an exemption at the Ivanpah SEGS. Without this precedent, such an application would not meet the criteria for the CAEFTA. Staff ran Scenario 1 excluding the sales tax revenue on the \$446 million portion of the plant value could be eligible for such an exclusion.
Resolution 2012-29			
1.17a		Res. 2012-29 requires that the project be designated as a point of sale to the BOE.	See proposed Condition of Certification SOCIO-3 .
1.17b		Res. 2012-29 requires project owner to establish financial assurances of \$84.5 million.	County Title 21 Section 21.20.010 only requires that "the County and its citizens do not bear an undue financial burden from the project." This implies that any assurance be tied to the costs, not the revenues, projected for the project.
1.32		Res. 2012-29 requests a change in finding of fact that the socio economic impacts would be significant.	The report finds that it is reasonable to expect that the revenues generated for the county will exceed the reasonable expected costs by several fold, and thus there will not be significant socioeconomic impacts. This analysis complies with Inyo County Title 21, Section 21.20.010.
1.33		Size and location of the project.	Noted. See page 4.12-24 of the FSA, Other Services.
1.34		Res. 2012-29 requests a change in finding of fact that less than 2% of county land is in private ownership, and every acre restricted for the purpose of compensatory mitigation results in a significant impact.	Mitigation lands are part and parcel of the overall project, and the net benefits that accrue to the county include the costs of providing mitigation lands. In addition, it is speculative to assume that the mitigation lands would have a higher economic value given the resource constraints on candidate lands.
1.35		Description of Charleston View.	Noted. See page 4.12-5 of the FSA, Socioeconomics Table 2.
1.36		Closest communities to site.	Noted
1.37		Size of closest communities.	Noted. See page 4.12-5 of the FSA, Socioeconomics Table 2.
1.38		Staffing of local services.	Noted. See revised page 4.12-24 of the FSA, Other Services.
1.39		Sheriff's staffing and patrol area.	Noted. See revised page 4.12-19 of the FSA, Affected Environment.
1.40		Additional services will be required during the construction period.	Noted and included in the assumptions in the report.

Appendix 1 -- PSA Response to Comments, Socioeconomics

1.41		HHSEGS is anticipated to be constructed under the terms of a PLA with California Trade Councils. Majority of workers will commute from California to the project site.	A PLA has not yet been signed. The analysis assumes that regardless of whether a PLA is signed, the vast majority of construction workers will commute to the project site from temporary housing in Nevada. See page 4.12-3 of the FSA, Setting.
1.42		5% of the construction workforce will reside in Inyo, resulting in a 30% increase in the local population. The site is surrounded by vacant land on which "squatting" has occurred.	Noted. See page 4.12-15 of the FSA, Conclusion.
1.43		The temporary increase will lead to increased demand for County services.	See response 1.12a.
1.44		The County estimates that costs will increase \$11.1 million during construction and \$1.7 million per year during operation.	Those cost estimates are included as Scenario 1 in the report.
1.45		Table of costs	See response 1.44
1.46		Increased costs will not be offset by increased property tax, nor will the County gain economic benefits due to the remote location.	As noted in the report, property taxes are only one component of the increased tax revenues reasonably expected to occur. Whether the property taxes are sufficient to cover ongoing costs depends on the cost scenario. This analysis complies with County Title 21, Section 21.20.010.
1.47		County Title 21 governs the siting, licensing and construction of the proposed project. The definition of "environment" exceeds that of CEQA, and requires mitigation of "undue financial burden."	The Commission must consider LORS, but has final authority over siting, licensing and construction of the proposed project under state law. The Commission will give due consideration to the County's concerns. This analysis complies with County Title 21, Section 21.20.010.
1.48		Designation of the HHSEGS jobsite for purposes of the sales and use tax would result in the County receiving revenues to offset economic impacts.	Consistent with the report.
1.49		A consultant with expertise in the area of sales & use tax should be funded by the project owner.	Comment Noted
1.50		The Consultant's report stated unequivocally that the County will receive \$84.5 million in sales and use tax.	The report stated that it was reasonable to expect that the project will generate that amount of sales tax. However, the report notes that any forecast is uncertain within a potential range. In addition the sales and use tax forecast is revised as noted in response to specific comments, and an updated estimate provided by the applicant.
1.51		Requests <u>COC SOCIO 2</u> that HHSEGS jobsite be designated as point of sale, and that the method be approved by the County.	Noted. Staff has proposed Condition of Certification SOCIO-3 to address this.
1.52		Requests that a consultant with expertise in the area of sales & use tax should be funded by the project owner.	Comment Noted

Appendix 1 -- PSA Response to Comments, Socioeconomics

1.53		Requests that if BSE receives a sales tax exemption under CAEFTA, that BSE be required to pay the County \$84.5 million.	Noted. Under County Title 21, the applicant is only required to mitigate "undue financial burden." The projected sales tax revenue is well in excess of the forecast of costs to the County.
1.54		Requests that BSE deliver a letter of credit for \$84.5 million.	See response 1.53.
1.55		Request that the letter of credit be reduce annually by the amount of sales & use tax attributable to the project.	Comment Noted
1.56		Requests that 30 days after completing construction that BOE records be reviewed to audit sale & tax revenues.	Sales and use tax revenues attributable to the project will accrue to the county over a several year period, including after project completion because some of the increase comes from changes in relative statewide tax allocations. The report has been revised to clarify this.
1.57		Requests that the letter of credit will be returned upon full payment of the sales & tax revenues.	Comment Noted
1.58		Requests that the letter of credit be required as a mitigation under County Title 21.	Comment Noted
1.59		Requests COC SOCIO 3 that the CEC in coordination with the County investigate means to enhance degraded public lands rather than use private lands for <u>compensatory mitigation</u> .	Comment Noted
1.60		Requests that if private lands are used for mitigation that an economic study of lost opportunity costs be conducted.	See response 1.34.
1.72		Mitigation would result in net loss of County land. Mitigation should be met based on the County's COC.	See response 1.34.
1.73		It is unresolved how the project proposes to subsidize facilities...a large and temporary increase in population will require.	The report shows it is reasonable to expect that tax revenues will exceed expected costs by a substantial amount during the construction period. This analysis complies with County Title 21, Section 21.20.010.
1.74		The project will result in population increases that create a need for increases in services and infrastructure. Compliance should be met based on the County's COC.	See response 1.73.
1.75		The project will result in population increases that create a need for increases services and infrastructure. Compliance should be met based on the County's COC.	See response 1.73.

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1.95		\$2.9 billion total cost for construction (\$2.5 billion in materials) vs. \$2.18 billion assessed value confused Gruen Gruen + Assoc. consultants	The total construction costs are derived from the AFC Section 5-10, the assessed land value provided the County Assessor, an incremental cost increase reported in Data Response Set 2F 191, and an updated workforce estimate by the applicant. Of this amount, \$2.58 billion is materials and equipment. In Data Response Set 2F 191, the applicant responded that the capital value for assessment purposes is \$2.18 billion. The property tax amount has been revised in the report to reflect the corrected capital value reported by BSE.
1.96a		San Bernardino County "conversations" indicated \$7.2 million in sales and use taxes for Ivanpah construction accruing to County due to BSE cooperating w/ a tax attorney	Staff contacted San Bernardino County's special consultant on sales & use tax. He confirmed that the approach in the Consultant's report is consistent with the method used by San Bernardino County. Tangible property subject to taxation is likely to exceed \$2 billion.
1.96b		Only a portion of the sales & use tax goes to the County's General Fund.	The report states its reasonable to expect that \$19 million would go to the General Fund. (p. 2) While the 1.0% of the sales and use tax allocations listed in Table 5.5 of the report have state-mandated purposes, those purposes have been identified by the county as significant added expenses created by the proposed project. In addition, the amount generated by just the portion going into the General Fund greatly exceeds the reasonably expected costs under Scenario 1 using the county's cost estimates. Finally, the sales tax excludes the transportation tax portion that would largely be spent at the discretion of County Supervisors through the Council of Governments.
1.96c		Property tax assumes that the base value remains constant into the future.	The tax base should be depreciated using the BOE's Percent Good Factor. A revised estimate has been included in the revised report.
1.97a		Inyo County will receive 30% of annual property tax based on assessment; school districts 62.5% and special districts 7%	This is consistent with Table 5.3 in the report that is the basis of the fiscal impacts assessment.
1.97b		Ivanpah has an estimated cost of \$500 million and a tax basis of \$250 million.	As noted in a recorded conversation, Mr. Endler did not give Mr. Gruen an estimated construction cost. In addition, Ivanpah was only 18% complete as of July 2012. Based on the Commission's ongoing review of power plant costs, the cost estimate of approximately \$3 billion used in the report is consistent with costs reported publicly for Ivanpah, and for costs estimate for CSP technology projects. The assessment value of \$2.2 billion provided by the applicant is consistent with this estimate.

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1.97c		Taxable spending and increases in property tax base from JEDI are unreliable.	While a University of California study recently confirmed the reliability of IMPLAN-based model estimates, the Consultant's report considered these additional fiscal benefits sufficiently uncertain and relatively trivial compared to the direct project fiscal contributions that these amounts are excluded from the reported total added fiscal revenues. Only additional sales tax revenues are included in Scenario 2.
1.98		"Opportunity costs" of project and mitigation lands	If the 170 residential lots were developed, based on the current average home sale price of \$90,000, this total assessed value would increase to only \$15 million, or less than 1% of the expected value of the proposed project. A large-scale residential development on this location would require 9,000 to 18,000 acre-feet of water, and no such water supply is available nearby in California. An interstate water project would be highly speculative. As such, no other economic activity appears viable in the locale. Mitigation lands are part of the project, and project and mitigation lands will pay property taxes, either on private or public lands (the latter as in-lieu.)
1.99		Attraction of tourists to project site	Creating a tourism attraction would be an additional benefit that accrues to the project and would further mitigate any potential socioeconomic impacts. This comment appears to contradict Comment 1.98 that the project will decrease opportunities for developing tourism in the region.
1.101		Contractors and Subcontractors obtain a Board of Equalization sub-permit and allocate eligible sales and use tax payments to Inyo County	See response 1.51.
1.102		Requests that a consultant with expertise in the area of sales & use tax should be funded by the project owner.	See response 1.52.
1.103		Interpretive Center (mitigation for Visual Resources, Cultural Resources) be designed and operated to promote and take full advantage of potential for expanded tourism	Noted
1.105		Demand for human and health services shown in Table III.2	While Table III.2 shows trigger levels for added expenditures, it does not tie those triggers to increases in demand from the proposed project. Given that the entire population increase will be either project employees or their families, it appears unlikely that demand for all but a small portion of the listed services will increase. The report includes an estimate for added costs during the construction period in Scenario 2, and the county's original estimate in Scenario 1. Demand for these services is discussed at p. 4.12-15 of the report.

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1.106		Cites conversation with San Bernardino Sheriff about increased incidents at solar power plants there.	See revised page 4.12-20, Affected Environment.
1.107		Cites conversations that law enforcement calls have increased 30% in Primm, NV due to Ivanpah project; concerns about "squatting" and illegal camping around HHSEGS site; concerns about increase in local population due to Project Labor Agreement	See responses 1.10, 1.12a, 1.12b, and 1.41. See proposed Condition of Certification SOCIO-2.
1.113		Motor Pool costs associated w/ County services increases due to project	Should additional trips to the project area outside of the Energy Commission's jurisdiction be deemed necessary by county staff, the projected sales tax revenue is in excess of the forecast of estimated costs to the County Motor Pool.
Comment #	DATE	COMMENT TOPIC	RESPONSE
6	July 23, 2012	Basin and Range Watch	
6.21		Nevada will get only a small portion of the economic benefits as only 10% of workers will come from Nevada.	Table 3-1 of the report shows that the applicant projects that 95% of the construction workforce will reside in Nevada, expending funds locally there. In addition, 95% of the ongoing workforce is expected to reside in Nevada, adding to ongoing employment opportunities.
6.22		Concerned that Nye County will be burdened with costs of potential emergencies.	Nye County's electricity cooperative, Valley Electric Association, has agreed to interconnect the power project. As a public corporation, the ratepayers of Nye County can weigh in on this decision.
6.44		Developers do not share benefits of large energy projects with local community.	The analysis finds that it is reasonable to expect that increased tax revenues will exceed expected additional costs for infrastructure and services as shown in Tables ES-1 and ES-2. Such a net increase in net revenues would constitute a net public benefit.
Comment #	DATE	COMMENT TOPIC	RESPONSE
10	July 21, 2012	Intervenor Cindy MacDonald	
10.1	13-3 #1	Where are complimentary services located in vicinity?	Such services are located in Tecopa and Shoshone.
10.2	13-3 #2	Where are businesses enroute to the project site?	5% of the construction workforce can be expected to reside in Tecopa or Shoshone. Such businesses are located in those communities.

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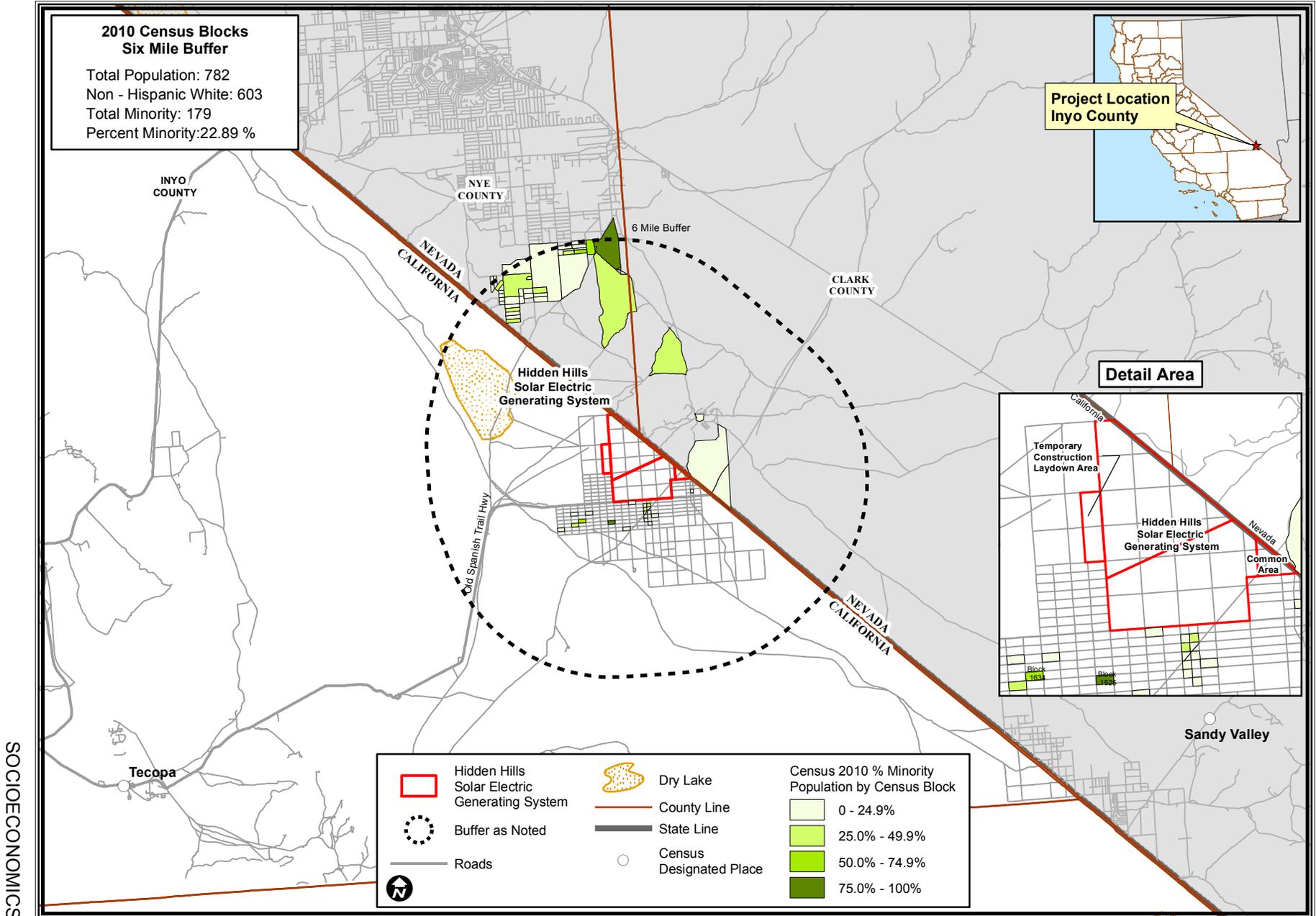
10.3	13-3 #3	At what entities can Inyo County expect to receive higher sales volume?	Such businesses are located in Tecopa and Shoshone. However, those tax revenues were included in the estimated tax revenue increases reported in Tables ES-1 and ES-2, but have been excluded from the summary table, but are included as illustrative examples of reasonable to expect future conditions.
10.4	13-3 #4	How can Staff conclude that tax revenues will be substantially larger during construction than during the operational period?	The tax revenue increases in Tables ES-1 and ES-2 are dominated by the direct payments from proposed project and indirect and induced additional revenues from expenditures at local businesses are only a small portion of the total.
10.5	13-5 #1	Would Staff consider allocating the County money for tax assessment given stipulations about proceedings?	The report shows in Tables ES-1 and ES-2 that the county can reasonably expect to receive more than sufficient tax revenues to cover the expenses of recovering those revenues, as is typical and expected of all government agencies.
10.6	13-5 #2	In what sectors would the additional 77 jobs be created in?	The JEDI model used to estimate the job impacts does not provide a breakdown of the specific sectors in which those jobs have been created. Results are reported at p. 11 of the report. Note that input-output model upon which JEDI is based (IMPLAN) has been validated by a recent University of California study.
10.7	13-5 #3	How does Staff's recommended reductions, cuts and revised budgets serve the public interest of the County?	Other than the reference to discussion of the Assessor's expenses, the commentor has not provided other specific examples where the staff has recommended cuts and revised budgets, so a response is not possible.
10.8	13-6 #1	Why did Staff leave out analysis of potential adverse impacts to local residents?	The fines, licenses and special taxes left out would be paid by new construction and operational workers who come to the county, not by existing local residents. These would be added revenues to the county, and thus would be further benefits.
10.9	13-6 #2	Why did Staff report on the potential advantages but ignored potential disadvantages?	The fiscal impact reports both increased revenues and increased costs. Revenues are net of foregone revenues.
10.10	13-6 #6	If Staff recommends not funding infrastructure and services, where are the public benefits?	The analysis finds that it is reasonable to expect that increased tax revenues will exceed expected additional costs for infrastructure and services by several fold as shown in Tables ES-1 and ES-2. Such a net increase in net revenues would constitute a net public benefit.
Comment #	DATE	COMMENT TOPIC	RESPONSE
13	July 23, 2012	Applicant, BrightSource Energy, Inc. -- p. 230	
13.1		Environmental Justice	See revised page 4.12-5 of the FSA, Minority Populations
13.2		Environmental Justice	See revised page 4.12-5 of the FSA, Minority Populations
13.3		Federal LORS	Recommended federal LORS applies to agencies receiving federal funds, not applicable to list in this case.

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13.4	Environmental Justice	See revised page 4.12-5 of the FSA, Minority Populations
13.5	Ommited word	See revised page 4.12-8 of the FSA, Induce Substanstial Population Growth
13.6	EPC Contractor	See revised page 4.12-3 of the FSA, Setting
13.7	Impacts to SIFPD	See revised page 4.12-18 of the FSA, Conclusion
13.8	Ommited word	See revised page 4.12-19 of the FSA, Affected Environment

SOCIOECONOMICS - FIGURE 1

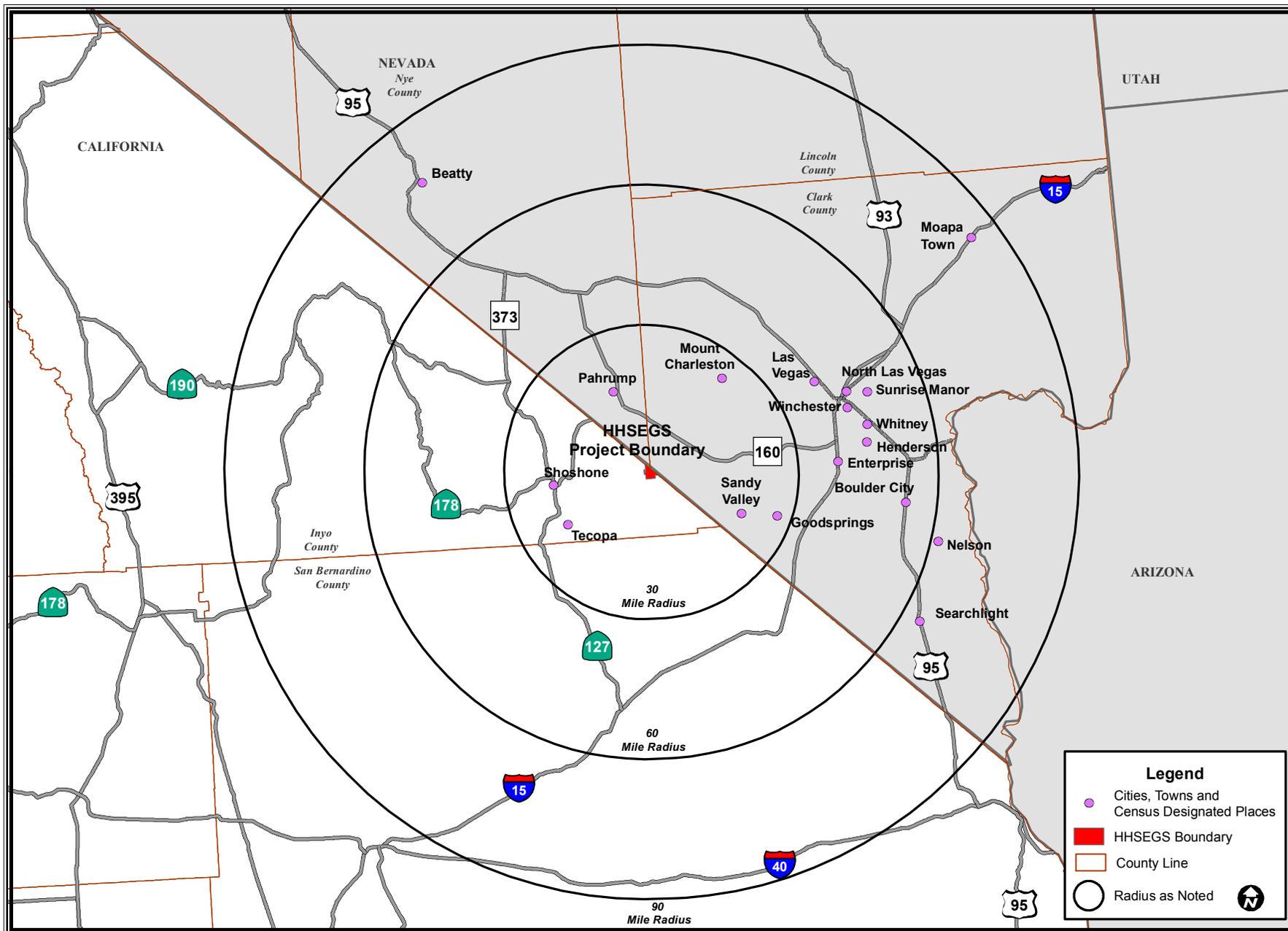
Hidden Hills Solar Electric Generating System (HHSEGS) - Census 2010 Minority Population by Census Block - Six Mile Buffer



SOCIOECONOMICS

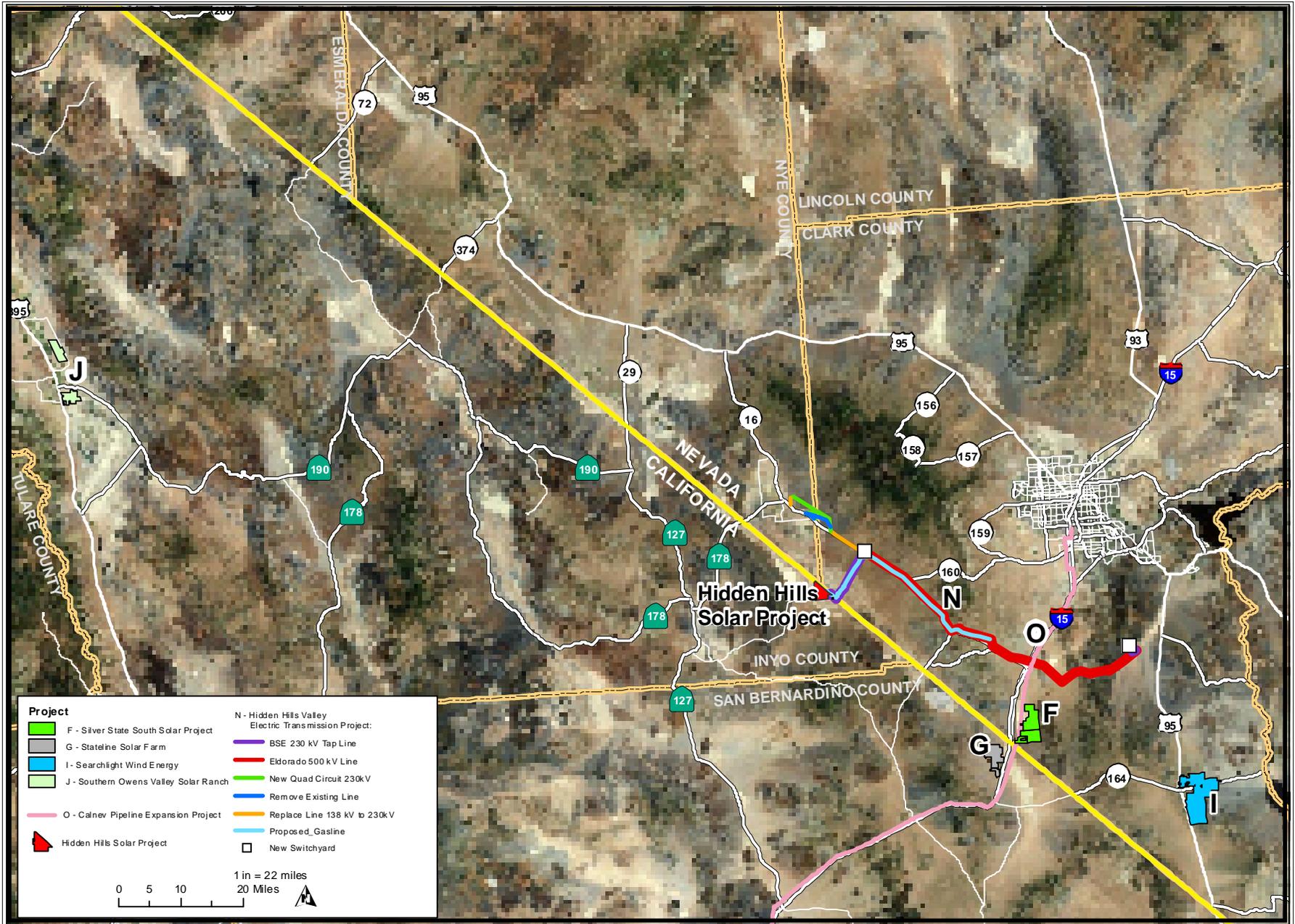
SOCIOECONOMICS - FIGURE 2

Hidden Hills Solar Electric Generating System (HHSEGS) - Cities, Towns and Census Designated Places within 2 hour Commute



SOCIOECONOMICS - FIGURE 3

Hidden Hills Solar Electric Generating System (HHSEGS) - Cumulative Socioeconomic Projects



CALIFORNIA ENERGY COMMISSION, SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION

SOURCE: BLM Southern Nevada District - Renewable Energy in Southern Nevada, BLM California - Renewable Energy Priority Projects, and Los Angeles Department of Water and Power.