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October 1, 2012

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Mike Monasmith
Senior Project Manager
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California Energy Commission
1516 Ninth Street, MS-15
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Subject: Updated Workforce Analysis
Hidden Hills Solar Electric Generating System (11-AFC-2)

Dear Mr. Monasmith:

On behalf of Hidden Hills Solar I, LLC; and Hidden Hills Solar II, LLC, please find attached a copy of the updated workforce analysis for construction and operations. It has been updated based on experience acquired from other large projects in remote locations and from construction of the Ivanpah SEGS project.

Please call me if you have any questions.

Sincerely,
CH2M HILL

John L. Carrier, J.D.
Program Manager

Encl.

c: POS List
Project file

Hidden Hills Solar Electric Generating System (HHSEGS)

(11-AFC-2)

Updated Workforce Analysis (Air Quality, Socioeconomics, Traffic & Transportation, and Worker Safety & Fire Protection)

Submitted to the

California Energy Commission

Submitted by

Hidden Hills Solar I, LLC; and
Hidden Hills Solar II, LLC

October 1, 2012

With Assistance from
CH2MHILL
2485 Natomas Park Drive
Suite 600
Sacramento, CA 95833

Executive Summary

This workforce analysis evaluates the impacts of updated construction and operation worker and traffic assumptions for the Hidden Hills Solar Electric Generating System (HHSEGS) Project. The construction worker and traffic assumptions have been updated based on experience acquired from other large projects in remote locations and from construction of the Ivanpah SEGS project. This assessment updates workforce numbers and reflects a change in origin of those workers. The operation workforce numbers have been slightly reduced from what was originally stated in the Application for Certification. Only four subject areas are affected by this update: Air Quality, Socioeconomics, Traffic & Transportation, and Worker Safety & Fire Protection.

Air Quality

The overall conclusions presented in the Application for Certification (AFC) have not changed: using the criteria employed by California's air districts and by U.S. Environmental Protection Agency, the project's emissions will not cause or contribute significantly to a violation of any ambient air quality standards, do not trigger requirements for offsets or best available control technology, and will have less-than-significant impacts for all pollutants under the California Environmental Quality Act. The updated assumptions will not subject the project to any new laws, ordinances, regulations or standards. Total daily and annual emissions of all pollutants during construction are lower than those originally presented in the AFC. In addition, air quality impacts discussed in the AFC and data responses will not change for the operations phase of the project because the operations workforce will be slightly reduced.

Socioeconomics

During the construction phase, HHSEGS will provide about $305.3 million (in 2011 dollars) in construction payroll, at an average salary of $50 per hour (including benefits). The estimated HHSEGS annual indirect and induced employment within the 5-county region would be 89 and 409 jobs, respectively. These additional jobs result from the $20.7 million in annual local construction expenditures as well as the approximately $53.7 million in annual spending by local construction workers.

HHSEGS's capital cost is estimated to be $2.176 billion (in 2011 dollars); of this, equipment, materials and supplies are estimated at approximately $1.05 billion. The estimated value of materials and supplies that will be purchased locally during construction of HHSEGS is $71.4 million. Of this amount, about $50 million would be spent in Inyo County. Local sales and use tax revenue expected to be generated during the 29-month construction period on the $50 million is approximately $3.85 million. Of this amount, about $0.75 million (or 1.5 percent of the $50 million) goes to Inyo County while the remaining $3.125 million (or 6.25 percent of the $50 million) goes to the State of California. The estimated sales and use tax revenues on the $1.05 billion in equipment, materials and supplies that are either purchased locally or delivered to the project from other locations is $81.375 million. Of this amount, $34.755 million is expected to be allocated to Inyo County while the remaining $46.62 million is expected to go to the state. The 34.755 million includes the $0.75 million in local sales tax revenues to Inyo County.

During the operations phase, HHSEGS will provide about $13.04 million (in 2011 dollars) in operational payroll, at an average salary of $130,435 per year (including benefits) for the assumed 100 full-time employees. Of the 100 full-time employees, five are assumed to be from Inyo County. HHSEGS will have an annual O&M budget of approximately $0.54 million (in 2011 dollars). The estimated HHSEGS induced employment within Inyo County will be three permanent jobs, resulting from the $0.45 million in disposable payroll.

Traffic & Transportation

As a result of the updated workforce traffic, during the construction period additional potential traffic impacts have been identified at two intersections. At the Tecopa Road/SR 160 intersection, impacts were previously identified for the PM peak hour, but additional impacts were identified for the AM peak hour. At the Baker Boulevard/SR 127 intersection in San Bernardino County, potential impacts were identified for the Monday morning and Friday afternoon peak hours, although those impacts have not been quantified. These impacts could be significant without further mitigation measures. However, with implementation of appropriate Traffic Management Plan measures and additional proposed migration measures, the potential project impacts will be less-than-significant.

The operations workforce impacts discussed in the AFC and Data Responses will not change for the operations phase of the project because the operations workforce will be slightly reduced. Therefore, no update to the operations analyses is required. The potential operations-related traffic impacts remain less than significant.

Worker Safety & Fire Protection

Potential traffic impacts on emergency services during the construction period will increase slightly due to the increased number of workers and commute trips. The potential impacts have been analyzed and it was determined that an additional five traffic accidents could occur as a result of project-related worker commute travel during the 29 month construction of HHSEGS.

Worker Safety & Fire Protection impacts discussed in the AFC and data responses will not change for the operations phase of the project because the operations workforce will be slightly reduced.

Contents

Tables (in order of presentation)

Figures

Attachments

SECTION 1.0

Methodology and Updated Assumptions

The individualized methodologies for the updated Air Quality, Socioeconomic, Traffic & Transportation, and Worker Safety & Fire Protection analyses are set forth in the following sections. However, the following assumptions are common to all four areas of analysis.

- Onsite peak construction workforce increased from 1,033 workers in Month 14, to 2,293 workers in Month 19. (A detailed breakdown of the workforce is provided in Section 3.0, Socioeconomics).
- Number of work shifts decreased from three shifts to two shifts. The day shift would generally[1] be from 5:00 AM to 3:30 PM, and swing shift would be from 6:00 PM to 4:30 AM.
- Worker origin assumptions were updated.
  - 70 percent of workforce is assumed to be from California, with a majority seeking work-week lodging in Nevada.
  - 30 percent of workforce is assumed to be from Nevada.[2]
  - New assumptions were made for the places of lodging. Of the 70 percent coming from California:
    - 15 percent were assumed to reside in Pahrump, Nevada
    - 5 percent were assumed to reside in Tecopa and Shoshone (Inyo County)
    - 50 percent were assumed to reside in the South Las Vegas area
  - Of the 30 percent coming from Nevada:
    - 5 percent were assumed to have permanent residence in Pahrump
    - 25 percent were assumed to have permanent residence in the Las Vegas area
- The following commute assumptions were also made:
  - Workers driving from California would use their own personal vehicles to drive to and from their temporary place of lodging.
  - Of the California dayshift workers, 80 percent would drive to their temporary place of lodging on Sunday evening; 20 percent would drive directly to the work site on Monday morning.
  - Of the California swing shift workers, 90 percent will drive directly to the work site on Monday in their own cars. The 10 percent that are staying in town through the weekend will carpool to the work site on Monday.
  - From place of lodging (California workers) or their homes (Nevada workers) to the work site, day shift ridership would average 1.2 persons per vehicle. On an average basis, vehicle use was calculated as 100 workers/1.2 workers per vehicle = 83 vehicles per 100 workers.

[1] The start and end times of the day shift are expected to change based on season and temperature. Thus, summer construction would begin earlier than winter construction.

[2] The HHSEGS project is also being analyzed as a "connected action" in the Bureau of Land Management (BLM) Environmental Impact Statement for the transmission system upgrades in the right-of-way grant (ROW) application of Valley Electric Association and the natural gas line upgrades in the ROW application of the Kern River Gas Transmission project prepared pursuant to the National Environmental Policy Act (NEPA). Because the HHSEGS project is a connected action and because BLM's NEPA contractor will need information on potential impacts of the connected action in Nevada, potential impacts of HHSEGS as a connected action in Nevada are presented in this analysis to facilitate the BLM's NEPA review.

  - As the day shift workforce approaches 1,000 workers, 15-passenger vans would be used to increase the day shift ridership to 1.5 persons per vehicle for California workers. Thus, during the peak months of construction, vehicle use was calculated as 100 workers/1.5 workers per vehicle = 67 vehicles per 100 workers. The ridership for Nevada workers would remain at 1.2 persons per vehicle throughout the project construction period.
  - The California and Nevada swing shift carpool rate would average 1.2 persons per vehicle, regardless of the size of the swing shift workforce.
- Work-week durations were updated for both day shift and swing shift
  - 50 percent of the workforce was assumed to work a 5-day, 10-hour-per-day work week (Monday through Friday for day shift; Monday night through Saturday morning for swing shift). Of those:
    - The California workers were assumed to drive their cars to the work site on Friday and leave to return home following their shift.
    - The Nevada workforce was assumed to carpool averaging 1.2 persons per vehicle.
  - 40 percent of the workforce would stay and work an additional 10-hour shift on Saturday, returning home at the end of their shift
  - 10 percent of the California workforce would stay over the weekend
- Geographic area of worker origin was expanded to include Inyo, Kern, Mono, San Bernardino and Riverside counties in California, in addition to Clark and Nye counties in Nevada.

Tables from the Application for Certification (AFC) and data responses that have been updated use the AFC table number, but have an “R” (for revised) following the table number. Hence, Table 5.10-17 from the AFC has been updated herein and is now referred to as Table 5.10-17R1 (meaning first revision). New tables (i.e., those not found in the AFC or data responses) are numbered sequentially by discipline. Thus, the first table in the Air Quality analysis is Table AQ-1. The other conditions provided in the AFC and subsequent data responses have not changed except as set forth herein.

SECTION 2.0

Air Quality

This air quality assessment evaluates the impacts of the updates to the construction worker travel assumptions and provides offsite emissions during the construction period, based on the updated construction worker schedule. Air quality impacts discussed in the AFC and data responses will not change for the operations phase of the project because the operations workforce will be slightly reduced.

The overall conclusions presented in the AFC have not changed: using the criteria employed by California's air districts and by U.S. Environmental Protection Agency, the project's emissions will not cause or contribute significantly to a violation of any ambient air quality standards, do not trigger requirements for offsets or best available control technology, and will have less-than-significant impacts for all pollutants under the California Environmental Quality Act. The updated assumptions will not subject the project to any new laws, ordinances, regulations, or standards.

2.1 Updated Air Quality Assumptions

Updated peak monthly and maximum annual construction worker trip counts are compared with the data in the AFC in Table AQ-1, below. In the AFC, "Peak Daily Worker Trips" were calculated by assuming that all construction workers traveled to the work site through California, with a fixed carpool rate of 15 percent. As discussed in Section 1.0, the assumptions regarding construction worker residency, travel routes, and carpooling rates have been updated and refined for this analysis. The 30 percent of the workforce that resides permanently in Nevada will not travel any significant distance in California because the project site is located at the state line. Similarly, California residents who reside in Nevada (South Las Vegas and Pahrump) during the week will travel to and from the site through Nevada on most days, driving through California only when they travel to and from home for the weekend.

TABLE AQ-1
Updated Construction Worker Trip Counts for Travel in California

Pollutant	AFC[a]	Updated Construction Traffic Assumptions
Construction Workers		
Peak daily workers (Onsite)	1,033	2,293
Peak daily workers that are California residents	n/a	1,605[b]
Peak daily worker trips within California	956	1,415[c]
Average daily workers during peak 12-month period	961	1,749
Average daily workers that are California residents	n/a	1,225[b]
Average daily worker trips within California	889	1,097[c]

[a]See AFC Appendix 5.1F, Attachment 5.1F-1

[b]70% of workers are assumed to be California residents who commute to their homes on weekends, but who reside in Nevada on weekdays for the duration of the project. See Section 1.0 for discussion of trip origins and carpooling assumptions.

[c]Trips within California vary by day of week and location of worker residence. See text.

In updating the construction worker traffic assumptions, the assumptions regarding where the construction workers will travel from have also been updated. The assumptions regarding worker origin were discussed in Section 1.0.

Based on the travel origin assumptions described in Section 1.0, there will be 1,605 California-based workers (1,177 in the day shift and 428 in the swing shift) on the peak workforce travel day. Peak daily vehicle miles will occur on a Monday, when 20 percent of day shift workers and 90 percent of swing shift workers commute to the work site from home with no carpooling. Travel distances on the road segments analyzed in Section 4.0, Traffic & Transportation, and are shown in Table AQ-2, below. Travel assumptions are described in Section 1.0.

TABLE AQ-2
Road Segments and Travel Distances Within Inyo County

Road Segment	Travel Distance (mi)
Tecopa between SR 127 and the Nevada state line	30.1
SR 127 south of Tecopa to the County line	6.5
SR 127 from Tecopa Road to SR 178 (Charles Brown Highway)	8.2
SR 178 from SR 127 to the Nevada state line	19.3

As discussed in Data Response 9, Set 1A (November 2011), emissions calculations for on-road worker vehicles (all assumed to originate in Inyo County) were based on the following assumptions:

Oxides of nitrogen (NOx), carbon monoxide (CO) and volatile organic compounds (VOC) emissions were based on EMFAC2007 V2.3 runs that used the following assumptions:

Scenario year: 2013 – All model years in the range 1969 to 2013 selected

Season: Annual

Area: Great Basin Valleys Air Basin Average

I/M Status: COO Basic (2005) – Using I/M schedule for area 1 Alpine (GBV)

SO_2, PM_{10} and $PM_{2.5}$ emissions were based on EMFAC2007 V2.3 runs that used the following assumptions:

Scenario year: 2013 – All model years in the range 1969 to 2013 selected

Season: Annual

Area: Statewide totals average [3]

I/M Status: Enhanced Interim (2005) – Using I/M schedule for area 59 Los Angeles (SC)

These EMFAC run outputs were provided in Appendix 5.1F, Attachment 5.1F-1 of the AFC. For this updated analysis, NOx, CO, and VOC emissions for on-road worker vehicles driven by workers who reside in southern California are based on the EMFAC2007 V2.3 runs for the South Coast Air Basin (SCAB). In preparing the SCAB EMFAC-based emission factors, errors were identified in the CO and VOC emission factors for the Great Basin Valleys Air Basin (GBVAB) that resulted in significantly overstated emission rates for those pollutants in the AFC. Those errors are corrected here. The SCAB and GBVAB EMFAC results and (corrected) emission factors are included as Attachment AQ-1.

[3] Basin-specific fleet average emission factors were used except when such a result would yield an inventory too low to calculate accurate emission factors. For example, in the GBVAB run, PM_{10} emissions were 0.01 tons per day, which is the lowest value that registers on EMFAC. Because of EMFAC rounding conventions, that value could actually range from 0.005 to 0.0149 tons per day. In these cases (that is, for SO_2, PM_{10}, and $PM_{2.5}$), EMFAC was rerun on a statewide basis, producing larger inventory and activity projections and thus a more accurate emission factor.

2.2 Updated Construction Period Emissions Calculations

Updated criteria pollutant emissions from offsite construction activities are also shown in Attachment AQ-1. Tables AQ-3 and AQ-4 show maximum daily and maximum annual emissions during construction, which have been updated as described above. The original analysis in the AFC conservatively overestimated maximum daily emissions by combining maximum daily onsite emissions, which occur during Months 8 and 9, with maximum daily offsite emissions, which occur during Month 19.

TABLE AQ-3
Maximum Daily Emissions During Project Construction, Pounds Per Day (Month 8 [Combustion], Months 8 and 9 [Fugitive Dust])

	Offsite Emissions[a]		Total[b]	
Pollutant	AFC Assumptions	Updated Construction Traffic Assumptions	AFC Assumptions	Updated Construction Traffic Assumptions
NOx	1,357.8	313.0	1,708	697
CO	2,778.0	436.6	2,959	629
VOC	345.9	58.5	392	88
SOx	1.5	0.6	2.2	1.3
PM_{10}	55.4	13.4	246	204
$PM_{2.5}$	42.9	10.3	81	48

[a] Includes worker travel and truck deliveries.
[b] Includes onsite construction equipment, fugitive dust and concrete batch plant as well as offsite emissions, as updated in Data Response 8, Set 1A, November 2011. See text.

TABLE AQ-4
Peak Annual Emissions During Project Construction, Tons Per Year

	Offsite Emissions[a]		Total[b]	
Pollutant	AFC Assumptions	Updated Construction Traffic Assumptions	AFC Assumptions	Updated Construction Traffic Assumptions
NOx	30.9	11.6	62.2	45.8
CO	302.3	24.2	319	41.7
VOC	32.3	3.0	34.5	5.6
SOx	<0.1	<0.1	0.1	0.1
PM_{10}	1.5	0.6	14.1	13.3
$PM_{2.5}$	1.0	0.4	3.7	3.1

[a] Includes worker travel and truck deliveries.
[b] Includes onsite construction equipment, fugitive dust, and concrete batch plant as well as offsite emissions. See text.

The total emissions shown in Tables AQ-3 and AQ-4 include onsite construction-related emissions from onsite construction equipment, fugitive dust and concrete batch plants. The updated emissions totals reflect the assumption, made in response to California Energy Commission (CEC) Staff's request that some fraction of the construction equipment would be equipped with slightly higher-emitting Tier 2-controlled engines, rather than Tier 3 or 4 engines as originally assumed in the AFC. These earlier updates were based on Staff's observation that some other projects have not been able to obtain Tier

3-powered vehicles for some specialty construction equipment. Based on a review of information collected for the Ivanpah SEGS project and after consultation with Staff, Applicant prepared a updated construction emissions impact analysis for Data Response 8, Set 1A (November 2011) that assumed that 20 percent of the construction equipment horsepower would come from Tier 2 vehicles. The updated onsite construction emissions calculations provided in that data response showed that while daily and annual NOx and CO emissions would be expected to increase if a significant fraction of Tier 2 vehicles are used during construction, emissions of other pollutants would remain essentially unchanged. These updates have already been evaluated and are reflected in the Staff's Preliminary Staff Assessment (PSA).

The reductions in offsite emissions during the construction period result from the updates described above (the updates to peak daily and maximum annual worker trip assumptions and calculations, and the correction of the erroneous CO and VOC emission factors used in the original calculations for worker travel emissions) , as well as the reduction in assumed daily peak truck deliveries discussed in Applicant's responses to the PSA.[4] . Total daily and annual emissions of all pollutants during construction are lower than those originally presented in the AFC. Further, these emissions are from offsite travel activities that will be highly dispersed and are not likely to affect the immediate project area.

[4] Preliminary Staff Assessment Comments, Set 2, July 23, 2012, p. 248. Available at http://www.energy.ca.gov/sitingcases/hiddenhills/documents/applicant/2012-07-23_Applicants_Comments_on_the_PSA_Set_2_TN-66319.pdf.

SECTION 3.0

Socioeconomics

This socioeconomics assessment of the potential construction impacts is based on Bechtel's updated assumptions. It provides an updated assessment of labor estimates (by craft), labor force availability, and IMPLAN modeling results based on the updated construction worker estimates. It also provides an updated operational workforce estimate and the IMPLAN modeling results based on the updated operation worker estimates. The other conditions provided in the AFC and subsequent data responses have not changed except as set forth herein.

3.1 Summary of Updated Assumptions/Findings

The following assumptions are specific to the socioeconomics analysis and are in addition to those listed in Section 1.0, Introduction.

- Construction workers from California spend approximately 14 percent of their disposable income on accommodation, food, and gas in Nye and Clark counties, Nevada. The remainder of their disposable income is spent within the counties of Inyo, Kern, Mono, San Bernardino, and Riverside, in California.
- Local nonpayroll expenditures during construction:
  - 70 percent of local construction expenditures are assumed to be spent within the counties of Inyo, Kern, Mono, San Bernardino and Riverside in California.
  - 30 percent of local construction expenditures are assumed to be spent within the counties of Clark and Nye in Nevada. Of this, 28 percent are assumed to be spent within Clark County and 2 percent within Nye County.
- Operational workers were revised from 120 to 100 and were assumed to be split as follows:
  - 5 percent from Inyo County, California
  - 20 percent from Nye County, Nevada
  - 75 percent from Clark County, Nevada.
- Operational worker payroll was updated from $15.65 million (in 2011 dollars) to $13.04 million per year. The average annual operational worker salary remains at $130,435 (including benefits).
- The local operational expenditures were not updated from what they were in the AFC ($540,000).

3.1.1 Updated Environmental Analysis

The following updated socioeconomic analysis includes an assessment of the updated construction workers, labor force availability, local construction expenditures, and the updated operational workforce estimates. It also includes an updated property tax analysis.

3.2 Construction Impacts

3.2.1 Construction Workforce

It is anticipated that most (70 percent) of the construction workforce will be drawn from the counties of Inyo, Kern, Mono, San Bernardino, and Riverside, in California. Of the remaining 30 percent that will be drawn from Nevada, 25 percent are anticipated to be from Clark County and 5 percent from Nye County. The primary trades in demand will include pipefitters, electricians, construction managers, ironworkers, laborers, pre-assembly, carpenters, and unskilled labor. Table 5.10-16R2 in Attachment SOCIO-1 provides estimates of construction personnel requirements for HHSEGS. Total personnel requirements during construction will be approximately 32,933 person-months; whereas, the total workforce onsite is

32,620 person-months. Construction personnel requirements for the site will peak at approximately 2,293 workers in Month 19 of the construction period.

Available skilled labor was evaluated by surveying the Building and Trades Council (Table 5.10-17R1) representing Kern, Inyo, Mono, Riverside, and San Bernardino counties because most of the construction labor from California was assumed to be from these five counties. Additional information on available skilled labor was also evaluated by contacting the California Employment Development Department (CEDD) (Table 5.10-18R1). The CEDD information on available skilled labor was for the Eastern Sierra Region (comprising Alpine[5], Inyo, and Mono counties), Bakersfield Metropolitan Statistical Area (MSA) (Kern County), and the Riverside-San Bernardino-Ontario MSA (Riverside and San Bernardino counties). Both sources show that the combined workforce will be adequate to fulfill California's portion (70 percent) of HHSEGS labor requirements for construction. Therefore, HHSEGS construction will not place an undue burden on the local workforce in these five counties. Available skilled labor in the Las Vegas-Paradise MSA was not reevaluated because the AFC showed that there will be adequate skilled workforce to meet HHSEGS's labor requirements for construction. It remains as shown in AFC Table 5.10-19.

TABLE 5.10-17R1
Labor Union Contacts

Labor Union	Contact
Kern, Inyo, Mono Counties Building Trades Council	John Spaulding (661) 323-7957
United Association of Local 525-Plumbers, Pipefitters and HVAC Refrigeration Technicians	Jeff Orr (702) 452-1520
San-Bernardino-Riverside Building Trades Council (BTC)	Bill Perez (951) 684-1040

TABLE 5.10-18R1
Available Labor by Skill in 5-County Region, 2008 to 2018

Occupational Title	Annual Averages		Absolute Change	Percentage Change	Average Annual Compounded Growth Rate (%)
	2008	2018			
Carpenters	20,430	21,100	670	3.3	0.3
Cement Masons and Concrete Finishers	4,250	4,400	150	3.5	0.3
Painters, Construction and Maintenance	5,910	5,980	70	1.2	0.1
Iron Workers	840	850	10	1.2	0.1
Electricians	7,370	7,280	-90	-1.2	-0.1
Industrial Truck and Tractor Operators	11,990	13,010	1,020	8.5	0.8
Operating Engineers and other Construction Equipment Operators	5,650	5,940	290	5.1	0.5
Helpers, Construction Trades	3,680	3,820	140	3.8	0.4
Construction Laborers	21,850	23,970	2,120	9.7	0.9
Plumbers, Pipefitters, and Steamfitters	5,190	5,260	70	1.3	0.1

[5] Although the CEDD data on occupational projections for the Eastern Sierra Region includes Alpine County, the county was excluded from the regional economic model and analysis in AFC Section 5.10.4.3.4 due to its low population (1,128 as of January 1, 2011) and civilian labor force (annual average of 500 in 2011).

TABLE 5.10-18R1
Available Labor by Skill in 5-County Region, 2008 to 2018

Occupational Title	Annual Averages		Absolute Change	Percentage Change	Average Annual Compounded Growth Rate (%)
	2008	2018			
Administrative Services Managers	2,010	2,260	250	12.4	1.2
Civil Engineers	3,100	3,450	350	11.3	1.1
Engineering Technicians	4,530	4,900	370	8.2	0.8
Plant and System Operators	3,550	4,020	470	13.2	1.3

*The 5 counties are: Inyo, Kern, Mono, Riverside, and San Bernardino. Although Alpine County is part of the Eastern Sierra Region and, as such, is included in the estimates for this region, it was left out of the regional economic analysis due its low population and civilian labor force.
Source: CEDD, 2012.

3.2.2 Population Impacts

Most workers are expected to commute to the HHSEGS site from communities in southern California, or Nye and Clark counties, Nevada. This analysis assumes that 70 percent of the construction workers will be from the counties of Inyo, Kern, Mono, Riverside, and San Bernardino in California, and most of them will commute to the project site from Nevada on a work-week basis. The remaining 30 percent will be from Nye and Clark counties, Nevada. Workers that commute on a work-week basis do not tend to bring their families. Therefore, project construction will not contribute to an increase in the population of the area.

3.2.3 Housing Impacts

Most of the construction workforce will have to commute daily because accommodations are limited near the project site. As shown in Table Socio-1, of the construction workers from California, approximately 5 percent of the total workforce is assumed to stay in Tecopa and Shoshone in Inyo County where there are a few hotel/motel rooms and RV spaces. About 15 percent of the total workforce is assumed to find accommodations (hotel/motel rooms or RV spaces) in Pahrump, Nevada, located approximately 18 miles from the project site. The remaining 50 percent of the total workforce coming from California are assumed to stay in the Las Vegas area, about 45 miles to the east of the project site. Las Vegas has over 148,935 hotel/motel rooms (LVCVA, 2011).

TABLE SOCIO-1
Assumed Locations of Worker Origin and Place of Temporary Lodging

Workforce Place of Origin (Permanent Residence)	Lodging During Construction	Percent of Total Workforce
Southern California	Tecopa & Shoshone, California	5%
Southern California	Pahrump, Nevada	15%
Southern California	South Las Vegas, Nevada	50%
Pahrump, Nevada	Pahrump, Nevada	5%
Las Vegas, Nevada	Las Vegas, Nevada	25%

3.2.4 Impacts to the Local Economy and Employment

The total cost of HHSEGS is estimated at $2.176 billion (in 2011 dollars). The estimated direct material cost is $1.85 billion. The estimated value of materials and supplies that will be purchased locally during construction is $71.4 million. Of this amount, about $50 million (70 percent) would be spent in Inyo,

Kern, Mono, Riverside, and San Bernardino counties combined (i.e., 5-county region), about $20 million (28 percent) would be spent in Clark County, while the remaining $1.4 million (2 percent) would be spent within Nye County.

HHSEGS will provide about $305.3 million (in 2011 dollars) in construction payroll, at an average salary of $50 per hour (including benefits). The anticipated payroll for employees, as well as the purchase of materials and supplies during the construction period, will have a temporary beneficial impact on the economies of the 5-county region of California as well as in Clark and Nye counties, Nevada. Assuming that 70 percent of the construction workforce will reside in the 5-county region, it is expected that approximately $185.3 million in payroll will stay in California. Assuming, that 30 percent of the construction workforce will reside in either Clark or Nye County, it is expected that the remaining $111.1 million in estimated construction payroll, which includes the amount spent on accommodation, food, and gas during the week by California construction workers, will remain in these two Nevada counties. These additional funds will cause a temporary beneficial impact by creating the potential for other employment opportunities (indirect and induced employment) for local workers in other service areas, such as transportation and retail.

3.2.4.1 Indirect and Induced Economic Impacts from Construction

Construction activity associated with HHSEGS would result in secondary economic impacts (indirect and induced impacts) within the 5-county region of California. Secondary employment effects would include indirect and induced employment due to the purchase of goods and services by firms involved with construction, and induced employment due to construction workers spending their income within the county where they permanently reside. In addition to these secondary employment impacts, indirect and induced income effects will arise from construction.

Indirect and induced impacts were estimated using an IMPLAN Input-Output model of the 5-county region of California. IMPLAN is an economic modeling software program. The estimated HHSEGS indirect and induced employment within the 5-county region would be 89 and 409 jobs, respectively. These additional jobs result from the $20.7[6] million in annual local construction expenditures as well as the approximately $53.7 million in annual spending by local construction workers. The $53.7 million represents the disposable portion of the annual construction payroll (assumed to be 70 percent of $76.7 million). Assuming an average direct construction employment of 769, the employment multiplier associated with the construction of HHSEGS is approximately 1.6 [i.e., (769 + 89 + 409)/769]. This project construction employment multiplier is based on a Type SAM model.

Indirect and induced income impacts within the 5-county region were estimated at $3,594,400 and $15,189,370, respectively. Assuming a total annual local construction expenditure (payroll, materials and supplies) of $74.4 million ($53.7 million in payroll + $20.7 million in materials and supplies), the project construction income multiplier based on a Type SAM model is approximately 1.3 (i.e., [$74,363,540 + $3,594,400 + $15,189,370]/$74,363,540).

Indirect and induced impacts were also estimated using an IMPLAN Input-Output model of a region composed of the combined Nevada counties of Clark and Nye (i.e., 2-county region). The estimated HHSEGS indirect and induced employment within the 2-county region would be 41 and 257 jobs, respectively. These additional jobs result from the approximately $8.9[7] million in annual local construction expenditures as well as approximately $34.8 million in spending by local construction

[6] The $20.7 million is the annual portion of the total local construction expenditures ($50 million) that is assumed to be spent within the 5-county region. Annual portion of total expenditures = $71.4 million / 29 months * 12 months = $29.6 million. Because 70 percent of the construction expenditures are assumed to be from the 5-county region, the annual construction expenditures within this region = $29.6 x 0.7 = $20.7 million.

[7] The $8.9 million is the annual portion of the total local construction expenditures ($21.4 million) that is assumed to be spent in the 2-county region. Annual portion of total expenditures = $71.4 million / 29 months * 12 months = $29.6 million. Because 30 percent of the construction expenditures are assumed to be from the 2-county region, the annual construction expenditures within the 2-county region = $29.6 million x 0.3 = $8.9 million.

workers. The $34.8 million represents the disposable portion of the annual construction payroll (assumed to be 70 percent of $49.7 million). Assuming an average direct construction employment of 329 workers, the employment multiplier associated with the construction phase of the project is approximately 1.9 (i.e., (329 + 41 + 257)/329). This project construction phase employment multiplier is based on a Type SAM model.

Indirect and induced income impacts within the 2-county region were estimated at $1,687,620 and $11,131,100 respectively. Assuming a total annual local construction expenditure (payroll, materials and supplies) of approximately $43.6 million ($34.8 million in payroll + $8.9 million in materials and supplies), the project construction phase income multiplier based on a Type SAM model is approximately 1.3 (i.e., [$43,632,400 + $1,687,620 + $11,131,100]/$43,632,400).

3.2.5 Fiscal Impacts

HHSEGS's capital cost is estimated to be $2.176 billion (in 2011 dollars); of this, equipment, materials and supplies are estimated at approximately $1.05 billion. The estimated value of materials and supplies that will be purchased locally during construction of HHSEGS is $71.4 million. Of this amount, about $50 million (70 percent) would be spent in Inyo County, while the remaining $21.4 million (30 percent) would be spent in the Nevada 2-county region.

The effect on fiscal resources during construction will be from sales taxes realized on equipment, materials and supplies purchased locally within the county. The sales and use tax rate is 7.75 percent in Inyo County (as of October 1, 2012). Of this, 6.25 percent goes to the state; one percent goes to the place of sale; and 0.5 percent goes to the special districts (BOE, 2012). Based on the $50 million in local purchases, the estimated sales tax revenues during the 29-month construction period would be $3.85 million. Of this amount, $0.75 million goes to Inyo County while the remaining $3.125 million goes to the State of California.

While Inyo County and the State of California would benefit from the sales and use tax assessed on locally purchased materials and supplies, they would also benefit from sales and use tax assessed on materials and supplies delivered to the project from other locations. The total value of materials and supplies, either purchased locally or delivered to the project from other locations and thus subject to use tax, is estimated at $1.05 billion. The total sales and use tax on the $1.05 billion is estimated at $81.375 million. Of this amount, $34.755 million is expected to be allocated to Inyo County while the remaining $46.62 million is expected to go to the state. The $34.755 million includes the $0.75 million in estimated sales and uses taxes on the $50 million on local purchases in Inyo County.

The sales tax rates in Clark and Nye counties are 8.1 percent and 7.1 percent, respectively (NDT, 2011). The total sales tax expected to be generated within the 2-county region during the approximately 29-month construction period is $1.62 million in Clark County and $0.1 million in Nye County, for a total of $1.72 million. These estimates are based on the $21.4 million assumed to be spent within the two counties in Nevada.

3.2.6 Summary of Economic Impacts from Construction

Table 5.10-20-R1 provides a summary of the inputs to the IMPLAN model and other key factors used to assess potential construction impacts. The table also provides a summary of the economic impacts from construction within the 5-county and the 2-county regions.

TABLE 5.10-20R1
Summary of Total Economic Impacts from Construction

	5-County[a] Region, California	2-County[b] Region, Nevada	Total
Capital Cost (million $)	$2,176	$0.0	$2,176
Local Materials & Supply Purchases (million $)	$50.0	$21.4	$71.4
Total Construction Payroll (million $)	$185.3	$120.0	$305.3
Construction Payroll (Disposable) (million $)	$129.7	$84.0	$213.7
Annual Local Construction Expenditures (million $)	$20.7	$8.9	$29.6
Annual Average Local Construction Payroll (million $)	$76.7	$49.7	$126.3
Annual Average Local Construction Payroll (Disposable) (million $)	$53.7	$34.8	$88.4
Average Monthly Direct Construction Employment	769	329	1,098
Indirect Employment	89	41	130
Induced Employment	409	257	666
Construction Employment Multiplier	1.6	1.9	NA
Indirect Income	$3,594,400	$1,687,620	$5,282,020
Induced Income	$15,189,370	$11,131,100	$26,320,470
Construction Income Multiplier	1.3	1.3	NA
Total Sales Taxes	$3,850,110	$1,721,480	$5,571,590

[a] The 5-county region is: Inyo, Mono, Kern, Riverside, and San Bernardino counties
[b] The 2-county region is: Clark and Nye counties

3.2.7 Impacts on Education, Public Services and Facilities, and Utilities

Impacts on education, public services and facilities, and utilities remain unchanged as described in the AFC and are less than significant for both the construction and operation phases of HHSEGS.

3.3 Operational Impacts

There is an expected 3-month phasing between the start of construction of Solar Plant 1 and Solar Plant 2. Solar Plant 1 is expected to begin operation 3 months before Solar Plant 2; although, the construction sequence could be reversed.

3.3.1 Operational Workforce

Table 5.10-21R1 shows the anticipated job classifications for the operations workforce for each Solar Plant. It is expected to employ up to 100 full-time employees. Table 5.10-21R1 provides a breakdown by shift and work area.

TABLE 5.10-21R1
Operational Workforce

Staff	Solar Plant 1	Solar Plant 2	Common Area	Total
Solar fields and Power Block Workers	12	12	—	24
Technicians	8	8	—	16
Operators (Administration Building: shower and sewage calculations)	—	—	15	15
Warehouse & Maintenance Personnel	—	—	13	13
Admin Personal – day shift only	—	—	12	12
TOTAL (actual)	**20**	**20**	**40**	**80**
Misc. Support	10	10	—	20
TOTAL (max)	**30**	**30**	**40**	**100**

Operation workers will be drawn from the local workforce and from existing Applicant staff. Consequently, only a slight increase in population is anticipated as a result of this project. There will be no significant impact on local employment.

3.3.2 Population Impacts

Some of the operational workforce may be drawn from the local population (Pahrump). However, it is anticipated that most of the operational workforce will be drawn from Las Vegas in Clark County as well as parts of surrounding rural areas in Inyo County. In the unlikely event that all 100 of the operations and maintenance (O&M) workers reside in Inyo County, the expected increase in population would be less than one percent (0.3 percent). Similarly, if all 100 workers reside in Pahrump, the anticipated increase in that city's population would also be negligible (0.5 percent). As such, the project is not likely to result in population impacts.

3.3.3 Housing Impacts

Due to the few operations staff, there will be no significant impacts to housing. This analysis remains unchanged from the AFC.

3.3.4 Impacts to the Local Economy and Employment

Operation of HHSEGS will generate a permanent beneficial impact by creating employment opportunities for local workers through local expenditures for materials, such as office supplies and services. HHSEGS will provide about $13.04 million (in 2011 dollars) in operational payroll, at an average salary of $130,435 per year (including benefits) for the assumed 100 full-time employees. There will be an annual O&M budget of approximately $0.54 million (in 2011 dollars), 5 percent of which is assumed to be spent within Inyo County while the remaining 95 percent is assumed to be spent within the 2-county region. These additional jobs and spending will generate other employment opportunities and spending in Inyo County and the 2-county region.

3.3.4.1 Indirect and Induced Economic Impacts from Operation

Operation of HHSEGS would result in indirect and induced economic impacts that would occur within the counties depending on the point of sale. These indirect and induced impacts represent permanent increases in each county's economic variables. The indirect and induced impacts would result from annual expenditures for payroll as well as those on O&M and were estimated using separate IMPLAN Input-Output models of Inyo County and the 2-county region.

The estimated HHSEGS indirect and induced employment within Inyo County would be none and three permanent jobs, respectively. The additional jobs result from the $456,520 in disposable payroll and the $27,000 in local O&M expenditures. The operational phase employment multiplier is estimated at 1.4 (i.e., [5 + 0+ 2]/5) and is based on a Type SAM multiplier.

Indirect and induced income impacts within Inyo County are estimated at $0 and $60,150, respectively. The income multiplier associated with the operational phase of the project is approximately 1.1 (i.e., [$483,520[8] + $0 + $60,150]/$483,520) and is based on a Type SAM model.

The HHSEGS estimated indirect and induced impacts within the 2-county region in Nevada would be 2 and 62 permanent jobs, respectively. These additional 64 jobs result from the $9,186,930 ($8,673,930 in disposable payroll and $513,000 in O&M) in annual operational budget. The operational phase employment multiplier is estimated at 1.7 (i.e., [95 + 2 + 62]/95) and is based on a Type SAM multiplier.

Indirect and induced income impacts within the 2-county region are estimated at $97,630 and $2,697,310, respectively. The income multiplier associated with the operational phase of the project is approximately 1.3 (i.e., [$9,186,930 + $97,630 + $2,697,310]/$9,186,930) and is based on a Type SAM model.

[8] The disposable portion of the payroll (70% of $652,180) + $27,000 in local O&M expenditures.

3.3.5 Fiscal Impacts

3.3.5.1 Property Taxes

HHSEGS is expected to bring both sales tax and property tax revenue to Inyo County. Because the HHSEGS is a renewable energy power-generating facility, the county has jurisdiction over the valuation (Beck, 2011). Existing law provides that HHSEGS qualifies for the exclusion of certain parts from valuation per the Revenue and Taxation Code, Section 73 (Lyle, 2011). Because there is no development in the project area currently, the property tax revenues are not distributed to individual assessment districts but instead go to the county. Based on current data, property tax revenue from HHSEGS is estimated to be approximately $3.52 million. Approximately 45 percent of the project will be taxable non-solar property. That 45 percent is composed of 38 percent that will be dual-use solar/thermal facilities (taxable at 25 percent of full value), while the remaining 7 percent will be a mix of possessory interest in the land, fossil property, and real property improvements (fully taxable). The estimate is based on a capital value of $2.176 billion and the applicable property tax rate for the project site of one percent (Ontano, 2011). This additional property tax revenue would constitute an almost 21 percent increase in the total county taxes over fiscal year 2010 amounts (see AFC Table 5.10-11). As such, the additional property tax revenues generated by the HHSEGS would ***significantly benefit*** Inyo County.

Because the non-payroll O&M expenditures assumed to be spent within Inyo County are $27,000, the benefits to the county from sales tax revenues during operation are small.

3.3.6 Summary of Economic Impacts from Operation

Table 5.10-23R1 provides a summary of the operation inputs to the IMPLAN model and other key factors used to assess potential operation impacts.

TABLE 5.10-23R1
Summary of Total Economic Impacts from Operations & Maintenance

	Inyo County	2-County Region	Total
Annual Local O&M Purchases ($)	$27,000	$513,000	$540,000
Total Annual O&M Payroll ($)	$652,180	$12,391,330	$13,043,500
Employment	5	95	100

Table 5.10-24R1 summarizes the economic impacts from operation by phase within Inyo County and the 2-county region.

TABLE 5.10-24R1
Summary of Economic Impacts from Operation

	Inyo County	2-County Region	Total
Indirect Employment	0	2	2
Induced Employment	2	62	64
Annual O&M Employment	5	95	100
O&M Employment Multiplier	1.4	1.7	NA
Indirect Income	—	$97,630	$97,630
Induced Income	$60,150	$2,697,310	$2,757,460
Operation Phase Income Multiplier	1.1	1.3	NA
Total Annual Sales Taxes	$2,090	$41,010	$43,100

3.3.6.1 Impacts on Education

The schools in the Death Valley Unified School District are not currently at capacity (Cook, 2011). Although HHSEGS is not expected to result in increased school enrollment that would be higher than the typical enrollment fluctuation observed in any given school year, any development (industrial or residential) within the Death Valley Unified School District boundaries is currently charged a one-time assessment fee of $0.47 per square foot of principal building area (Cook, 2011). Based on 23,673 square feet of administration/ storage (occupied structures), HHSEGS would pay $11,126.31 in school impact fees as full mitigation for potential school impacts. Assuming that 95 percent of the 100 operational employees end up residing within Clark and Nye counties, Nevada, the HHSEGS operation is not expected to create any significant adverse impacts to the local school system.

3.3.6.2 Impacts on Public Services and Facilities, and Utilities

Impacts on public services and facilities, and impacts on utilities from operations remain unchanged from the AFC.

3.4 References

Beck, K. 2011. Personal communication between Fatuma Yusuf of CH2M HILL and Kurt Beck, Senior Specialist Property Auditor-Appraiser, California Board of Equalization. July 15.

Board of Equalization (BOE). 2012. California City and County Sales and Use Tax Rates *Publication 71*. Internet site: http://www.boe.ca.gov/pdf/pub71.pdf

California Employment Development Department (CEDD). 2012. Projections of Employment by Industry and Occupation. Accessed on 8/22/2012. Internet site: http://www.labormarketinfo.edd.ca.gov/?pageid=145

Cook, J. 2011. Personal communication between Ashraf Shaqadan of CH2MHILL and Jennifer Cook, Business Assistant, Business Office, Death Valley Unified School District. March 28.

Las Vegas Convention and Visitors Authority (LVCVA). 2011. Las Vegas Meetings and Travel Professionals, Hotel/Casino Development Construction Bulletin. Accessed 07/07/2011. Internet Site: http://www.lvcva.com/press/statistics-facts/index.jsp

Lyle, P. 2011. Personal communication between Fatuma Yusuf of CH2M HILL and Phil Lyle, Assistant Assessor, Inyo County Assessor. July 15.

Nevada Department of Taxation (NDT). 2011. Publications, Tax Payer Information Packet. Accessed 7/7/2011. Internet site: http://tax.state.nv.us/pubs.htm#tpi

Ontano, J. 2011. Personal communication between Ashraf Shaqadan of CH2M HILL and Jan Ontano, Assessor Clerk, Inyo County. July 8.

SECTION 4.0

Traffic & Transportation

The following updated traffic analysis includes an assessment of the existing traffic conditions within the project area, the project trip generation based on updated workforce and delivery truck estimates, the project trip distribution based on the California/Nevada workforce split, an evaluation of the potential project impacts to the study intersections (including evaluating two additional intersections), and recommendations to mitigate the impacts be less than significant.

As a result of the updated workforce traffic, additional potential traffic impacts have been identified for the SR 160/Tecopa Road intersection during the morning peak hour (impacts were previously identified for the afternoon peak hour only). Also, potential impacts have been identified for the SR 127/Baker Boulevard intersection in San Bernardino County during the Monday morning peak hour and the Friday afternoon peak hour. With the implementation of appropriate Traffic Management Plan (TMP) measures, the potential project impacts will be less-than-significant.

It is important to note that this updated analysis focuses only on potential construction-related traffic impacts. The operations workforce impacts discussed in the AFC and Data Responses will not change for the operations phase of the project because the operations workforce will be slightly reduced. Therefore, no update to the operations analyses is required. The potential operations-related traffic impacts remain less than significant.

4.1 Laws, Ordinances, Regulations, and Standards / Traffic Impact Thresholds

As a result of the updated project trip distribution pattern (70 percent of the workforce is estimated to be from California), the project will add a number of trips to the SR 127/Baker Boulevard intersection, located in the town of Baker in the Desert Region of San Bernardino County, during the Monday morning and Friday afternoon peak hours. The Circulation Element of the San Bernardino County General Plan (San Bernardino County, 2007) sets forth goals and policies that address regional traffic on freeways and major arterials. Specifically for the Desert region, one of the policies is that “mitigation may be required if the unsignalized intersection level of service…decreases one level of service (LOS) to LOS B on the major, nonstopped street. Mitigation may also be required if the level of service on the minor, stopped street decreases two levels of service or drops below LOS C…”.

4.2 Existing Traffic Conditions

The AFC analyzed the SR 160/Tecopa Road intersection because the majority of project traffic is anticipated to travel through this intersection during a typical weekday. The existing AM and PM peak hour LOS for the SR 160/Tecopa Road intersection is presented in the first part of Table 5.12-3R1.

TABLE 5.12-3R1
Existing Intersection LOS

		Existing Conditions			
		AM Peak Hour		PM Peak Hour	
Intersection	Approach/ Movement	Delay*	LOS	Delay*	LOS
SR 160/Tecopa Road	Northbound left/right	9.3	A	9.7	A
	Westbound left	8.1	A	7.9	A
SR 127/Tecopa Road*	Southbound left	7.4	A	7.4	A
	Westbound left	9.4	A	9.4	A
	Westbound right	8.8	A	8.8	A

*Seconds of delay

The SR 127 intersections in Baker were also analyzed because it is assumed that on Monday morning 20 percent of the California workforce will travel through Baker on their way to the site from I-15. On Friday afternoon, 50 percent of the California workforce will travel through Baker on their way home via I-15 south. Peak hour volumes for selected segments of SR 127 were obtained from the Caltrans SR 127 Transportation Concept Report (Caltrans, 2011), with a directional split of 60 percent northbound and 40 percent southbound. Then, two intersections were considered: SR 127/Tecopa Road and SR 127/Baker Boulevard.

Turning volumes on Tecopa Road were assumed to be 2 percent of the peak hour volumes on SR 127. Based on the estimated peak hour turning volumes, the intersection LOS was calculated for the SR 127/Tecopa Road intersection and is presented in the bottom half of Table 5.12-3R1.

For the SR 127/Baker Boulevard intersection, the peak hour roadway volumes approaching the intersection were reviewed. LOS calculations were not conducted because specific turning movement counts are not available. Based on a review of the existing peak hour roadway volumes on SR 127 and Baker Boulevard (San Bernardino County, 2012; and Caltrans, 2012), it is likely that this intersection is operating at or near capacity during peak hours, during certain times of the year. The town of Baker is frequently used as a rest stop by drivers on I-15, travelling between Las Vegas and Southern California. The SR 127/Baker Boulevard intersection is one of the main intersections into town.

4.3 Project Construction Trip Generation

The amount of traffic generated by the HHSEGS was valuated based on the updated construction worker figures, employee shifts, and daily truck activity at the site. The vehicular trips associated with the project were separated into construction worker trips (generally auto trips) and delivery trips (truck trips).

4.3.1 Auto Trips

Auto trips refer to all passenger vehicle trips that would be generated by the project. These trips would mainly represent employee trips to and from the site throughout their work shifts.

As shown in Table 5.10-16R2 (see Attachment SOCIO-1), the number of construction workers will fluctuate throughout the 29-month construction period, with the peak construction effort onsite occurring during Month 19, when 2,293 workers are projected (1,682 day shift and 611 swing shift). By Month 17, 1,879 workers are projected (82 percent of the peak). Overall, there is a 5-month period (Months 17 through 21) when the number of workers is within approximately 20 percent of the peak.

The weekly project construction schedule is anticipated to be 10-hour days, Monday through Friday, and will include a day shift (5:00 AM to 3:30 PM[9]) and a swing shift (6:00 PM to 4:30 AM). The employee breakdown by shift and labor type, for Month 19, is presented in Table 5.12-5R1.

TABLE 5.12-5R1
Peak Construction Workforce (Month 19)

	Morning Shift (5:00 AM to 3:30 PM)	Swing Shift (6:00 PM to 4:30 AM)	Total
Project Site Workforce			
Craft	1,192	511	1,703
Non-craft	490	100	590
Total Workforce	**1,682**	**611**	**2,293**

Based on discussions with the BTC and the anticipated contractor's union representatives, it estimated that approximately 70 percent of the workforce will be from California and 30 percent of the workforce

[9] Times will be adjusted based on season and temperature.

will be from Nevada. Given the remote location of the project site, the significant number of workers commuting from California, the high cost of gas, and the type of construction being conducted, the following assumptions for dayshift workers were used:

- The Nevada workforce will carpool at a rate of 1.2 people per car, Monday through Friday.
- The California workforce (dayshift) will carpool from their hotels Tuesday through Thursday, when travelling between their place of lodging and the site at a rate of 1.5 people per car.
- 50 percent of the California workforce will return home on Friday afternoon, directly from the site, because it is the end of their 5-day work week.
- 40 percent of the California workforce will return home on Saturday afternoon after they complete an additional Saturday shift.
- 10 percent of the California workforce will remain over the weekend and will commute between the work site and their hotel.
- 70 percent of the California workforce will arrive at their hotel on Sunday evening and 20 percent will commute from home directly to the site on Monday morning.
- 100 percent of the California workforce (that returns home) will drive their own vehicles between home (in California) and their hotel at the start of their work week.

Based on these assumptions, HHSEGS would generate up to 3,820 daily auto trips, with up to 1,401 trips occurring during the morning peak hour and up to 1,401 trips occurring during the afternoon peak hour. The workforce trips per day, per shift, for Month 19 are summarized in Table TT-1.

TABLE TT-1
Peak Construction Workforce Trips (Month 19)

	Dayshift		Swing Shift		Combined
	One-way trips	Daily Trips	One-way trips	Daily Trips	Daily Trips
Monday	1,284	2,568	573	1,146	3,714
Tuesday-Thursday	1,206	2,412	509	1,018	3,430
Friday	1,401	2,802	509	1,018	3,820

The potential peak hour traffic impacts have been analyzed for the day shift (5:00 AM to 3:30 PM) during the peak construction month as a conservative assumption because traffic will peak during this period. Although the employee trips would occur outside of typical peak hours (generally 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM), this shift represents the greatest number of employees arriving and departing the site at one time (1,682 employees). The peak construction workforce trips for the dayshift are presented in Table TT-2.

TABLE TT-2
Peak Construction Workforce Trips (Month 19, Day Shift)

	California	Nevada	Total
Workforce/Carpool Rate			
California/Nevada Workforce Split	70%	30%	100%
Dayshift Construction Workforce	1,177	505	1,682
Baseline Carpool Rate (people per car)	1.5	1.2	

TABLE TT-2
Peak Construction Workforce Trips (Month 19, Day Shift)

	California	Nevada	Total
Monday Commute			
Carpools	628[b]	421[a]	1,049
Single occupant vehicles	235[b]		235
Total Vehicles	863	421	1,284
Trips In/Out[e]	**1,726**	**842**	**2,568**
Weekday Commute (Tues-Thurs)			
Carpools	785[c]	421[1]	1206
Trips In/Out[e]	**1,570**	**842**	**2,412**
Friday Commute			
Carpools	392[d]	421[1]	813
Single occupant vehicles	588[d]		588
Total Vehicles	980	421	1,401
Trips In/Out[e]	**1,960**	**842**	**2,802**

[a]The Nevada workforce will carpool at a rate of 1.2 people per car, Monday through Friday.

[b]On Monday, 80 percent of the California workforce will carpool at a rate of 1.5 people per car and 20 percent will drive alone. Not all of the 80 percent will be "carpools," but the overall average will be 1.5 people per car for this group, so the line is described as "Carpools."

[c]The California workforce will carpool at a rate of 1.5 people per car, Tuesday through Thursday.

[d]On Friday, 50 percent of the California workforce will carpool at a rate of 1.5 people per car and 50 percent will drive alone.

[e]Assumes one incoming trip per vehicle during AM peak and one outgoing trip per vehicle during PM peak.

4.3.2 Truck Trips

The expected truck traffic generated by the project will mainly be composed of heavy equipment and material deliveries, ranging from overnight express mail to containers of heliostat components. The deliveries are expected to peak at 717 trucks during Month 6. With the conservative assumption of 16 days per month of deliveries, there will be a maximum average of 45 daily truck deliveries, or 90 one-way trips per day. It was also assumed that the maximum number of truck deliveries in a single day would be 90[10] (or 180 one-way trips). As a conservative analysis, the peak truck trips (180 trips) were added to the peak workforce trips even though the workforce and truck trips will peak during different months.

It was assumed that the truck trips will be spread evenly throughout the day (10 trucks per hour), beginning at 6:00 AM and ending at 6:00 PM. Also, it was assumed that all inbound deliveries would occur in the first 9 hours, and all exiting delivery truck trips would occur in the last 9 hours (i.e., it takes an average of 3 hours to unload a truck). The resulting estimate was 10 full trucks would arrive during the morning peak hour and 10 empty trucks would depart during the afternoon peak hour.

[10] See page 248 of the Applicant's PSA comments, Set 2

4.3.3 Combined Trips (Autos + Truck Trips)

Overall, HHSEGS is estimated to generate a maximum total of 4,000 daily trips, with up to 1,411 trips occurring during the morning peak hour and 1,411 trips occurring during the afternoon peak hour. The total project trip generation during the peak construction month is summarized in Table 5.12-4R1.

TABLE 5.12-4R1
Peak Construction Trip Generation (Month 19)

	Daily Trips[a]			Peak Hour Trips		
	Monday	**Tuesday-Thursday**	**Friday**	**Monday**	**Tuesday-Thursday**	**Friday**
Autos	3,714	3,430	3,820	1,284	1,206	1,401
Trucks[b]	180	180	180	10	10	10
Total	3,894	3,610	4,000	1,294	1,216	1,411

[a]Daily trips include combined trips generated by dayshift and swing shift.

[b]Assumes truck trips are spread equally throughout the day (from 6:00 AM to 6:00 PM)

4.4 Project Construction Trip Distribution

Based on the regional street network, current travel patterns, lodging locations, and anticipated employee origins and destinations, it is anticipated that HHSEGS construction traffic (for the dayshift) would be distributed as shown in Tables 5.12-7AR1 and 7BR1. The tables combine both the California and Nevada workforce and also reflect the carpool rates and commute pattern assumptions discussed in Section 1.0. As shown below, separate distribution analyses were conducted for the Monday commute, weekday commute (Tuesday through Thursday) and for the Friday commute.

TABLE 5.12-7AR1
AM Peak Hour Project Trip Distribution (Month 19, Day Shift)

			Monday		Weekday		Friday	
Road	**Direction**	**Origin/Destination**	**Trips**	**Percent**	**Trips**	**Percent**	**Trips**	**Percent**
SR 160	Northwest	Pahrump	210	17%	241	20%	280	20%
Tecopa Road	South	Tecopa, Shoshone, I-15	286	22%	63	5%	79	6%
SR 160	East	Las Vegas	788	61%	902	75%	1,042	74%
Total			**1,284**	**100%**	**1,206**	**100%**	**1,401**	**100%**

TABLE 5.12-7BR1
PM Peak Hour Project Trip Distribution (Month 19, Day Shift)

			Monday		Weekday		Friday	
Road	**Direction**	**Origin/Destination**	**Trips**	**Percent**	**Trips**	**Percent**	**Trips**	**Percent**
SR 160	Northwest	Pahrump	257	20%	241	20%	163	12%
Tecopa Road	South	Tecopa, Shoshone, I-15	69	5%	63	5%	619	44%
SR 160	East	Las Vegas	958	75%	902	75%	619	44%
Total			**1,284**	**100%**	**1,206**	**100%**	**1,401**	**100%**

The trip distribution percentages for the project traffic for each scenario are illustrated in Figures 5.12-4AR1 and 5.12-4BR1 (all traffic figures are at the end of this document).

4.5 Existing Plus Construction Traffic Impacts

Based on the updated project traffic distribution, the project traffic was added to the existing peak hour traffic volumes and the intersection LOS analyses were updated. The existing plus construction-related traffic volumes are illustrated in Figures 5.12-5R1 and 5.12-6R1 and the results of these calculations are summarized in Tables 5.12-8AR1 and 8BR1.

As shown in those tables, the SR 160/Tecopa Road would operate at LOS F during the PM peak hour on Monday and at LOS F during both peak hours, on Tuesday through Friday, under existing plus project conditions. Up to 95 percent of the project construction traffic is estimated to travel through the SR 160/Tecopa Road intersection during peak hours. During the AM peak period, the LOS changes primarily on the westbound left-turn from SR 160 to Tecopa Road. During the PM peak period, the operational issues are for the northbound movements (both left- and right-turns).

TABLE 5.12-8AR1
AM Peak Hour LOS (Day Shift)

				Existing + Project AM Peak					
		Existing AM Peak		Monday		Tuesday-Thursday		Friday	
Intersection	**Approach/ Movement**	**Delay***	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
SR 160/Tecopa Road	Northbound left/right	9.3	A	9.9	A	10.0	A	**100+**	**F**
	Westbound left	8.1	A	24.3	C	**60.6**	**F**	**100+**	**F**
SR 127/Tecopa Road	Southbound left	7.4	A	7.9	A				
	Westbound left	9.4	A	9.4	A	N/A*		N/A*	
	Westbound right	8.8	A	10.1	B				

*Not applicable. The intersection was not analyzed for weekday/Friday morning peak hour because there will not be any project trips added to the intersection during this period.

TABLE 5.12-8BR1
PM Peak Hour LOS (Day Shift)

				Existing + Project PM Peak					
		Existing PM Peak		Monday		Tuesday-Thursday		Friday	
Intersection	**Approach/ Movement**	**Delay***	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
SR 160/Tecopa Road	Northbound left/right	9.7	A	**100+**	**F**	**100+**	**F**	**100+**	**F**
	Westbound left	7.9	A	7.9	A	7.9	A	7.9	A
	Southbound left	7.4	A					7.4	A
	Westbound left	9.4	A	N/A*		N/A*		19.9	C
SR 127/Tecopa Road	Westbound right	8.8	A					8.8	A

*Not applicable. The intersection was not analyzed for Monday/weekday afternoon peak hour because there will not be any project trips added to the intersection during this period.

The SR 127/Tecopa Road intersection would operate at LOS C or better during both peak hours, Monday through Friday, under existing plus project conditions. There would be no significant impact at this intersection.

Based on a review of the peak hour roadway volumes on SR 127 and Baker Boulevard, the SR 127/Baker Boulevard intersection is estimated to be operating at or near capacity during peak hours, at certain times of the year. The project is projected to add 235 northbound through volumes to the intersection on Monday morning and 588 southbound through volumes to the intersection on Friday afternoon. It is likely that the project-related trips that will be added to this intersection would further degrade the intersection operations. This is a temporary, short-term increase in traffic that would occur for approximately one to two hours once a week during the peak construction period.

4.5.1.1 Summary of Construction Phase Impacts

A summary of the construction-phase impacts by significance criteria (consistent with the requirements of the AFC) is provided below. Only the first two criteria are discussed in detail below because criteria 3 through 7 remain unchanged.

1. **Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.**

Short-term Impact. Construction of the project is anticipated to occur over a 29-month period, with a peak construction onsite workforce of 2,293 employees during Month 19. HHSEGS would result in temporary, short-term increases in local traffic as a result of construction-related workforce traffic (employee travel to and from the site), heavy equipment delivery (e.g., cranes and bulldozers), and material deliveries (e.g., solar components, gravel, and concrete). During the peak construction month, the project is projected to add up to 4,000 daily trips (3,820 autos and 180 delivery trucks), with up to 1,411 vehicle trips occurring during the morning peak hour and 1,411 vehicle trips occurring during the afternoon peak hour (Table 5.12-4R1).

2. **Exceed, either individually or cumulatively, a LOS standard established by Inyo, San Bernardino, Clark, or Nye counties.**

Short-term Impact. As noted above, HHSEGS construction would result in temporary, short-term increases in local traffic. With the construction-added traffic, some movements at the SR 160/Tecopa Road intersection will operate at LOS F during both peak hours, which exceeds Clark County's LOS D threshold. In addition, the project would add 235 AM peak-hour trips through the SR 127/Baker Boulevard intersection on Monday morning and 588 PM peak-hour trips through this intersection on Friday afternoon, potentially resulting in a significant impact. However, implementation of the appropriate proposed mitigation measures described below in Section 4.6 would reduce these impacts to less than significant. The intersection operations would return to pre-project conditions once project construction is complete.

3. **Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.**

   No change from prior analyses; less than significant.

4. **Substantially increase hazards due to a design feature or incompatible uses.**

   No change from prior analyses; less than significant.

5. **Result in inadequate emergency access.**

   No change from prior analyses; less than significant.

6. **Result in inadequate parking capacity.**

   No change from prior analyses; less than significant.

7. Conflict with adopted policies, plans, or programs supporting alternative transportation.

No change from prior analyses; less than significant.

4.6 Mitigation Measures

The updated mitigation strategy is generally the same as described in the AFC. However, because the increase in workforce traffic will result in additional impacts to the SR 160/Tecopa Road intersection during the morning peak hour (impacts were previously identified for the afternoon peak hour only), and a newly identified impact to the SR 127/Baker Boulevard intersection during the Monday morning peak hour and Friday afternoon peak hour, additional mitigation is proposed beyond what was described in the AFC. Some or all of these potential measures may be implemented based on the specific circumstances at the time.

- **Traffic Monitoring Program**. Traffic operations at the study intersections (SR 160/Tecopa Road, SR 127/Tecopa Road, and SR 127/Baker Boulevard) will be visually monitored by the Applicant's representative once per week, during the morning and afternoon peak hour during peak construction months. It is recommended that the monitoring begin in Month 12 when 1,176 workers are projected (approximately 51 percent of the peak) and continue through the end of Month 24 when 1,293 workers are projected (approximately 56 percent of the peak). Because the construction workforce will increase gradually over the 29-month construction period, with a peak workforce occurring during Month 19, traffic conditions will be observed as the workforce increases over time, and adjustments will be made as needed.

- **Carpooling.** If the traffic monitoring program identifies LOS E or F conditions (extended queues during the peak periods), specific measures will be implemented to reduce the number of trips to the site. This analysis already includes an assumption that 15-passenger vans will be used to achieve a baseline carpool rate of 1.5 for the California workforce. However, given the high cost of gas and the remote location of the site, there are opportunities to increase the occupancy (number of people per vehicle). Improvements should target a carpool rate of 2.5 people per car to maintain LOS D at the SR 160/Tecopa Road intersection (consistent with the applicable County thresholds). Two specific steps are included in this mitigation measure:

  - **Rideshare Program.** As part of the rideshare program, employees will be encouraged to take advantage of the existing Club Ride Program sponsored by the Regional Transportation Commission of Southern Nevada. Club Ride offers a free ridematching service that matches individuals who live and work in proximity to one another and have a similar work schedule. The program also assists in forming vanpools when demand is met.

  - **Employer Sponsored Van Program.** As a supplement to the voluntary rideshare program, participation in a mandatory van program (using additional 15-passenger vans beyond what is already proposed) may be needed to obtain the 2.5 occupancy rate for carpools. Because employees will be grouped in several hotels in their lodging areas (Pahrump and Las Vegas area), the vans could pick up and drop off employees at their hotels, significantly reducing the number of vehicles travelling to the site.

- **Temporary Traffic Control**. All of the study intersections would operate at an acceptable LOS if they were signalized. One option would be to install temporary traffic signals, but that was deemed ineffective for several reasons. First, the delays at the intersections are only for an hour or two each day, and the signalization would be 24 hours, unnecessarily delaying other drivers for the remainder of the day. Second, the timing at a temporary signal would not be complex enough to handle the highly peaked demands coming from the work site. Finally, the permit requirements for installing a signal at a state highway would likely require more time than is available once it was determined that this mitigation is needed.

A better strategy is to institute traffic control (with flaggers or off-duty police) for one or two hours each day. These staff would allow the high-volume construction traffic to pass through the intersection without stopping, occasionally stopping them to allow cross-traffic through. The capacity of the affected intersections will be increased with this approach, and the impacts will be reduced to less-than-significant.

- **Staggered Work Shifts.** If LOS E or F conditions occur at the intersection even with the ridesharing and passenger vans, and temporary traffic control is not implemented, additional work shifts may need to be staggered so workers not using the ridesharing program would arrive and leave the site over a longer period of time (instead of all at once), thus reducing the potential for queues at the intersections.

- **Physical Improvements.** If LOS E or F conditions occur, even with ridesharing and staggered shifts, temporary physical improvements to the intersections may be required and may include installation of a separate northbound right-turn lane at the SR 160/Tecopa Road intersection.

- **Traffic Control Plan.** Where project construction will require the use of traffic control (signage, flaggers, lead vehicles, etc.), a detailed traffic control plan will be prepared prior to the start of construction for review by the CEC, NDOT, Inyo, Clark and Nye counties, and prepared in accordance with the Manual of Uniform Traffic Control Devices (MUTCD) and the California Supplement of the MUTCD. Project ingress and egress routes will be designated, and project-related vehicle traffic outside these routes will not be allowed. Nearby intersections will be evaluated to determine whether large trucks could complete turning maneuvers through the intersections.

- **Surface Restoration.** An increase in traffic flow or an increase in heavy equipment on the surrounding roads may contribute to a drop in quality of the road surfaces and an increase in maintenance costs. Roads are designed to handle the weights of a number of vehicles for a specific period (the design life). A road's design life may diminish with increased traffic and heavy travel loads over time, resulting in a worn down road surface. In general, any construction activities that could affect existing surfaces or roadway components shall be mitigated by restoring the facility to its original condition (before construction). Pavement restoration shall meet or exceed the applicable standard specifications. The project Standard Details will outline specifics on pavement restoration. Contract documents will provide details on paving, curb and gutter, signing and striping, detectors, sidewalks, medians and landscaping, and other surface elements.

With the implementation of appropriate TMP measures, the potential project impacts will be less-than-significant.

4.7 References

The following additional references were used to complete the updated traffic analysis:

Caltrans. 2012. Traffic Volumes on the California State Highway System. http://traffic-counts.dot.ca.gov/

Caltrans. 2011. State Route 127 Transportation Concept Report.

San Bernardino County Department of Public Works Traffic Division. 2012. Average Daily Traffic Counts. http://www.sbcounty.gov/dpw/trafficadt/AvgDailyTraffic.aspx

San Bernardino County Department of Public Works. 2012. Transportation Permits. http://www.co.san-bernardino.ca.us/trans/transportation_permits.htm

San Bernardino County. 2007. County of San Bernardino 2007 General Plan. http://www.sbcounty.gov/Uploads/lus/GeneralPlan/FINALGP.pdf

SECTION 5.0

Worker Safety & Fire Protection

An increase in workforce would result in an increase in total miles traveled by workers. Generally, traffic safety is measured by miles travelled. During construction activities and ongoing operation of the HHSEGS, there would be the potential for vehicle hazards with and without injuries to occur on the roadways in the vicinity of the HHSEGS project site. This analysis looks at the potential for increased traffic accidents based on the increased worker traffic that would occur during the project's anticipated 29-month construction period. Worker Safety & Fire Protection impacts discussed in the AFC and data responses will not change for the operations phase of the project because the operations workforce will be slightly reduced.

5.1 Accident Analysis

To provide an evaluation of the potential hazard for offsite vehicle accidents during construction, the accident rates on the following road segments were determined based on historical data obtained from the Statewide Integrated Traffic Records System (SWITRS) that compiles incidents reported by the California Highway Patrol (CHP).

- Tecopa Road to SR 127
- SR 127 South from Tecopa Road to the San Bernardino County line
- SR 127 from SR 178 to Tecopa Road
- SR 178 from SR 127 to the Nevada State line

Table WS-1 provides a summary of all accidents reported to the CHP and the corresponding accident rates for the years 2008, 2009, 2010, and 2011 that occurred on roadways in the vicinity of the project site. The Accident Rate shown below includes the conservative modeling assumption of using the "Highest Number" of reported accidents on each segment between 2008 and 2011, instead of averaging those annual numbers over the 4-year period.

TABLE WS-1
Accidents (Injury and Non-Injury) on Roadways within the Vicinity of the HHSEGS Project Site

Roadway Link	Existing ADT	No. of Reported Accidents				Highest No. of Accidents Over Period	Accident Rate*
		2008	2009	2010	2011		
Tecopa Rd. Between SR 127 and NV State Line	200	4	3	0	4	4	0.020
SR 127 south of Tecopa Rd to County Line	750	1	3	0	1	3	0.004
SR 127 from Tecopa Rd to SR 178	825	1	1	0	2	2	0.002
SR 178 from SR 127 to NV State Line	820	2	4	1	3	4	0.004

*Gross number of accidents per ADT per year for each roadway link, based on the highest number of accidents during 2008-2011 divided by the existing ADT.

Using the conservatively estimated accident rates and the additional traffic that would be added to these roadways as a result of the HHSEGS, the potential accidents that could occur during the construction and ongoing operation of the HHSEGS were estimated. Table WS-2 provides an estimate of the accidents (injury and non-injury) that could occur on roadways in the vicinity of the project site with the additional traffic generated by the project. The table uses average trips based on the increase and

decrease of the workforce over the 29-month construction period. The average trips also assume that 70 percent of the total workforce will come and go from California and that vanpooling will be used.

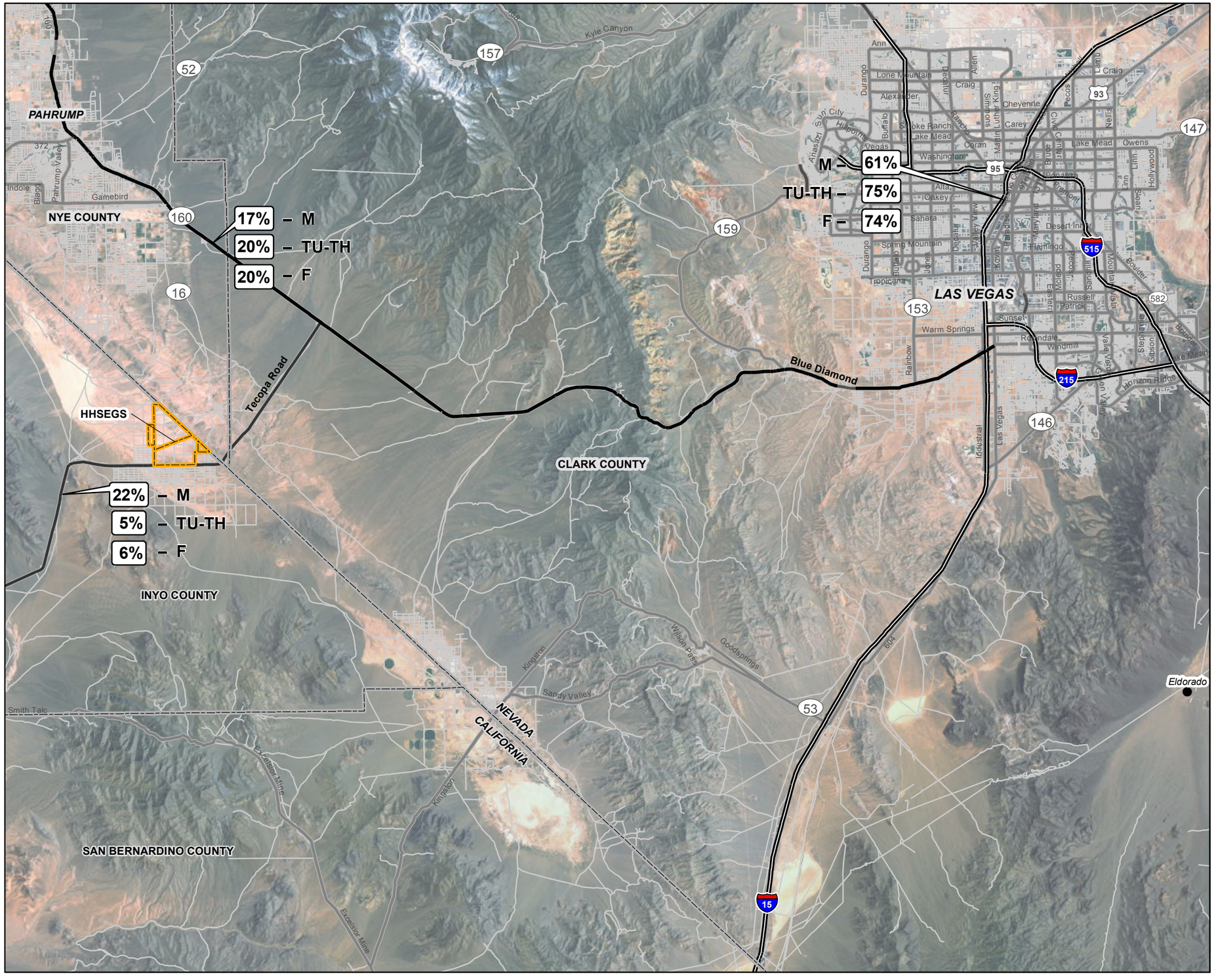
As indicated in Table WS-1, with the additional average daily trips generated by worker traffic during the construction phase of the HHSEGS and accident rate data, there is the potential for five additional vehicle accidents to occur during the 29-month construction period on the surrounding roadways. An accident with injuries may require a response from the Southern Inyo Fire Protection District (SIFPD). In addition, during the ongoing operation of the HHSEGS, there is a minimal anticipated increase in vehicle accidents on the surrounding roadways. Therefore, hazards to worker safety due to offsite vehicle accidents on the roadways in the project vicinity would be less than significant.

TABLE WS-2
Potential Additional Accidents (Injury and Non-Injury) on Roadways within the Vicinity of the HHSEGS Project Site

		Additional ADT Due to Project			Potential Additional Accidents	
Roadway Link	Existing ADT	During Construction	During Operation	Accident Rate[1]	During Construction	During Operation
Tecopa Road west to CSR 127	200	162	10	0.020	3.24	0.40
SR 127 south to County line	750	141	10	0.004	1.00	0.15
SR 127 from Tecopa Rd to SR 178	825	45	0	0.002	0.09	0
SR 178 from SR 127 to NV State Line	820	35	0	0.004	0.14	0

*Gross number of accidents per ADT per year for each roadway.

Traffic Figures



LEGEND

- Eldorado Substation

Roads

- Interstate
- Highway
- Major Road
- Local Road

Project Site Data

- HHSEGS Boundary
- X% - M — Monday Trip Distribution Percentage
- X% - TU-TH — Tuesday - Thursday Trip Distribution Percentage
- X% - F — Friday Trip Distribution Percentage

FIGURE 5.12-4AR1
Project Trip Distribution Percentages AM Peak Hour
AFC Traffic Section
Hidden Hills Solar Energy System

LEGEND

- Eldorado Substation

Roads

- Interstate
- Highway
- Major Road
- Local Road

Project Site Data

- HHSEGS Boundary
- X% - M: Monday Trip Distribution Percentage
- X% - TU-TH: Tuesday - Thursday Trip Distribution Percentage
- X% - F: Friday Trip Distribution Percentage

FIGURE 5.12-4BR1
Project Trip Distribution Percentages
PM Peak Hour
AFC Traffic Section
Hidden Hills Solar Energy System

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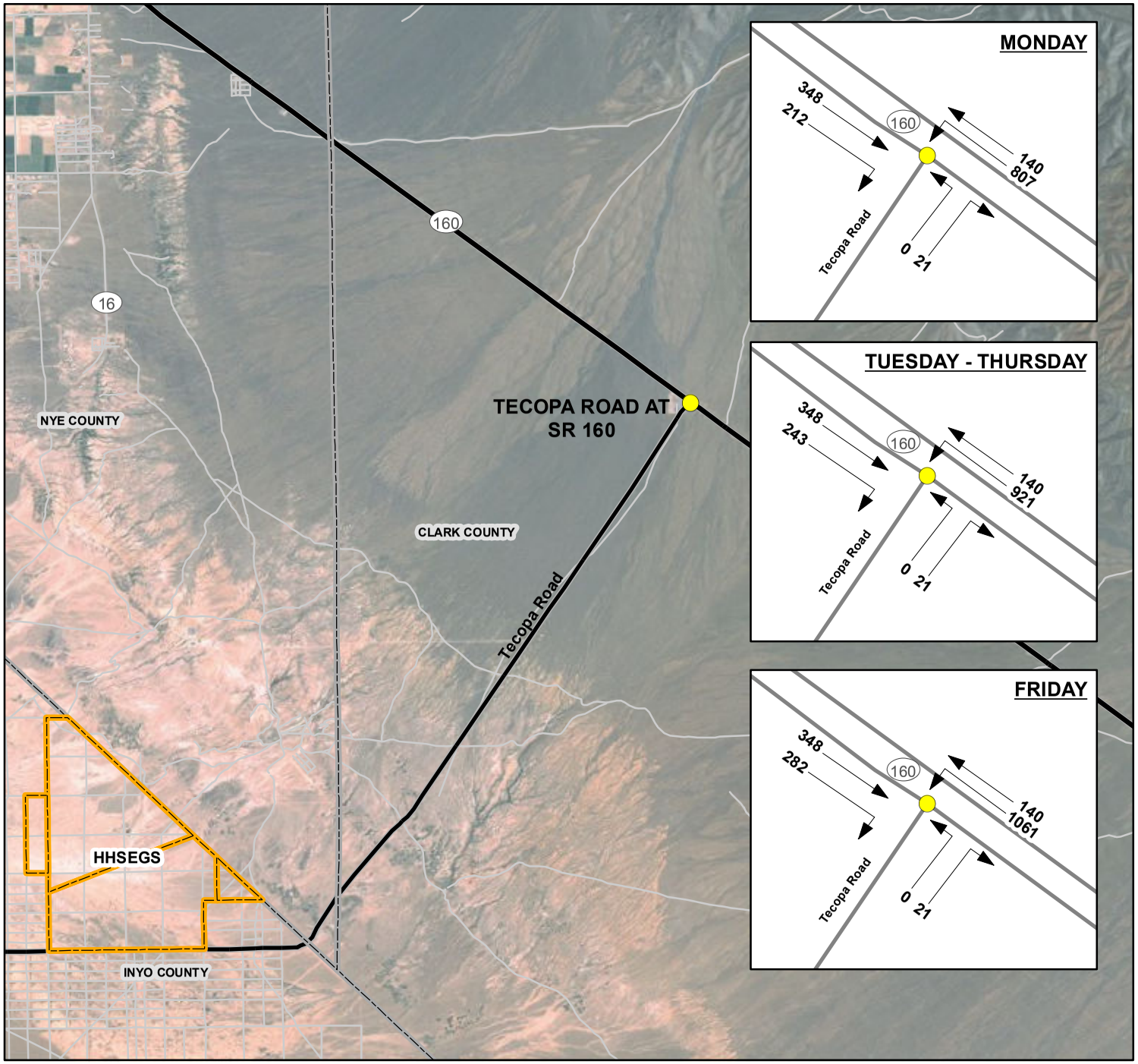

FIGURE 5.12-5R1
Existing + Construction Project
AM Peak Hour Intersection Volumes
Hidden Hills Solar Electric Generating System

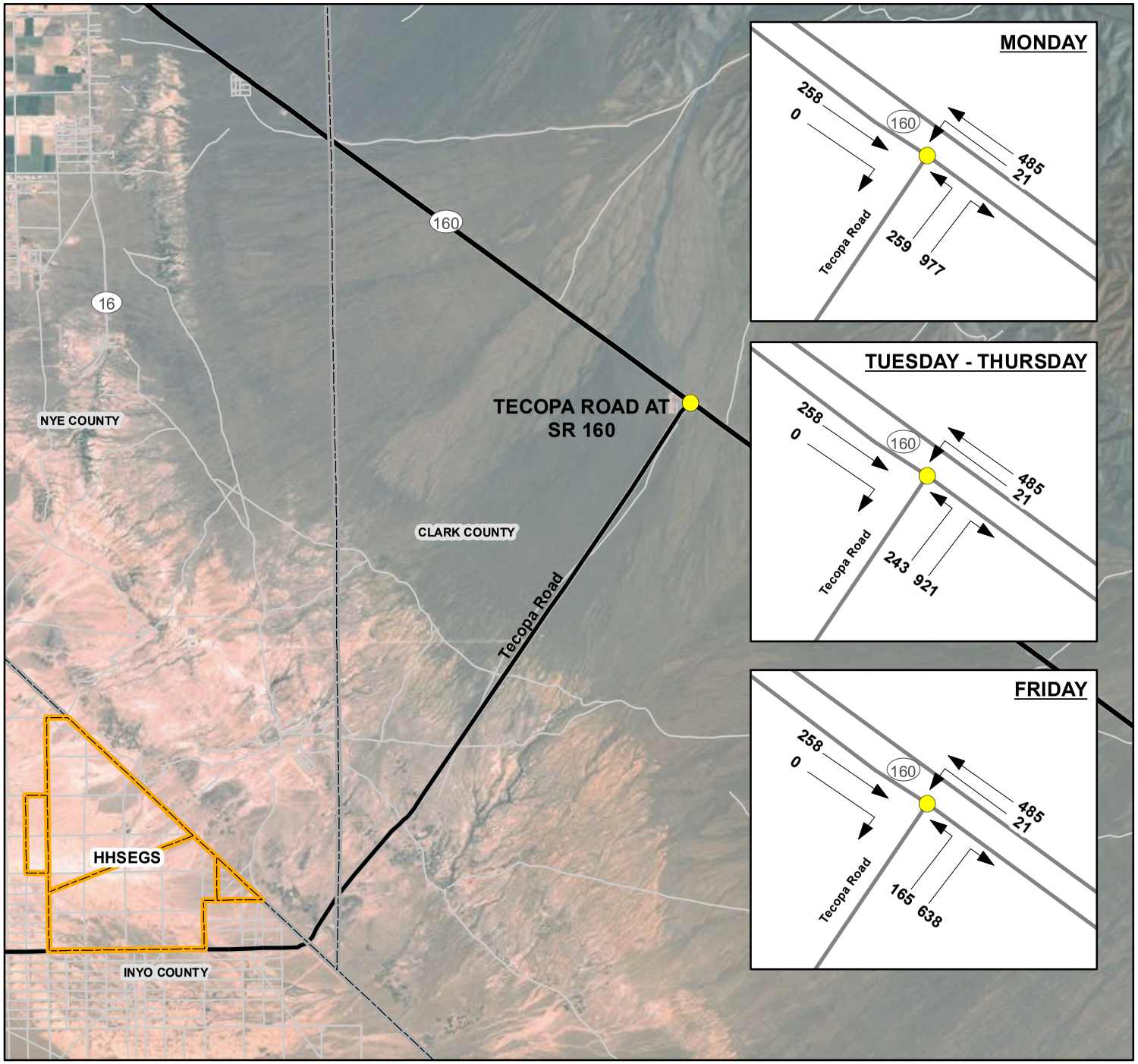

FIGURE 5.12-6R1
Existing + Construction Project
PM Peak Hour Intersection Volumes
Hidden Hills Solar Electric Generating System

Attachment AQ-1
Updated Emissions from Offsite Construction Activities

Hidden Hills On-Road (Off-Site) Vehicle Emissions
Revised September 2011

DeliveryTruck Emissions

Delivery Truck Peak Daily Emissions														
Max Number of Deliveries Per Day	Average Round Trip Haul Distance (miles)	Vehicle Miles Traveled Per Day	Emission Factors (lbs/vmt)						Daily Emissions (lbs/day)					
			NOx	CO	VOC	SOx	PM10	PM2.5	NOx	CO	VOC	SOx	PM10	PM2.5
90	100	9,000	0.0312	0.0144	2.91E-03	3.95E-05	1.23E-03	9.83E-04	280.6	129.7	26.1	0.4	11.1	8.8
Idle Exhaust							0.0003	(g/idle-hr)					0.03	

Delivery Truck Peak Annual Emissions																
Rolling 12-Mo. Peak No. of Deliveries Per Year	Average Round Trip Haul Distance (miles)	Vehicle Miles Traveled Per Year	Emission Factors (lbs/vmt)							Annual Emissions (tons/yr)						
			NOx	CO	VOC	SOx	PM10	PM2.5	CO2	NOx	CO	VOC	SOx	PM10	PM2.5	CO2
6,151	100	615,100	0.0312	0.0144	2.91E-03	3.95E-05	1.23E-03	9.83E-04	4.13	9.6	4.4	0.9	0.01	0.4	0.3	1,271
Idle Exhaust							0.0003	(g/idle-hr)						0.001		

Hidden Hills On-Road (Off-Site) Vehicle Emissions

Revised September 2011

Worker Vehicle Emissions

Worker Travel Daily Emissions (Maximum)															
				Emission Factors (lbs/vmt)						Daily Emissions (lbs/day)					
Shift	Max Number of Workers Per Day	Average Peak Daily Round Trip Distance (Miles)	VMT Per Peak Day (Miles)	NOx	CO	VOC	SOx	PM10	PM2.5	NOx	CO	VOC	SOx	PM10	PM2.5
Day Shift	1,177	10.5	12,306	5.74E-04	6.24E-03	6.70E-04	9.55E-06	8.53E-05	5.34E-05	7.1	76.8	8.2	0.1	1.1	0.7
Swing Shift	428	35.6	15,238	1.67E-03	1.51E-02	1.58E-03	9.55E-06	8.53E-05	5.34E-05	25.4	230.1	24.1	0.1	1.3	0.8
Total	1,605		27,543							32.5	306.8	32.3	0.3	2.4	1.5

Worker Travel Peak Annual Emissions																		
					Emission Factors (lbs/vmt)							Annual Emissions (tons/yr)						
Shift	Peak of Rolling 12-Mo. Average No. of Workers Per Day	Ann. Average Daily Round Trip Distance (Miles)	Days per Year	VMT Per Year (Miles)	NOx	CO	VOC	SOx	PM10	PM2.5	CO2	NOx	CO	VOC	SOx	PM10	PM2.5	CO2
Day Shift	892	13.6	288	3,498,625	5.74E-04	6.24E-03	6.70E-04	9.55E-06	8.53E-05	5.34E-05	3.88E-01	1.0	10.9	1.2	0.02	0.15	0.09	678
Swing Shift	333	12.2	288	1,170,272	1.67E-03	1.51E-02	1.58E-03	9.55E-06	8.53E-05	5.34E-05	9.21E-01	1.0	8.8	0.9	0.01	0.05	0.03	539
Total	1,225			4,668,896								2.0	19.7	2.1	0.0	0.2	0.1	1,217

Hidden Hills Construction Worker and Deliveries Schedule

Hidden Hills SEGS (Total, Both Plants)

Revised September 2011

Project Month	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Construction Workers: Day Shift (per day)																	
Craft	8	23	53	106	175	265	309	344	378	454	494	552	599	633	686	784	906
Subcontractors	16	32	40	80	96	96	104	104	112	120	120	120	120	120	160	168	184
Startup Non-manual Labor	0	0	0	0	0	0	2	2	3	4	5	4	4	4	4	4	4
On-site Transmission and Gas Lines	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Compliance Support (inc. linears)	80	80	30	30	30	30	30	30	30	30	30	30	30	80	80	30	30
Owners/Others	14	14	28	33	49	66	68	73	78	95	103	107	108	108	109	112	112
Construction Workers: Swing Shift (per day)																	
Craft	3	10	23	46	75	113	133	147	162	195	212	237	257	272	294	336	388
Subcontractors	4	8	10	20	24	24	26	26	28	30	30	30	30	30	40	42	46
Startup Non-manual Labor	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1
Owners/Others	3	4	7	8	12	16	17	18	20	24	26	27	27	27	27	28	28
Total Onsite Construction Workers	128	171	191	323	461	610	689	745	812	953	1,021	1,108	1,176	1,275	1,401	1,505	1,699
Average Construction Workers																	
Deliveries (per month)																	
Equipment and Materials	0	0	35	440	420	407	472	438	411	112	120	148	141	137	165	171	135
Concrete	0	0	20	40	0	0	0	0	0	0	0	0	0	0	0	0	20
Heliostat Componants	0	0	0	0	245	245	245	245	245	245	246	246	246	246	246	246	245
Total Deliveries	0	0	55	480	665	652	717	683	656	357	366	394	387	383	411	**417**	400

Hidden Hills Construction Worker and Deliveries Schedule

Hidden Hills SEGS (Total, Both Plants)

Revised September 2011

Project Month	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**Total Annual**	**CA Only (70%)**
Construction Workers: Day Shift (per day)															
Craft	1,024	1,103	1,192	1,191	1,102	986	832	675	501	379	303	242	218		
Subcontractors	200	240	280	280	240	200	168	160	120	104	96	80	40		
Startup Non-manual Labor	5	6	6	6	6	6	6	5	5	5	5	3	3		
On-site Transmission and Gas Lines	0	0	67	37	0	0	0	0	0	0	0	0	0		
Compliance Support (inc. linears)	20	20	26	13	10	5	5	5	5	5	5	5	5		
Owners/Others	112	112	111	111	111	98	97	94	67	58	46	36	28	1,274	892
Construction Workers: Swing Shift (per day)															
Craft	439	472	511	510	472	422	356	289	214	162	130	104	93		
Subcontractors	50	60	70	70	60	50	42	40	30	26	24	20	10		
Startup Non-manual Labor	1	2	2	2	2	2	1	1	1	1	1	1	1		
Owners/Others	28	28	28	28	28	25	24	24	17	14	11	9	7	475	333
Total Onsite Construction Workers	1,879	2,043	**2,293**	2,248	2,031	1,794	1,531	1,293	960	754	621	500	405	1,749	1,225
Average Construction Workers														12-Mo. Rolling Average	
Deliveries (per month)															
Equipment and Materials	127	122	98	94	91	65	55	43	36	28	28	10	0		
Concrete	10	10	10	10	5	5	0	0	0	0	0	0	0		
Heliostat Componants	245	245	245	245	245		0	0	0	0	0	0	0		
Total Deliveries	382	377	353	349	341	70	55	43	36	28	28	10	0	6,151	
														12-Mo. Rolling Total	

Hidden Hills On-Road Emission Factors and EMFAC Output

Onroad Emission Factors

	Emission Factors (1)						
	NOx	CO	VOC	SOx	PM10	PM2.5	CO2
Truck Hauling (lbs/vmt)	3.12E-02	1.44E-02	2.91E-03	3.95E-05	1.23E-03	9.83E-04	4.13E+00
Truck Idling (lb/idle-hour) (2)					3.37E-04		
GVAB Light Duty Trucks/Cars (lbs/vmt)(1)	1.67E-03	1.51E-02	1.58E-03	9.55E-06	8.53E-05	5.34E-05	9.21E-01
SCAB Light Duty Trucks/Cars (lbs/vmt)(1)	5.74E-04	6.24E-03	6.70E-04	9.55E-06	8.53E-05	5.34E-05	3.88E-01

Notes:

(1) Emission factors for delivery trucks from EMFAC2007 V2.3, Great Basin Valleys Air Basin Average and South Coast Air Basin Average, model years 1969 to 2013. To avoid roundoff error due to small totals, the statewide inventory was used for SOx, PM10 and PM2.5.

(2) Based on 2013 statewide HHD Diesel truck idling of 0.58 tons PM/day, 241,840 HHD Diesel trucks, and 101.2 minutes/truck of idiling per day, From EMFAC2007 v. 2.3.

Title : Hidden Hills Onroad - GVB
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2011/06/13 05:37:40
Scen Year: 2013 -- All model years in the range 1969 to 2013 selected
Season : Annual
Area : Great Basin Valleys Air Basin Avera
I/M Stat : COO Basic (2005) -- Using I/M schedule for area 1 Alpine (GBV)
Emissions: Tons Per Day

****

	LDA-NCAT	LDA-CAT	LDA-DSL	LDA-TOT	LDT1-NCAT	LDT1-CAT	LDT1-DSL	LDT1-TOT	LDT2-NCAT	LDT2-CAT	LDT2-DSL	LDT2-TOT	MDV-NCAT	MDV-CAT	MDV-DSL	MDV-TOT	
Vehicles	122	11043	75	11239	360	11376	793	12528	86	8999	68	9154	0	0	0	0	0
VMT/1000	2	403	2	406	7	378	24	409	2	333	2	336	0	0	0	0	0
Trips	473	68642	424	69539	1425	68264	4781	74470	342	56104	406	56852	0	0	0	0	0
Total Organic Gas Emissions																	
Run Exh	0.01	0.05	0	0.06	0.05	0.11	0	0.17	0.01	0.05	0	0.07	0	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0	0.05	0	0.06	0.01	0.09	0	0.11	0	0.05	0	0.06	0	0	0	0	0
Total Ex	0.02	0.1	0	0.12	0.07	0.21	0	0.28	0.02	0.11	0	0.12	0	0	0	0	0
Diurnal	0	0.01	0	0.01	0	0.01	0	0.01	0	0.01	0	0.01	0	0	0	0	0
Hot Soak	0	0.02	0	0.02	0	0.03	0	0.03	0	0.01	0	0.01	0	0	0	0	0
Running	0.01	0.04	0	0.05	0.01	0.14	0	0.16	0	0.07	0	0.07	0	0	0	0	0
Resting	0	0	0	0	0	0.01	0	0.01	0	0	0	0	0	0	0	0	0
Total	0.03	0.17	0	0.2	0.09	0.4	0	0.49	0.02	0.2	0	0.22	0	0	0	0	0
Carbon Monoxide Emissions																	
Run Exh	0.17	1.02	0	1.19	0.71	2.73	0.01	3.45	0.17	1.25	0	1.42	0	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0.02	0.64	0	0.66	0.05	1.24	0	1.29	0.01	0.67	0	0.69	0	0	0	0	0
Total Ex	0.18	1.66	0	1.84	0.76	3.97	0.01	4.74	0.18	1.92	0	2.11	0	0	0	0	0
Oxides of Nitrogen Emissions																	
Run Exh	0.01	0.13	0	0.15	0.04	0.34	0.04	0.42	0.01	0.23	0	0.24	0	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0	0.04	0	0.04	0	0.05	0	0.06	0	0.05	0	0.05	0	0	0	0	0
Total Ex	0.01	0.17	0	0.18	0.04	0.39	0.04	0.48	0.01	0.29	0	0.3	0	0	0	0	0
Carbon Dioxide Emissions (000)																	
Run Exh	0	0.16	0	0.16	0	0.18	0.01	0.2	0	0.16	0	0.16	0	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0	0.01	0	0.01	0	0.01	0	0.01	0	0.01	0	0.01	0	0	0	0	0
Total Ex	0	0.16	0	0.16	0	0.19	0.01	0.2	0	0.17	0	0.17	0	0	0	0	0
PM10 Emissions																	
Run Exh	0	0	0	0.01	0	0.01	0	0.01	0	0.01	0	0.01	0	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Ex	0	0.01	0	0.01	0	0.01	0	0.01	0	0.01	0	0.01	0	0	0	0	0
TireWear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BrakeWr	0	0.01	0	0.01	0	0.01	0	0.01	0	0	0	0	0	0	0	0	0
Total	0	0.01	0	0.01	0	0.02	0	0.02	0	0.02	0	0.02	0	0	0	0	0
Lead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fuel Consumption (000 gallons)																	
Gasoline	0.14	17	0	17.14	0.56	20.32	0	20.88	0.13	17.62	0	17.76	0	0	0	0	0
Diesel	0	0	0.06	0.06	0	0	0.82	0.82	0	0	0.07	0.07	0	0	0	0	0

```
LHDT1-NCAT LHDT1-CAT  LHDT1-DSL  LHDT1-TOT  LHDT2-NCAT LHDT2-CAT  LHDT2-DSL  LHDT2-TOT  MHDT-NCAT  MHDT-CAT   MHDT-DSL   MHDT-TOT   HHDT-NCAT  HHDT-CAT   HHDT-DSL   HHDT-TOT   OBUS-NCAT  OBUS-CAT   OBUS-DSL
          0          0          0          0          0          0          0          0          0          0          0          0         12         20       1191       1223          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0          2        177        179          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0        571        923       6025       7519          0          0          0

          0          0          0          0          0          0          0          0          0          0          0          0          0          0        0.2        0.2          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0          0       0.03       0.03          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0       0.02       0.01          0       0.02          0          0          0
-------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------
          0          0          0          0          0          0          0          0          0          0          0          0       0.02       0.01       0.23       0.26          0          0          0

          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0
-------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------
          0          0          0          0          0          0          0          0          0          0          0          0       0.02       0.01       0.23       0.26          0          0          0

          0          0          0          0          0          0          0          0          0          0          0          0        0.1       0.07        0.7       0.87          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0          0       0.11       0.11          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0       0.17       0.13          0        0.3          0          0          0
-------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------
          0          0          0          0          0          0          0          0          0          0          0          0       0.27        0.2       0.81       1.29          0          0          0

          0          0          0          0          0          0          0          0          0          0          0          0          0       0.02        2.5       2.53          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0          0       0.25       0.25          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0       0.01          0       0.01          0          0          0
-------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------
          0          0          0          0          0          0          0          0          0          0          0          0       0.01       0.03       2.75       2.79          0          0          0

          0          0          0          0          0          0          0          0          0          0          0          0          0          0       0.36       0.36          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0          0       0.01       0.01          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0
-------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------
          0          0          0          0          0          0          0          0          0          0          0          0          0          0       0.37       0.37          0          0          0

          0          0          0          0          0          0          0          0          0          0          0          0          0          0       0.09       0.09          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0
-------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------
          0          0          0          0          0          0          0          0          0          0          0          0          0          0        0.1        0.1          0          0          0

          0          0          0          0          0          0          0          0          0          0          0          0          0          0       0.01       0.01          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0          0       0.01       0.01          0          0          0
-------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------    -------
          0          0          0          0          0          0          0          0          0          0          0          0          0          0       0.11       0.11          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0          0

          0          0          0          0          0          0          0          0          0          0          0          0       0.07       0.16          0       0.23          0          0          0
          0          0          0          0          0          0          0          0          0          0          0          0          0          0      33.39      33.39          0          0          0
```

OBUS-TOT	SBUS-NCAT	SBUS-CAT	SBUS-DSL	SBUS-TOT	UB-NCAT	UB-CAT	UB-DSL	UB-TOT	MH-NCAT	MH-CAT	MH-DSL	MH-TOT	MCY-NCAT	MCY-CAT	MCY-DSL	MCY-TOT	ALL-TOT
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34145
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1331
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	208380
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.25
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.78
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.06
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.29
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.17
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.93
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.93
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9.98
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.34
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.25
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.16
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.88
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.91
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.12
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.16
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34.34

Title : Hidden Hills Onroad - SCAB
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2012/08/28 07:48:22
Scen Year: 2013 -- All model years in the range 1969 to 2013 selected
Season : Annual
Area : South Coast Air Basin Average
I/M Stat : Enhanced Interim (2005) -- Using I/M schedule for area 59 Los Angeles (SC)
Emissions: Tons Per Day

	LDA-NCAT	LDA-CAT	LDA-DSL	LDA-TOT	LDT1-NCAT	LDT1-CAT	LDT1-DSL	LDT1-TOT	LDT2-NCAT	LDT2-CAT	LDT2-DSL	LDT2-TOT	MDV-NCAT	MDV-CAT	MDV-DSL	MDV-TOT	
Vehicles	24728	5825630	8957	5859320	10076	784101	19684	813861	7427	2426730	2565	2436720	0	0	0	0	0
VMT/1000	375	198454	186	199015	216	28991	620	29827	161	89317	74	89551	0	0	0	0	0
Trips	96130	36628100	46064	36770300	39211	4911990	118316	5069520	29174	15252800	14627	15296600	0	0	0	0	0
Total Organic Gas Emissions																	
Run Exh	2.83	12.88	0.04	15.75	1.72	2.36	0.06	4.14	1.26	8.82	0.01	10.09	0	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0.57	12.94	0	13.52	0.25	1.83	0	2.07	0.17	7.02	0	7.19	0	0	0	0	0
Total Ex	3.4	25.82	0.04	29.26	1.97	4.19	0.06	6.22	1.43	15.83	0.01	17.28	0	0	0	0	0
Diurnal	0.17	3.76	0	3.93	0.07	0.51	0	0.58	0.05	1.67	0	1.72	0	0	0	0	0
Hot Soak	0.32	6.29	0	6.61	0.13	0.86	0	0.99	0.1	2.71	0	2.81	0	0	0	0	0
Running	1.75	14.97	0	16.71	0.4	3.57	0	3.97	0.28	11.83	0	12.11	0	0	0	0	0
Resting	0.12	2.64	0	2.77	0.05	0.39	0	0.43	0.04	1.22	0	1.26	0	0	0	0	0
Total	5.76	53.48	0.04	59.28	2.62	9.51	0.06	12.19	1.9	33.27	0.01	35.17	0	0	0	0	0
Carbon Monoxide Emissions																	
Run Exh	30.67	352.22	0.17	383.06	18.14	71.22	0.41	89.77	13.13	240.07	0.06	253.26	0	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	3.11	150.64	0	153.76	1.33	24.83	0	26.16	0.96	85.98	0	86.94	0	0	0	0	0
Total Ex	33.79	502.86	0.17	536.82	19.47	96.05	0.41	115.94	14.09	326.05	0.06	340.2	0	0	0	0	0
Oxides of Nitrogen Emissions																	
Run Exh	1.76	30.43	0.3	32.49	1.02	6.07	1.02	8.12	0.74	29.8	0.12	30.66	0	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0.15	10.16	0	10.3	0.06	1.56	0	1.62	0.04	8.15	0	8.19	0	0	0	0	0
Total Ex	1.91	40.59	0.3	42.79	1.09	7.63	1.02	9.74	0.79	37.95	0.12	38.85	0	0	0	0	0
Carbon Dioxide Emissions (000)																	
Run Exh	0.22	85.98	0.07	86.28	0.13	15.6	0.24	15.97	0.09	48.52	0.03	48.64	0	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0.02	2.9	0	2.92	0.01	0.49	0	0.49	0.01	1.51	0	1.52	0	0	0	0	0
Total Ex	0.24	88.88	0.07	89.2	0.13	16.09	0.24	16.46	0.1	50.04	0.03	50.16	0	0	0	0	0
PM10 Emissions																	
Run Exh	0.01	2.67	0.03	2.71	0.01	0.46	0.03	0.5	0.01	2.93	0.01	2.94	0	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0	0.25	0	0.25	0	0.04	0	0.04	0	0.25	0	0.25	0	0	0	0	0
Total Ex	0.02	2.92	0.03	2.97	0.01	0.5	0.03	0.54	0.01	3.18	0.01	3.19	0	0	0	0	0
TireWear	0	1.75	0	1.76	0	0.26	0.01	0.26	0	0.79	0	0.79	0	0	0	0	0
BrakeWr	0.01	2.74	0	2.75	0	0.4	0.01	0.41	0	1.24	0	1.24	0	0	0	0	0
Total	0.02	7.42	0.03	7.47	0.01	1.15	0.05	1.22	0.01	5.2	0.01	5.22	0	0	0	0	0
Lead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOx	0	0.86	0	0.87	0	0.16	0	0.16	0	0.49	0	0.49	0	0	0	0	0
Fuel Consumption (000 gallons)																	
Gasoline	31.28	9187.86	0	9219.14	17.55	1663.89	0	1681.44	13.04	5179.57	0	5192.61	0	0	0	0	0
Diesel	0	0	6.64	6.64	0	0	21.33	21.33	0	0	2.56	2.56	0	0	0	0	0

LHDT1-NCAT	LHDT1-CAT	LHDT1-DSL	LHDT1-TOT	LHDT2-NCAT	LHDT2-CAT	LHDT2-DSL	LHDT2-TOT	MHDT-NCAT	MHDT-CAT	MHDT-DSL	MHDT-TOT	HHDT-NCAT	HHDT-CAT	HHDT-DSL	HHDT-TOT	OBUS-NCAT	OBUS-CAT	OBUS-DSL
0	0	0	0	0	0	0	0	0	0	0	0	193	3033	44651	47877	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	3	266	8811	9080	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	8805	138493	225958	373257	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0.05	0.94	10.25	11.24	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.02	1.02	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0.17	0.61	0	0.78	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0.22	1.55	11.27	13.04	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.01	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0.05	0.09	0	0.14	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0.27	1.65	11.27	13.19	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	1.65	13.64	35.77	51.06	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.82	3.82	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	2.59	8.28	0	10.87	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	4.25	21.91	39.59	65.75	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0.06	3.19	104.76	108.02	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	9.54	9.54	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0.04	1.14	0	1.18	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0.1	4.33	114.3	118.73	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0.19	17.98	18.18	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.55	0.55	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0	0.01	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	18.53	18.74	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	5.13	5.14	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11	0.11	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	5.24	5.25	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.35	0.35	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.27	0.28	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	5.86	5.88	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.18	0.18	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	1.14	24.37	0	25.51	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1668.06	1668.06	0	0	0

OBUS-TOT	SBUS-NCAT	SBUS-CAT	SBUS-DSL	SBUS-TOT	UB-NCAT	UB-CAT	UB-DSL	UB-TOT	MH-NCAT	MH-CAT	MH-DSL	MH-TOT	MCY-NCAT	MCY-CAT	MCY-DSL	MCY-TOT	ALL-TOT
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9157770
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	327474
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57509600
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41.21
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.02
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23.56
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65.79
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.23
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10.42
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.93
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.45
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	119.83
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	777.15
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.82
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	277.73
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1058.7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	179.28
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9.54
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21.3
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210.12
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	169.07
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.55
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.94
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	174.56
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11.29
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.11
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.54
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11.94
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.16
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.69
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19.79
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.69
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16118.7
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1698.59

Title : Hidden Hills Onroad PM10 - Statewide
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2011/06/13 05:37:40
Scen Year: 2013 -- All model years in the range 1969 to 2013 selected
Season : Annual
Area : Statewide totals Average
I/M Stat : Enhanced Interim (2005) -- Using I/M schedule for area 59 Los Angeles (SC)
Emissions: Tons Per Day

	LDA-NCAT	LDA-CAT	LDA-DSL	LDA-TOT	LDT1-NCAT	LDT1-CAT	LDT1-DSL	LDT1-TOT	LDT2-NCAT	LDT2-CAT	LDT2-DSL	LDT2-TOT	MDV-NCAT	MDV-CAT	MDV-DSL	MDV-TOT
Vehicles	71588	14148500	28949	14249000	45562	2945190	129337	3120090	26018	5921690	11298	5959010	0	0	0	0
VMT/1000	1102	479642	633	481376	861	103331	3727	107919	504	213994	303	214801	0	0	0	0
Trips	278082	88774300	152701	89205100	178498	18227800	775381	19181700	102162	37130000	64389	37296600	0	0	0	0
Total Organic Gas Emissions																
Run Exh	8.16	32.23	0.12	40.51	6.44	10.58	0.34	17.36	3.82	20.71	0.04	24.56	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	1.73	35.57	0	37.3	1.11	9.41	0	10.52	0.63	19.02	0	19.65	0	0	0	0
Total Ex	9.9	67.79	0.12	77.81	7.55	19.99	0.34	27.88	4.45	39.73	0.04	44.22	0	0	0	0
Diurnal	0.47	9.37	0	9.84	0.29	2.69	0	2.98	0.17	4.17	0	4.34	0	0	0	0
Hot Soak	0.93	16.23	0	17.16	0.61	4.18	0	4.79	0.35	7.01	0	7.36	0	0	0	0
Running	5.14	38.95	0	44.09	1.73	18.63	0	20.36	0.98	31.71	0	32.68	0	0	0	0
Resting	0.3	5.95	0	6.25	0.19	1.72	0	1.91	0.11	2.73	0	2.85	0	0	0	0
Total	16.73	138.3	0.12	155.15	10.37	47.21	0.34	57.93	6.05	85.35	0.04	91.45	0	0	0	0
Carbon Monoxide Emissions																
Run Exh	92.05	866.39	0.52	958.97	71.22	311.78	2.36	385.36	41.72	573.4	0.23	615.35	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	9.13	409.72	0	418.85	5.96	123.38	0	129.34	3.39	232.8	0	236.19	0	0	0	0
Total Ex	101.18	1276.11	0.52	1377.82	77.18	435.16	2.36	514.7	45.11	806.19	0.23	851.53	0	0	0	0
Oxides of Nitrogen Emissions																
Run Exh	5.4	80.39	1.02	86.81	4.16	28.84	6.1	39.1	2.41	74.76	0.49	77.66	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0.43	26.69	0	27.12	0.27	6.91	0	7.18	0.16	21.37	0	21.52	0	0	0	0
Total Ex	5.83	107.08	1.02	113.93	4.43	35.75	6.1	46.29	2.57	96.13	0.49	99.18	0	0	0	0
Carbon Dioxide Emissions (000)																
Run Exh	0.63	200.69	0.25	201.57	0.48	53.16	1.42	55.06	0.29	112.13	0.12	112.53	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0.06	7.04	0	7.1	0.04	1.81	0	1.84	0.02	3.69	0	3.71	0	0	0	0
Total Ex	0.69	207.73	0.25	208.66	0.52	54.96	1.42	56.91	0.31	115.82	0.12	116.24	0	0	0	0
PM10 Emissions																
Run Exh	0.04	6.1	0.08	6.22	0.03	1.58	0.19	1.81	0.02	6.6	0.02	6.64	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0	0.63	0	0.63	0	0.16	0	0.17	0	0.63	0	0.63	0	0	0	0
Total Ex	0.04	6.73	0.08	6.85	0.03	1.75	0.19	1.97	0.02	7.23	0.02	7.27	0	0	0	0
TireWear	0.01	4.23	0.01	4.25	0.01	0.91	0.03	0.95	0	1.89	0	1.89	0	0	0	0
BrakeWr	0.02	6.63	0.01	6.66	0.01	1.43	0.05	1.49	0.01	2.96	0	2.97	0	0	0	0
Total	0.07	17.59	0.09	17.75	0.05	4.09	0.28	4.42	0.03	12.08	0.03	12.14	0	0	0	0
Lead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOx	0.01	2.01	0	2.03	0.01	0.53	0.01	0.55	0	1.12	0	1.13	0	0	0	0
Fuel Consumption (000 gallons)																
Gasoline	89.9	21491.62	0	21581.53	68.1	5702.74	0	5770.84	40.19	11998.26	0	12038.46	0	0	0	0
Diesel	0	0	22.44	22.44	0	0	128.21	128.21	0	0	10.52	10.52	0	0	0	0

LHDT1-NCAT	LHDT1-CAT	LHDT1-DSL	LHDT1-TOT	LHDT2-NCAT	LHDT2-CAT	LHDT2-DSL	LHDT2-TOT	MHDT-NCAT	MHDT-CAT	MHDT-DSL	MHDT-TOT	HHDT-NCAT	HHDT-CAT	HHDT-DSL	HHDT-TOT	OBUS-NCAT	OBUS-CAT	OBUS-DSL	
	0	0	0	0	0	0	0	0	0	0	0	0	841	8598	232401	241840	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	11	810	41224	42044	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	38399	392653	1176070	1607120	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0.19	2.38	42.95	45.53	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.39	5.39	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0.82	1.87	0	2.69	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0	1.01	4.26	48.34	53.61	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0.02	0	0.04	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0.25	0.29	0	0.54	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0	1.28	4.57	48.34	54.19	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	6.92	37.83	152.92	197.68	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20.49	20.49	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	11.94	27.31	0	39.25	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0	18.86	65.14	173.41	257.41	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0.26	9.24	487.03	496.53	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49.37	49.37	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0.18	3.31	0	3.49	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0	0.44	12.55	536.4	549.39	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.54	83.07	83.62	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.84	2.84	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.02	0	0.02	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0	0.02	0.56	85.91	86.49	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	20.81	20.82	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.58	0.58	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0.02	21.39	21.41	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	1.64	1.65	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03	1.28	1.31	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0.05	24.31	24.36	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.82	0.83	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	4.94	69.07	0	74.02	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7732.27	7732.27	0	0	0

OBUS-TOT	SBUS-NCAT	SBUS-CAT	SBUS-DSL	SBUS-TOT	UB-NCAT	UB-CAT	UB-DSL	UB-TOT	MH-NCAT	MH-CAT	MH-DSL	MH-TOT	MCY-NCAT	MCY-CAT	MCY-DSL	MCY-TOT	ALL-TOT
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23570000
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	846140
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	147290000
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	127.96
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70.17
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	203.52
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17.17
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29.34
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97.68
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11.01
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	358.71
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2157.35
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20.49
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	823.63
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3001.46
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	700.1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49.37
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59.32
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	808.78
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	452.78
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.84
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12.68
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	468.3
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.49
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.58
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.43
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.5
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8.74
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12.43
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58.67
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.54
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39464.84
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7893.43

Title : Hidden Hills Onroad PM2.5 - Statewide
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2011/06/13 05:37:40
Scen Year: 2013 -- All model years in the range 1969 to 2013 selected
Season : Annual
Area : Statewide totals Average
I/M Stat : Enhanced Interim (2005) -- Using I/M schedule for area 59 Los Angeles (SC)
Emissions: Tons Per Day

****

	LDA-NCAT	LDA-CAT	LDA-DSL	LDA-TOT	LDT1-NCAT	LDT1-CAT	LDT1-DSL	LDT1-TOT	LDT2-NCAT	LDT2-CAT	LDT2-DSL	LDT2-TOT	MDV-NCAT	MDV-CAT	MDV-DSL	MDV-TOT
Vehicles	71588	14148500	28949	14249000	45562	2945190	129337	3120090	26018	5921690	11298	5959010	0	0	0	0
VMT/1000	1102	479642	633	481376	861	103331	3727	107919	504	213994	303	214801	0	0	0	0
Trips	278082	88774300	152701	89205100	178498	18227800	775381	19181700	102162	37130000	64389	37296600	0	0	0	0
Total Organic Gas Emissions																
Run Exh	8.16	32.23	0.12	40.51	6.44	10.58	0.34	17.36	3.82	20.71	0.04	24.56	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	1.73	35.57	0	37.3	1.11	9.41	0	10.52	0.63	19.02	0	19.65	0	0	0	0
Total Ex	9.9	67.79	0.12	77.81	7.55	19.99	0.34	27.88	4.45	39.73	0.04	44.22	0	0	0	0
Diurnal	0.47	9.37	0	9.84	0.29	2.69	0	2.98	0.17	4.17	0	4.34	0	0	0	0
Hot Soak	0.93	16.23	0	17.16	0.61	4.18	0	4.79	0.35	7.01	0	7.36	0	0	0	0
Running	5.14	38.95	0	44.09	1.73	18.63	0	20.36	0.98	31.71	0	32.68	0	0	0	0
Resting	0.3	5.95	0	6.25	0.19	1.72	0	1.91	0.11	2.73	0	2.85	0	0	0	0
Total	16.73	138.3	0.12	155.15	10.37	47.21	0.34	57.93	6.05	85.35	0.04	91.45	0	0	0	0
Carbon Monoxide Emissions																
Run Exh	92.05	866.39	0.52	958.97	71.22	311.78	2.36	385.36	41.72	573.4	0.23	615.35	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	9.13	409.72	0	418.85	5.96	123.38	0	129.34	3.39	232.8	0	236.19	0	0	0	0
Total Ex	101.18	1276.11	0.52	1377.82	77.18	435.16	2.36	514.7	45.11	806.19	0.23	851.53	0	0	0	0
Oxides of Nitrogen Emissions																
Run Exh	5.4	80.39	1.02	86.81	4.16	28.84	6.1	39.1	2.41	74.76	0.49	77.66	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0.43	26.69	0	27.12	0.27	6.91	0	7.18	0.16	21.37	0	21.52	0	0	0	0
Total Ex	5.83	107.08	1.02	113.93	4.43	35.75	6.1	46.29	2.57	96.13	0.49	99.18	0	0	0	0
Carbon Dioxide Emissions (000)																
Run Exh	0.63	200.69	0.25	201.57	0.48	53.16	1.42	55.06	0.29	112.13	0.12	112.53	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0.06	7.04	0	7.1	0.04	1.81	0	1.84	0.02	3.69	0	3.71	0	0	0	0
Total Ex	0.69	207.73	0.25	208.66	0.52	54.96	1.42	56.91	0.31	115.82	0.12	116.24	0	0	0	0
PM2.5 Emissions																
Run Exh	0.03	5.66	0.07	5.76	0.02	1.47	0.18	1.67	0.01	6.12	0.02	6.16	0	0	0	0
Idle Exh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Start Ex	0	0.58	0	0.59	0	0.15	0	0.15	0	0.59	0	0.59	0	0	0	0
Total Ex	0.03	6.24	0.07	6.35	0.02	1.62	0.18	1.82	0.02	6.71	0.02	6.75	0	0	0	0
TireWear	0	1.06	0	1.06	0	0.23	0.01	0.24	0	0.47	0	0.47	0	0	0	0
BrakeWr	0.01	2.84	0	2.85	0.01	0.61	0.02	0.64	0	1.27	0	1.27	0	0	0	0
Total	0.04	10.14	0.08	10.26	0.03	2.46	0.21	2.7	0.02	8.45	0.03	8.49	0	0	0	0
Lead	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOx	0.01	2.01	0	2.03	0.01	0.53	0.01	0.55	0	1.12	0	1.13	0	0	0	0
Fuel Consumption (000 gallons)																
Gasoline	89.9	21491.62	0	21581.53	68.1	5702.74	0	5770.84	40.19	11998.26	0	12038.46	0	0	0	0
Diesel	0	0	22.44	22.44	0	0	128.21	128.21	0	0	10.52	10.52	0	0	0	0

LHDT1-NCAT	LHDT1-CAT	LHDT1-DSL	LHDT1-TOT	LHDT2-NCAT	LHDT2-CAT	LHDT2-DSL	LHDT2-TOT	MHDT-NCAT	MHDT-CAT	MHDT-DSL	MHDT-TOT	HHDT-NCAT	HHDT-CAT	HHDT-DSL	HHDT-TOT	OBUS-NCAT	OBUS-CAT	OBUS-DSL
0	0	0	0	0	0	0	0	0	0	0	0	841	8598	232401	241840	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	11	810	41224	42044	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	38399	392653	1176070	1607120	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0.19	2.38	42.95	45.53	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.39	5.39	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0.82	1.87	0	2.69	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	1.01	4.26	48.34	53.61	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0.02	0.02	0	0.04	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0.25	0.29	0	0.54	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	1.28	4.57	48.34	54.19	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	6.92	37.83	152.92	197.68	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	20.49	20.49	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	11.94	27.31	0	39.25	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	18.86	65.14	173.41	257.41	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0.26	9.24	487.03	496.53	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	49.37	49.37	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0.18	3.31	0	3.49	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0.44	12.55	536.4	549.39	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.54	83.07	83.62	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.84	2.84	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.02	0	0.02	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0.02	0.56	85.91	86.49	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	19.14	19.16	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.54	0.54	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	19.68	19.69	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.41	0.41	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.55	0.56	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0.03	20.64	20.67	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0.01	0.82	0.83	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	4.94	69.07	0	74.02	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	7732.27	7732.27	0	0	0

OBUS-TOT	SBUS-NCAT	SBUS-CAT	SBUS-DSL	SBUS-TOT	UB-NCAT	UB-CAT	UB-DSL	UB-TOT	MH-NCAT	MH-CAT	MH-DSL	MH-TOT	MCY-NCAT	MCY-CAT	MCY-DSL	MCY-TOT	ALL-TOT
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23570000
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	846140
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	147290000
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	127.96
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.39
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70.17
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	203.52
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17.17
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29.34
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97.68
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11.01
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	358.71
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2157.35
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20.49
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	823.63
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3001.46
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	700.1
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49.37
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59.32
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	808.78
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	452.78
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.84
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12.68
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	468.3
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.75
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.54
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.33
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34.61
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.18
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.33
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42.12
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.54
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39464.84
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7893.43

Attachment SOCIO-1
Construction Personnel by Month

TABLE 5.10-16R2

Construction Personnel by Month

Month	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
PROJECT SITE															
Craft Day-shift															
Boilermaker	0	0	4	5	7	9	11	11	11	14	28	34	47	55	66
Carpenter	1	3	8	17	31	52	59	70	82	97	89	93	90	85	81
Cement Finisher	0	3	1	2	5	7	8	10	12	14	14	14	14	13	13
Electrician	1	4	5	10	21	35	39	38	35	38	44	62	73	79	88
Iron Worker	0	0	0	10	3	13	19	27	36	50	53	61	66	70	75
Laborer	4	6	13	24	38	60	70	77	83	99	93	94	86	83	83
Millwright	0	0	0	3	5	1	1	1	0	2	20	28	44	52	57
Equipment Operator	1	4	8	13	24	35	41	43	46	53	54	55	53	55	58
Pipefitter	0	0	11	18	34	43	48	53	59	70	81	92	108	123	146
Teamster	1	3	3	4	7	10	13	14	14	17	18	19	18	18	19
Craft-Day-Shift Subtotal	**8**	**23**	**53**	**106**	**175**	**265**	**309**	**344**	**378**	**454**	**494**	**552**	**599**	**633**	**686**
Non-craft-Day-shift															
Subcontractors	16	32	40	80	96	96	104	104	112	120	120	120	120	120	160
Owner + Others (non-manual)	14	14	28	33	49	66	68	73	78	95	103	107	108	108	109
Startup (non-manual) Labor	0	0	0	0	0	0	2	2	3	4	5	4	4	4	4
Compliance Support	80	80	30	30	30	30	30	30	30	30	30	30	30	80	80
Transmission Line	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gas Line	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Linear Compliance Support	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-craft Day-shift Subtotal	**110**	**126**	**98**	**143**	**175**	**192**	**204**	**209**	**223**	**249**	**258**	**261**	**262**	**312**	**353**
TOTAL DAY SHIFT	**118**	**149**	**151**	**249**	**350**	**457**	**513**	**553**	**601**	**703**	**752**	**813**	**861**	**945**	**1,039**

TABLE 5.10-16R2
Construction Personnel by Month

Month	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Craft Swing-shift															
Boilermaker	0	0	0	2	2	2	3	3	3	4	9	11	15	18	23
Carpenter	1	1	4	7	9	14	17	21	25	33	32	34	33	32	32
Cement Finisher	0	1	1	1	1	2	2	3	3	4	4	4	4	5	4
Electrician	0	1	2	5	9	15	17	18	17	19	22	28	32	35	38
Iron Worker	0	0	0	5	20	23	26	28	34	36	38	42	44	46	48
Instrument Tech	0	0	0	0	12	12	12	12	12	12	12	12	12	12	12
Laborer	2	5	6	8	3	12	17	19	22	28	28	30	28	28	28
Millwright	0	0	0	1	9	10	10	10	10	11	17	19	25	27	29
Equipment Operator	0	2	3	6	6	11	14	15	16	20	20	22	22	22	24
Pipefitter	0	0	6	9	2	9	11	14	16	22	24	29	36	41	50
Teamster	0	0	1	2	2	3	4	4	4	6	6	6	6	6	6
Craft Swing-shift Subtotal	**3**	**10**	**23**	**46**	**75**	**113**	**133**	**147**	**162**	**195**	**212**	**237**	**257**	**272**	**294**
Non-Craft Swing Shift															
Subcontractors	4	8	10	20	24	24	26	26	28	30	30	30	30	30	40
Owner + Others (Non-manual)	3	4	7	8	12	16	17	18	20	24	26	27	27	27	27
Startup Non-manual Labor	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Non-Craft Swing Shift Subtotal	7	12	17	28	36	40	43	45	49	55	57	58	58	58	68
TOTAL SWING SHIFT	**10**	**22**	**40**	**74**	**111**	**153**	**176**	**192**	**211**	**250**	**269**	**295**	**315**	**330**	**362**
SUBTOTAL ONSITE	**128**	**171**	**191**	**323**	**461**	**610**	**689**	**745**	**812**	**953**	**1,021**	**1,108**	**1,176**	**1,275**	**1,401**
OFFSITE LINEARS*															
Transmission Line	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Gas Line	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Linear Compliance Support	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OFFSITE LINEAR SUBTOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
TOTAL WORKFORCE	**128**	**171**	**191**	**323**	**461**	**610**	**689**	**745**	**812**	**953**	**1,021**	**1,108**	**1,176**	**1,275**	**1,406**

*Workforce for linears was included for use in determining cumulative impacts.

TABLE 5.10-16R1
Construction Personnel by Month (Continued)

Month	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	TOTAL
PROJECT SITE																
Craft Day-shift																
Boilermaker	87	114	144	169	192	198	186	158	131	102	76	55	39	31	27	2,011
Carpenter	76	72	65	55	52	46	37	34	29	24	18	14	11	9	8	1,408
Cement Finisher	11	10	9	7	7	6	5	4	4	3	2	1	1	1	1	202
Electrician	110	141	180	217	255	259	249	228	198	165	123	97	79	62	53	2,988
Iron Worker	80	84	85	79	75	67	54	55	44	34	25	18	14	11	11	1,219
Laborer	84	84	80	67	59	51	43	44	37	31	22	19	16	14	13	1,577
Millwright	66	76	84	90	95	105	101	92	78	64	50	36	31	27	27	1,236
Equipment Operator	64	70	74	73	71	67	60	54	45	36	27	20	17	14	13	1,248
Pipefitter	186	234	282	326	368	375	352	305	256	208	152	114	91	69	61	4,265
Teamster	20	21	21	20	18	17	15	12	10	8	6	5	4	4	4	363
Craft Day-shift Subtotal	**784**	**906**	**1,024**	**1,103**	**1,192**	**1,191**	**1,102**	**986**	**832**	**675**	**501**	**379**	**303**	**242**	**218**	**16,517**
Non-craft Day-shift																
Subcontractors	168	184	200	240	280	280	240	200	168	160	120	104	96	80	40	4,000
Owner + Others (NM)	112	112	112	112	111	111	111	98	97	94	67	58	46	36	28	2,358
Startup NM labor	4	4	5	6	6	6	6	6	6	5	5	5	5	3	3	107
Compliance Support	30	30	20	20	20	10	10	5	5	5	5	5	5	5	5	830
Transmission Line	0	0	0	0	37	37	0	0	0	0	0	0	0	0	0	74
Gas Line	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	30
Linear Compliance	0	0	0	0	6	3	0	0	0	0	0	0	0	0	0	9
Non-Craft Day-shift Subtotal	**314**	**330**	**337**	**378**	**490**	**447**	**367**	**309**	**276**	**264**	**197**	**172**	**152**	**124**	**76**	**7,408**
TOTAL DAY SHIFT	**1,098**	**1,236**	**1,361**	**1,481**	**1,682**	**1,638**	**1,469**	**1,295**	**1,108**	**939**	**698**	**551**	**455**	**366**	**294**	**23,925**

TABLE 5.10-16R1
Construction Personnel by Month (Continued)

Month	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	TOTAL
Craft Swing Shift																
Boilermaker	31	41	53	63	72	75	70	68	56	44	32	23	17	13	12	**765**
Carpenter	31	30	28	24	23	21	18	15	12	10	7	6	5	4	4	**533**
Cement Finisher	4	4	4	3	2	2	2	2	1	1	1	1	1	1	1	**69**
Electrician	46	59	75	89	104	106	101	98	85	70	53	41	34	26	23	**1,268**
Iron Worker	50	53	53	51	51	48	42	24	19	15	10	7	6	5	4	**828**
Instrument Tech	12	12	12	12	12	12	12	0	0	0	0	0	0	0	0	**216**
Laborer	29	31	29	25	23	19	16	19	16	13	10	8	7	6	6	**521**
Millwright	33	37	41	44	46	50	48	39	33	28	22	16	13	12	12	**652**
Equipment Operator	27	30	32	31	31	29	27	23	19	16	11	9	7	6	5	**506**
Pipefitter	66	84	104	123	140	142	131	129	111	89	66	49	38	30	25	**1,596**
Teamster	7	7	8	7	7	6	5	5	4	3	2	2	2	1	1	**123**
Craft Swing-shift Subtotal	**336**	**388**	**439**	**472**	**511**	**510**	**472**	**422**	**356**	**289**	**214**	**162**	**130**	**104**	**93**	**7,077**
Non-craft Swing-shift																
Subcontractors	42	46	50	60	70	70	60	50	42	40	30	26	24	20	10	**1,000**
Owner + Others (NM)	28	28	28	28	28	28	28	25	24	24	17	14	11	9	7	**590**
Startup NM Labor	1	1	1	2	2	2	2	2	1	1	1	1	1	1	1	**28**
Non-Craft Swing Shift Subtotal	71	75	79	90	100	100	90	77	67	65	48	41	36	30	18	**1,618**
TOTAL SWING SHIFT	**407**	**463**	**518**	**562**	**611**	**610**	**562**	**499**	**423**	**354**	**262**	**203**	**166**	**134**	**111**	**8,695**
SUBTOTAL ONSITE	**1,505**	**1,699**	**1,879**	**2,043**	**2,293**	**2,248**	**2,031**	**1,794**	**1,531**	**1,293**	**960**	**754**	**621**	**500**	**405**	**32,620**

TABLE 5.10-16R1
Construction Personnel by Month (Continued)

Month	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	TOTAL
OFFSITE LINEARS*																
Transmission Line	3	3	15	36	39	29	10	10	6	0	5	0	0	0	0	159
Gas Line	2	21	21	21	21	21	0	0	0	0	0	0	0	0	0	109
Linear Compliance Support	0	6	6	6	6	7	4	4	4	0	2	0	0	0	0	45
OFFSITE LINEARS SUBTOTAL	**5**	**30**	**42**	**63**	**66**	**57**	**14**	**14**	**10**	**0**	**7**	**0**	**0**	**0**	**0**	**313**
TOTAL WORKFORCE	**1,510**	**1,729**	**1,921**	**2,106**	**2,359**	**2,305**	**2,045**	**1,808**	**1,541**	**1,293**	**967**	**754**	**621**	**500**	**405**	**32,933**

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE HIDDEN HILLS SOLAR ELECTRIC GENERATING SYSTEM

Docket No. 11-AFC-02

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(Revised 9/20/12)

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DECLARATION OF SERVICE

I, John L. Carrier, declare that on October 1, 2012, I served and filed copies of the attached HHSEGS Updated Workforce Analysis, dated October 1, 2012. This document is accompanied by the most recent Proof of Service list, located on the web page for this project at: www.energy.ca.gov/sitingcases/hiddenhills/index.html.

The document has been sent to the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

(*Check all that Apply*)

For service to all other parties:

__X__ Served electronically to all e-mail addresses on the Proof of Service list;

____ Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses marked *"hard copy required" or where no e-mail address is provided.

AND

For filing with the Docket Unit at the Energy Commission:

__X__ by sending an electronic copy to the e-mail address below (preferred method); *OR*

____ by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION – DOCKET UNIT
Attn: Docket No. 11-AFC-02
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.ca.gov

OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:

____ Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

California Energy Commission
Michael J. Levy, Chief Counsel
1516 Ninth Street MS-14
Sacramento, CA 95814
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I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

John L. Carrier, CH2M HILL