

# **KERN-INYO-MONO COUNTIES LABOR FORCE ANALYSIS**

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Prepared for:

**EMPLOYER TRAINING RESOURCE  
WORKFORCE INVESTMENT BOARD**

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# INTRODUCTION AND SUMMARY

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## INTRODUCTION

This report presents information on growing industry clusters in the Employer Training Resource WIB and related business demand for selected occupational skills. The report describes characteristics of the labor force and in particular focuses on the skills and employment needs of key population segments such as unemployed and underemployed workers, veterans, the disabled and workers in major ethnic groups.

The industry cluster analysis updates the recent work completed by the CSU Fresno Office of Community and Economic Development, in the report, "San Joaquin Valley Regional Industry Cluster Analysis and Action Plan," published in September 2012. In that report, six major industry clusters were identified and evaluated, including:

- Agriculture
- Energy
- Logistics
- Health Care
- Manufacturing
- Water Technology

The present report updates the analysis of the cluster beyond 2010 and provides projection of job growth and occupational demand to the year 2017, based on data provided by Employment Management Systems Inc. (EMSI).

In addition, the report provides a detailed demographic analysis of the workforce using the Public Use Microdata Series (PUMS) data, which permits cross-tabulations of survey data collected through the American Community Survey (ACS). The resulting analysis is consistent with published ACS population totals for the Employer Training Resource WIB, but provides greater detail on the employment status and skills levels of selected demographic groups.

## SUMMARY

**Economic Conditions.** The unemployment rate had improved to 4.5% in Mono and Inyo counties and dropped close to 8% in Kern County just prior to the recession in 2006. However, as the recession continued, the unemployment rate reached a high of 10.0% by 2010 in Mono County and 15.9% in Kern County. It has since declined to a 2012 annual average level of 9.4% in Mono and 13.3% in Kern. In Inyo County, the unemployment rate initially peaked at 10.3% in 2010 and then briefly declined to 10.1% in 2011 but increased again to 10.5% in 2012.

**Industry Clusters.** Agriculture is the largest industry cluster in Employer Training Resource WIB, with 67,479 jobs and a concentration 3.9 times the statewide average. Agricultural jobs, except for the Processing industry, have grown over the past decade. However, EMSI projects all agriculture related jobs to grow over the next five years. For instance, Distribution grew about 23% between 2001 and 2010 and is projected to add another 5,082 jobs by 2017. Logistics is the third largest

cluster in this WIB, at 5,822 jobs with a projected further increase of about 1,400 jobs by 2017. The Water Technology cluster has seen substantial employment decline in the Employer Training Resource WIB, but retail and tourism jobs are projected to grow between 2012 and 2017.

**Labor Force Demographics and Skills.** The report documents the correlation between education and employment, with unemployment rates much higher for non-college graduates. Whites and other non-Latino groups have higher rates of college graduation.

**Under-utilized Workers.** Non-college graduates also tend to be underutilized more often in the workforce and again, Latinos have lower full time utilization rates (53.0 percent) than do whites (58.5 percent). In terms of unemployment rates by industry, a key economic driver for the region – mining, oil, and gas (NAICS 21) – exhibited a low unemployment rate of 7 percent, about half of the region-wide 14.4 unemployment rate. In 2011 agriculture had a 17 percent unemployment rate, but a number of industries also had higher rates than the county average, including residential development related sectors such as construction and real estate. These industries were particularly affected by the recession but lodging and restaurants are projected to recover employment more quickly than most of these other industry sectors.

**Veterans.** Based on the most recent ACS data, there are about 25,754 veterans in the labor force in the region, representing about 6.8 percent of the labor force. It is estimated that 10 percent of veterans were unemployed in 2011, compared to 14.5 percent for the non-veterans labor force. Among the unemployed veterans, the largest group is in the 35-54 age group, particularly those who did not graduate high school (46.3 percent unemployed).

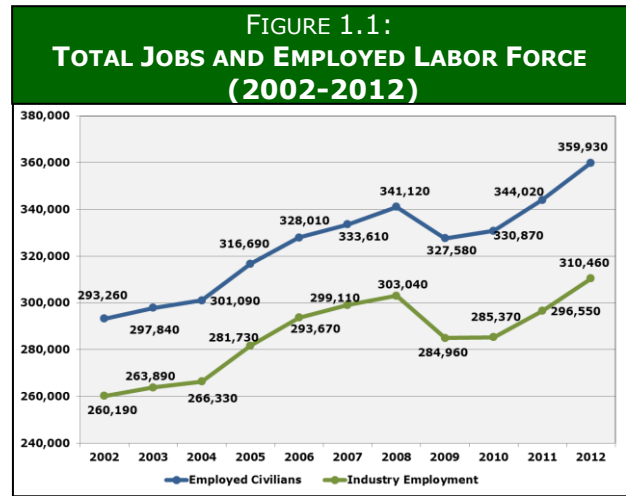
**Disabled Workers.** There are an estimated 26,138 disabled workers in the labor force, comprising 6.9 percent of all workers in the County. The unemployment rate for disabled workers in 2011 is estimated at 19.2 percent, compared to 14.0 percent for the non-disabled labor force. Unemployment rates appear to be higher for younger disabled workers under 35 relative to those who are older than 34. Disabled workers with a Bachelor's degree or higher also experience relatively high rates of unemployment, as disabled workers in the 35-54 prime working age cohort with at least a Bachelor's exhibit a 20.3 percent unemployment rate, and those in the 55-64 age cohort a 13.7 percent unemployment rate.

**Training Programs.** The report screens all of the projected growth occupations against the list of WIB-approved training vendors and identifies which occupations appear to have available training programs in the ETR region where there are gaps. The Health and Welfare – healthcare delivery sub-cluster is one of the fastest growing industry sub-clusters and, within this sub-cluster, registered nurses and radiological technicians occupations are expected to increase in number, although in the California EDD ETPL database there are no job training program specifically targeting these occupations in the three-county region. Likewise, there are a number of construction trades typically utilized in the Energy cluster (energy power generation and transmission sub-cluster) that also do not have training programs specifically targeting these growing occupations.

# 1. LOCAL ECONOMIC CONDITIONS

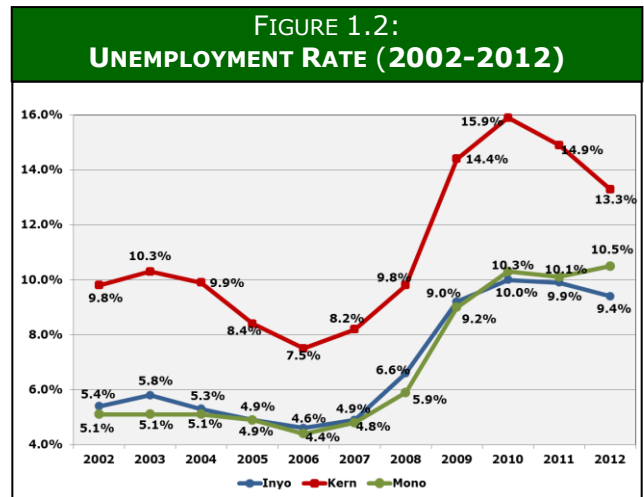
## EMPLOYMENT TRENDS

The counties of Inyo, Kern and Mono are included within the Employer Training Resource Workforce Investment Board (ETR WIB). Employment growth in the Employer Training Resource WIB was on upward trend until 2008, when it began to shrink. Between 2002 and 2008, the County added 42,850 jobs, reaching a peak of 303,040 wage and salary jobs (Figure 1.1). Job losses from the recession began to occur in 2009 when employment declined to 284,960 jobs. The employed labor force, which includes self-employed and out-commuters, followed a very similar pattern.



Source: ADE, Inc., California EDD

After the 2008 recession, employers struggled to add new jobs and finally after two rough years in 2009 and 2010 improved the economy with 310,460 Jobs in 2012 which is 7,420 jobs higher than the previous peak in 2008.



Source: ADE, Inc., California EDD

The county had 341,120 employed residents in 2008, but due to the recession employment dropped and 13,540 residents lost their jobs by 2009. In 2010, the unemployment rate peaked at 15.9 percent in Kern County, 10.3 in Mono County, and 10.0 percent in Inyo County (Figure 1.2). It then began to drop as employment recovered. By 2012, 359,930 residents were employed (Table 1.1).

**TABLE 1.1:  
DEMOGRAPHIC AND LABOR FORCE TRENDS**

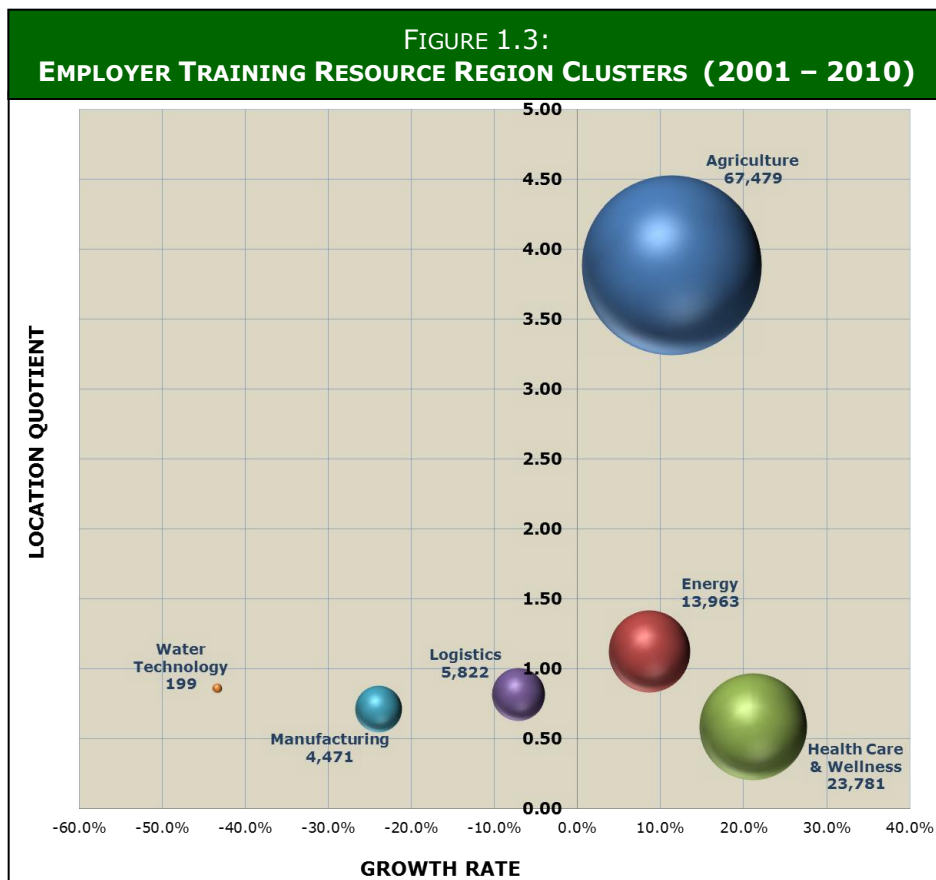
	2002	2012	2000-2012
Population estimates	728,302	888,417	22.0%
Labor Force	324,270	414,380	27.8%
Employed Labor Force	293,260	359,930	22.7%
Wage and Salary Jobs	260,190	310,460	19.3%

Source: ADE, Inc., Department of Finance, California Economic Development Department

According to the State Department of Finance (DOF) and the Employment Development Department (EDD), both population and labor force (16 years and older) had a steady increase from 2000 to 2012. Population increased by 22 percent between 2002 and 2012; labor force had a steeper growth rate of 27.8 percent. However the percentage of residents who found employment between 2000 and 2012 increased by only 22.7 percent. Additionally, compared to labor force, jobs had a slower growth rate of 19.3 percent from 2002 (Table 1.1).

The number of wage and salary jobs is almost 25 percent below the size of the labor force in Employer Training Resource WIB (Table 1.1). Some of this difference would be due to self-employment, but it is also clear there is a large out-commute of workers from the County to employment centers in Southern California.

Agriculture is the largest cluster with 67,479 employees (Figure 1.3). The Health and Wellness cluster with 23,781 employees and the Energy with 13,963 employees are the second and third large industries in the Employee Training Resource WIB. Water Technology is the smallest industry with 199 employees. Logistics and manufacturing clusters have 5,822 and 4,471 employees, respectively. Energy and Health Care clusters have shown the highest growth rate over the past ten years. Agriculture also shows a positive growth rate through 2010. Logistics, Manufacturing, and Water Technology, on the other hand declined within the last decade. Agriculture is not only the largest industry but also the highest concentrated job sector, while Health and Wellness and Manufacturing are the least concentrated job sectors (see Appendix A for industry cluster definitions by NAICS code).



Source: IMPLAN CEW

## 2. KEY DEMOGRAPHIC GROUPS

This chapter provides data on the educational levels and employment status for key demographic groups in the population. Data comes from the US Census' American Community Survey ("ACS") one-year sample for years 2009, 2010, and 2011, the most-current data available at the time of this analysis.

### EDUCATIONAL ATTAINMENT BY RACE/ETHNIC AND AGE CATEGORY

ACS estimates that there are 379,641 persons who are 16 years and older and in the ETR WIB's region's labor force, with 163,534 in the 35 to 54 prime working age category).<sup>1</sup> Of the 163,534, 71,260 (or 43.5 percent) are White, 73,010 (44.6 percent) are Latino, and 19,264 (11.8 percent) are some other race (e.g. Black, Asian-Pacific Islander, Other, and/or Two or More). Of the 71,260 persons who are White, 16,989 (23.8 percent) earned at least a Bachelor's degree. In comparison, 5.7 percent of all prime working-age Latino adults in the labor force earned at least a Bachelor's, or 4,166 out of 73,010. For persons in the Other category, an estimated 4,926 (25.6 percent) prime working age adults out of a labor force of 19,264 earned at least a Bachelor's degree.

TABLE 2.1:

**LABOR FORCE BY RACE/ETHNICITY, AGE AND EDUCATIONAL ATTAINMENT: KERN-INYO-MONO (2009-2011)  
ALL PERSONS 16 IN KERN-INYO-MONO -- IN LABOR FORCE**

	16 - 19	20 - 29	30 - 34	35 - 54	55 - 64	65 & over	Kern-Inyo-Mono
	<b>19,592</b>	<b>91,794</b>	<b>43,576</b>	<b>163,534</b>	<b>48,416</b>	<b>12,730</b>	<b>379,641</b>
<b>01 White</b>	<b>6,408</b>	<b>32,260</b>	<b>15,837</b>	<b>71,260</b>	<b>29,376</b>	<b>8,769</b>	<b>163,910</b>
Did not earn HS dipl/GED or degree: not in school	196	2,550	727	5,160	1,218	669	10,520
High school graduate (includes equivalency)	2,832	9,466	4,176	19,826	6,329	2,499	45,129
Some college - no degree & not attending	227	8,782	4,427	20,824	10,011	2,441	46,712
Associates degree/still attending college	1,780	6,242	2,162	8,397	3,872	703	23,157
Bachelor's degree or higher	0	4,967	4,272	16,989	7,925	2,457	36,610
NA	1,373	253	73	63	22	0	1,783
<b>02 Latino</b>	<b>11,355</b>	<b>49,904</b>	<b>22,923</b>	<b>73,010</b>	<b>12,971</b>	<b>2,658</b>	<b>172,821</b>
Did not earn HS dipl/GED or degree: not in school	1,635	12,683	8,522	34,768	7,582	1,455	66,646
High school graduate (includes equivalency)	3,920	17,312	6,240	18,907	2,588	499	49,465
Some college - no degree & not attending	543	9,067	4,093	10,346	1,306	400	25,755
Associates degree/still attending college	2,226	8,020	2,576	4,638	810	79	18,348
Bachelor's degree or higher	0	2,731	1,467	4,166	664	225	9,254
NA	3,031	90	26	186	22	0	3,354

<sup>1</sup>As noted in Table 1.1, EDD estimates a higher labor force figure of 414,300 in 2012. We use the ACS figure in this chapter in order to present the demographic characteristics that are not available from EDD. For a detailed difference in methodology for estimating labor force between the US ACS and US Census CPS (on which California EDD's findings are based), go to [//www.bls.gov/lau/acsqa.htm#Q08](http://www.bls.gov/lau/acsqa.htm#Q08) and [//www.bls.gov/lau/acsqa.htm#Q09](http://www.bls.gov/lau/acsqa.htm#Q09). It is also important to note that while the US Census CPS is the federal government's official survey for purposes of tracking monthly and annual unemployment, the US ACS is based on a significantly larger sample of survey respondents.

TABLE 2.1: TABLE 2.1: *CONTINUED*

	16 - 19	20 - 29	30 - 34	35 - 54	55 - 64	65 & over	Kern-Inyo-Mono
<b>03 Other</b>	<b>1,829</b>	<b>9,630</b>	<b>4,816</b>	<b>19,264</b>	<b>6,069</b>	<b>1,302</b>	<b>42,910</b>
Did not earn HS dipl/GED or degree: not in school	176	647	437	2,546	954	60	4,821
High school graduate (includes equivalency)	906	2,595	1,391	4,522	1,311	306	11,031
Some college - no degree & not attending	42	2,107	719	4,839	1,219	418	9,344
Associates degree/still attending college	473	2,519	856	2,400	532	36	6,816
Bachelor's degree or higher	0	1,762	1,413	4,926	2,053	482	10,636
NA	231	0	0	30	0	0	262

Source: Applied Development Economics, Inc., based on US Census PUMS One-year Sample for Years 2009, 2010, and 2011 {Data Source: Steven Ruggles, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. Integrated Public Use Microdata Series: Version 5.0 [Machine-readable database]. Minneapolis: University of Minnesota, 2010.}

The educational attainment gap between the Latinos and either the White or Other labor force is present across the various age cohorts. Starting with the 20s age cohort, we see that an estimated 2,731 out of 49,904 Latinos earned at least a Bachelor’s degree, or 5.4 percent, which is less than rates estimated for Whites (15.4 percent, or 4,967 out of 32,260) and Others (18.3 percent, or 1,762 out of 9,630) (Table 2.1). Across all age categories, approximately 22-to-24 percent of White and/or Other persons in the labor force earned at least a bachelor’s degree, versus 5.4 percent for Latinos.

The importance of a college degree becomes evident in the data presented below. While the overall annual unemployment rate for the historic downturn three-year period of 2009-2011 averaged 14 percent, for persons with at least a Bachelor’s degree, the jobless rate was significantly lower. Across all age categories, White persons in the labor force with at least a Bachelor’s experienced an unemployment rate of 4 percent, 7 percent for Latinos, and 7 percent for Others (Table 2.2). Close examination of the data below shows that while the effects of the historic downturn were felt by persons of all races, all ages, and most educational attainment categories, those most-affected by the downturn that began in late 2008 were persons who had no more than a high school diploma or GED, and persons who were in their 20s and/or early 30s, as their jobless rates hovered around and/or exceed 25 percent.



**TABLE 2.2:  
UNEMPLOYMENT RATE BY RACE/ETHNICITY, AGE AND EDUCATIONAL ATTAINMENT:  
KERN-INOY-MONO (2009-2011)  
ALL PERSONS 16 IN KERN-INOY-MONO -- IN LABOR FORCE**

	<b>16 - 19</b>	<b>20 - 29</b>	<b>30 - 34</b>	<b>35 - 54</b>	<b>55 - 64</b>	<b>65 &amp; over</b>	<b>Kern-Inyo-Mono</b>
	<b>34%</b>	<b>17%</b>	<b>14%</b>	<b>12%</b>	<b>10%</b>	<b>7%</b>	<b>14%</b>
<b>01 White</b>	<b>31%</b>	<b>17%</b>	<b>11%</b>	<b>10%</b>	<b>7%</b>	<b>5%</b>	<b>11%</b>
Did not earn HS dipl/GED or degree: not in school	54%	45%	29%	30%	12%	8%	31%
High school graduate (includes equivalency)	27%	24%	16%	13%	8%	3%	15%
Some college - no degree & not attending	0%	13%	13%	9%	8%	6%	10%
Associates degree/still attending college	27%	10%	8%	5%	7%	7%	9%
Bachelor's degree or higher	0%	4%	2%	4%	5%	4%	4%
NA	44%	18%	0%	0%	0%	0%	37%
<b>02 Latino</b>	<b>36%</b>	<b>17%</b>	<b>14%</b>	<b>14%</b>	<b>13%</b>	<b>13%</b>	<b>16%</b>
Did not earn HS dipl/GED or degree: not in school	19%	23%	15%	18%	16%	16%	18%
High school graduate (includes equivalency)	44%	16%	16%	11%	12%	0%	16%
Some college - no degree & not attending	33%	17%	15%	10%	7%	20%	14%
Associates degree/still attending college	18%	14%	10%	9%	7%	0%	12%
Bachelor's degree or higher	0%	5%	4%	10%	0%	16%	7%
NA	46%	0%	100%	0%	0%	0%	43%
<b>03 Other</b>	<b>40%</b>	<b>21%</b>	<b>29%</b>	<b>14%</b>	<b>15%</b>	<b>11%</b>	<b>18%</b>
Did not earn HS dipl/GED or degree: not in school	60%	41%	37%	24%	30%	0%	29%
High school graduate (includes equivalency)	46%	37%	46%	15%	21%	9%	27%
Some college - no degree & not attending	0%	11%	16%	17%	9%	13%	14%
Associates degree/still attending college	35%	21%	14%	13%	19%	0%	18%
Bachelor's degree or higher	0%	5%	24%	4%	6%	13%	7%
NA	23%	0%	0%	0%	0%	0%	20%

## LABOR FORCE UTILIZATION

Here, we present data illustrating to what extent, if any, the region's labor force, including those who are employed, is not being fully utilized. This discussion further underscores the importance of a college degree. Of the 379,641 persons in the regional labor force in any given year during the 2009-2011 period, 211,320 were employed full-time and all-year (i.e. 55.7 percent) (Table 2.3). On average, 69.9 percent of all prime working age persons in the labor force who are White are fully utilized (49,824 out of 71,260), versus the rate for Latinos, or 57.9 percent (42,258 out of 73,010). However, for prime-working age Latinos with a Bachelor's degree, the full utilization rate increases to 72.1 percent (3,002 out of 4,166), thus underscoring the importance of a college degree. Moreover, relative to Whites, prime working-age Latinos with at least a Bachelor's in the Kern region exhibit lower rates of labor force underutilization; almost 28 percent of all prime working age Latinos are either unemployed or under-employed, versus approximately 30 percent of prime working age Whites.

**TABLE 2.3:  
FULLY UTILIZED LABOR FORCE: FULL-TIME AND ALL-YEAR WORKERS BY RACE/ETHNICITY, AGE AND EDUCATIONAL  
ATTAINMENT: KERN-INYO-MONO (2009-2011)  
ALL PERSONS 16 IN KERN-INYO-MONO -- IN LABOR FORCE**

	<b>16 - 19</b>	<b>20 - 29</b>	<b>30 - 34</b>	<b>35 - 54</b>	<b>55 - 64</b>	<b>65 &amp; over</b>	<b>Kern-Inyo-Mono</b>
	<b>2,004</b>	<b>42,327</b>	<b>27,240</b>	<b>104,419</b>	<b>29,881</b>	<b>5,448</b>	<b>211,320</b>
<b>01 White</b>	<b>551</b>	<b>14,664</b>	<b>10,532</b>	<b>49,824</b>	<b>19,086</b>	<b>3,733</b>	<b>98,390</b>
Did not earn HS dipl/GED or degree: not in school	0	937	441	2,470	788	189	4,825
High school graduate (includes equivalency)	370	3,589	2,418	13,124	3,696	1,022	24,219
Some college - no degree & not attending	8	4,929	3,201	14,801	6,760	1,120	30,819
Associates degree/still attending college	173	2,140	1,181	6,273	2,291	239	12,297
Bachelor's degree or higher	0	3,069	3,218	13,126	5,529	1,163	26,105
NA	0	0	73	30	22	0	125
<b>02 Latino</b>	<b>1,360</b>	<b>23,325</b>	<b>14,274</b>	<b>42,258</b>	<b>7,431</b>	<b>1,014</b>	<b>89,662</b>
Did not earn HS dipl/GED or degree: not in school	348	5,244	4,633	17,289	3,788	512	31,814
High school graduate (includes equivalency)	601	9,200	4,067	12,061	1,725	303	27,957
Some college - no degree & not attending	79	4,580	2,607	6,651	826	119	14,861
Associates degree/still attending college	227	2,811	1,800	3,212	550	0	8,600
Bachelor's degree or higher	0	1,451	1,167	3,002	521	80	6,220
NA	105	39	0	43	22	0	209
<b>03 Other</b>	<b>93</b>	<b>4,338</b>	<b>2,434</b>	<b>12,337</b>	<b>3,364</b>	<b>702</b>	<b>23,268</b>
Did not earn HS dipl/GED or degree: not in school	0	94	139	1,492	421	25	2,172
High school graduate (includes equivalency)	6	932	383	2,633	724	139	4,818
Some college - no degree & not attending	42	1,229	306	3,040	811	292	5,720
Associates degree/still attending college	45	1,064	590	1,326	343	0	3,368
Bachelor's degree or higher	0	1,019	1,016	3,816	1,064	245	7,160
NA	0	0	0	30	0	0	30

Source: Applied Development Economics, Inc., based on US Census PUMS One-year Sample for Years 2009, 2010, and 2011 {Data Source: Steven Ruggles, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. Integrated Public Use Microdata Series: Version 5.0 [Machine-readable database]. Minneapolis: University of Minnesota, 2010.}

Differences in unemployment rates between persons with a college degree and those without are also more pronounced along sectoral lines. This is especially true in sectors having to do with housing. In construction (NAICS 23), the unemployment rate for persons without a degree is 21 percent, versus 9 percent for those with a degree. Real estate (NAICS 53) was also hard-hit, as the unemployment rate for persons without a degree in this sector is 17 percent versus 3 percent for those with a degree.

**TABLE 2.4:  
LABOR FORCE AND UNEMPLOYMENT TRENDS BY ECONOMIC SECTOR AND BY COLLEGE DEGREE STATUS: KERN-INYO-MONO (2009-2011)**

	Degree			No Degree			Degree or No Degree		
	Employed	Not Employed	Unemployment rate of persons w/degree	Employed	Not Employed	Unemployment rate of persons with no degree	Employed	Not Employed	Unemployment Rate
<b>Total</b>	<b>78,736</b>	<b>4,848</b>	<b>6%</b>	<b>246,401</b>	<b>49,656</b>	<b>17%</b>	<b>325,137</b>	<b>54,504</b>	<b>14%</b>
11 Ag, Forestry, etc.	2,478	288	10%	32,518	6,786	17%	34,996	7,074	17%
21 Mining, oil, gas	1,913	29	1%	11,158	1,010	8%	13,071	1,039	7%
22 Utilities	752	55	7%	2,747	237	8%	3,499	292	8%
23 Construction	2,330	229	9%	18,282	4,888	21%	20,612	5,117	20%
31 Manufacturing	807	178	18%	5,122	801	14%	5,928	979	14%
32 Manufacturing	1,233	163	12%	3,752	812	18%	4,985	975	16%
33 Manufacturing	1,427	74	5%	6,776	1,200	15%	8,204	1,274	13%
42 Wholesale	1,388	179	11%	7,342	1,082	13%	8,730	1,261	13%
44 Retail	3,325	239	7%	21,888	3,465	14%	25,213	3,704	13%
45 Retail	1,511	164	10%	8,553	2,326	21%	10,064	2,490	20%
48 Transportation/Warehousing	914	78	8%	8,413	1,510	15%	9,327	1,588	15%
49 Transportation/Warehousing	473	12	2%	2,497	571	19%	2,970	583	16%
51 Information	1,206	79	6%	2,401	319	12%	3,607	398	10%
52 Finance and Insurance	3,065	118	4%	4,933	477	9%	7,998	595	7%
53 Real Estate and Leasing	1,278	45	3%	4,331	898	17%	5,609	943	14%
54 Professional, Scientific and Technical	5,701	247	4%	6,717	1,304	16%	12,418	1,551	11%
55 Mgt. of Companies and Enterprises	63	0	0%	43	22	34%	106	22	17%
56 Administrative and Support	1,355	277	17%	9,916	2,894	23%	11,270	3,171	22%
56 Waste Management	235	0	0%	955	62	6%	1,190	62	5%
61 Education	16,307	420	3%	11,713	1,129	9%	28,020	1,550	5%
62 Health Care	12,070	364	3%	14,674	2,223	13%	26,744	2,587	9%
62 Social Assistance	2,712	99	4%	5,834	565	9%	8,546	664	7%
71 Arts, Entertainment and Rec.	1,097	220	17%	4,118	1,037	20%	5,216	1,257	19%
72 Accommodations	150	0	0%	2,231	721	24%	2,380	721	23%
72 Food Services	2,037	109	5%	18,630	2,661	12%	20,667	2,770	12%
81 Other Services	2,527	262	9%	12,932	1,492	10%	15,459	1,754	10%
92 Public Administration	10,108	560	5%	16,544	798	5%	26,653	1,358	5%
99 Unclassified/Unknown	274	361	76%	1,382	8,233	16%	1,656	8727	19%

Source: Applied Development Economics, Inc., based on US Census PUMS One-year Sample for Years 2009, 2010, and 2011 {Data Source: Steven Ruggles, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. Integrated Public Use Microdata Series: Version 5.0 [Machine-readable database]. Minneapolis: University of Minnesota, 2010.}

## VETERANS

Based on the most recent ACS data, there are about 25,754 veterans in the labor force in the Kern-Inyo-Mono region, representing about 6.8 percent of the labor force. It is estimated that 10.0 percent of veterans were unemployed in 2011, compared to 14.5 percent for the non-veterans labor force (Table 2.5). Among the unemployed veterans, the largest group is in the 35-54 age group with no high school diploma (46.3 percent unemployed).

TABLE 2.5:

**UNEMPLOYED PERSONS AND UNEMPLOYMENT RATES OF ALL PERSONS 16 AND OVER BY VETERAN STATUS AND EDUCATIONAL ATTAINMENT IN KERN-INYO-MONO PERSONS IN THE LABOR FORCE AND NOT EMPLOYED (US CENSUS ACS 3-YEAR 2009-2011)**

	16 - 19	20 - 29	30 - 34	35 - 54	55 - 64	65 & over	Kern-Inyo-Mono
<b>Total Number of Unemployed Persons</b>	<b>6,756</b>	<b>15,980</b>	<b>6,297</b>	<b>19,889</b>	<b>4,677</b>	<b>904</b>	<b>54,504</b>
<b>Unemployment Rates</b>	<b>34.5%</b>	<b>17.4%</b>	<b>14.5%</b>	<b>12.2%</b>	<b>9.7%</b>	<b>7.1%</b>	<b>14.4%</b>
<b>01 Not a Veteran</b>							
<b>Number of Unemployed Persons Who Are Not Veterans</b>	<b>5,806</b>	<b>15,502</b>	<b>6,014</b>	<b>18,794</b>	<b>3,999</b>	<b>860</b>	<b>50,976</b>
<b>Unemployment Rates for Persons Who Are Not Veterans</b>	<b>32.3%</b>	<b>17.4%</b>	<b>14.5%</b>	<b>12.3%</b>	<b>9.7%</b>	<b>9.1%</b>	<b>14.5%</b>
Did not earn HS dipl/GED or degree: not in school	24.6%	27.2%	16.9%	19.3%	17.6%	16.1%	20.4%
High school graduate (includes equivalency)	39.3%	19.7%	19.3%	12.6%	10.2%	4.3%	17.0%
Some college -- no degree and not attending	22.1%	15.2%	14.2%	11.0%	7.1%	12.8%	12.1%
Associates degree/still attending college	23.3%	13.8%	9.3%	6.3%	7.3%	7.4%	11.3%
Bachelor's degree or higher	---	4.7%	7.1%	5.1%	5.0%	5.3%	5.3%
NA	36.0%	13.4%	26.1%	0.0%	0.0%	---	30.7%
<b>02 Veterans</b>							
<b>Number of Unemployed Persons Who Are Veterans</b>	<b>0</b>	<b>478</b>	<b>283</b>	<b>1,096</b>	<b>679</b>	<b>49</b>	<b>2,584</b>
<b>Unemployment Rates for Persons Who Are Veterans</b>	<b>---</b>	<b>18.6%</b>	<b>14.0%</b>	<b>10.4%</b>	<b>9.3%</b>	<b>1.5%</b>	<b>10.0%</b>
Did not earn HS dipl/GED or degree: not in school	---	0.0%	0.0%	46.3%	8.2%	0.0%	20.6%
High school graduate (includes equivalency)	---	41.8%	21.3%	14.2%	13.6%	0.0%	16.9%
Some college -- no degree and not attending	---	10.4%	8.9%	4.1%	7.8%	0.1%	5.6%
Associates degree/still attending college	---	6.2%	16.5%	14.9%	11.5%	0.0%	12.4%
Bachelor's degree or higher	---	0.0%	-0.3%	4.2%	6.5%	4.6%	4.6%
NA	---	---	---	---	---	---	---

Source: Applied Development Economics, Inc., based on US Census PUMS One-year Sample for Years 2009, 2010, and 2011 {Data Source: Steven Ruggles, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. Integrated Public Use Microdata Series: Version 5.0 [Machine-readable database]. Minneapolis: University of Minnesota, 2010.}

## DISABLED WORKERS

There are an estimated 26,138 disabled persons in the labor force, comprising 6.9 percent of all workers in the region. The unemployment rate for disabled workers in 2011 is estimated at 19.2 percent, compared to 14.0 percent for the non-disabled labor force (Table 2.6). Unemployment rates appear to be higher for younger disabled workers under 34 relative to those who are older than 35. Disabled workers with a Bachelor's degree or higher also experience relatively high rates of unemployment, as disabled workers in the 35-54 prime working age cohort with at least a Bachelor's exhibit a 20.3 percent unemployment rate, and those in the 55-64 age cohort a 13.7 percent unemployment rate.

TABLE 2.6:

**NUMBER OF UNEMPLOYED PERSONS AND UNEMPLOYMENT RATES OF ALL PERSONS 16 AND OVER BY DISABILITY STATUS AND EDUCATIONAL ATTAINMENT IN KERN-INYO-MONO COUNTY PERSONS IN THE LABOR FORCE AND NOT EMPLOYED (US CENSUS ACS 3-YEAR 2009-2011)**

	16 - 19	20 - 29	30 - 34	35 - 54	55 - 64	65 & over	Kern-Inyo-Mono
<b>Total Number of Unemployed Persons</b>	<b>6,756</b>	<b>15,980</b>	<b>6,297</b>	<b>19,889</b>	<b>4,677</b>	<b>904</b>	<b>54,504</b>
<b>Unemployment Rates</b>	<b>34.5%</b>	<b>17.4%</b>	<b>14.5%</b>	<b>12.2%</b>	<b>9.7%</b>	<b>7.1%</b>	<b>14.4%</b>
<b>01 No Known Disability</b>							
<b>Number of Unemployed Persons w/No Known Disability</b>	<b>6,455</b>	<b>14,714</b>	<b>5,808</b>	<b>17,879</b>	<b>3,830</b>	<b>792</b>	<b>49,477</b>
<b>Unemployment Rates for Persons w/No Known Disability</b>	<b>33.7%</b>	<b>16.8%</b>	<b>13.8%</b>	<b>11.7%</b>	<b>9.2%</b>	<b>7.6%</b>	<b>14.0%</b>
Did not earn HS dipl/GED or degree: not in school	22.4%	25.6%	16.8%	19.1%	17.3%	17.0%	20.0%
High school graduate (includes equivalency)	38.3%	19.6%	17.5%	12.3%	10.3%	2.6%	16.5%
Some college -- no degree and not attending	22.1%	14.7%	14.0%	9.5%	6.1%	9.7%	11.0%
Associates degree/still attending college	23.4%	13.1%	9.2%	7.3%	8.9%	4.5%	11.3%
Bachelor's degree or higher	---	4.8%	7.0%	4.9%	5.3%	5.3%	5.2%
<b>02 At Least One Disability</b>							
<b>Number of Unemployed Persons w/at Least One Disability</b>	<b>301</b>	<b>1,267</b>	<b>490</b>	<b>2,011</b>	<b>847</b>	<b>113</b>	<b>5,028</b>
<b>Unemployment Rates for Persons w/at Least One Disability</b>							
Did not earn HS dipl/GED or degree: not in school	<b>66.5%</b>	<b>30.2%</b>	<b>33.5%</b>	<b>18.7%</b>	<b>12.3%</b>	<b>4.8%</b>	<b>19.2%</b>
High school graduate (includes equivalency)							
Some college -- no degree and not attending	69.6%	52.4%	19.4%	24.9%	17.8%	3.1%	25.1%
Associates degree/still attending college	67.6%	33.2%	54.3%	16.9%	13.3%	6.0%	22.7%
Bachelor's degree or higher	---	21.3%	9.3%	20.3%	13.7%	4.7%	16.6%
NA	0.0%	27.0%	45.6%	8.1%	0.0%	7.3%	12.5%

Source: Applied Development Economics, Inc., based on US Census PUMS One-year Sample for Years 2009, 2010, and 2011 {Data Source: Steven Ruggles, J. Trent Alexander, Katie Genadek, Ronald Goeken, Matthew B. Schroeder, and Matthew Sobek. Integrated Public Use Microdata Series: Version 5.0 [Machine-readable database]. Minneapolis: University of Minnesota, 2010.}

# 3. EMPLOYMENT AND OCCUPATION PROJECTIONS

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This section of the report provides the employment projections by cluster for the 2012 to 2017 period, as well as the related occupational demand by employers. The employment and occupational projections have been prepared by EMSI. The industry cluster definitions follow the Regional San Joaquin Valley analysis completed in 2012 (see Appendix B).<sup>2</sup>

- Agriculture
- Energy
- Health and Wellness
- Logistics
- Manufacturing
- Water Technology

The value of industry clusters is that they generally represent the economic base of the region, in which products and services are exported out of the county and draw income into the county. In this way, they create worker incomes that then support local serving industries such as retail and services businesses, which may also see employment growth. In the case of health and wellness, this cluster is not an export sector, but it is a growing industry with many high paid jobs and warrants attention on that basis.

## EMPLOYMENT PROJECTIONS

The Employer Training Resource WIB had a job total of 282,645 in 2010 (Table 3.1). The total number of jobs is estimated to have increased by 26,021 between 2010 and 2012 and EMSI projects an additional 35,144 new jobs during the 2012 to 2017 projection period, with the total employment count reaching 343,810 by 2017 (Table 3.1). While Table 3.1 shows employment levels by major NAICS category, the remaining tables in this section show employment by cluster, which combines industries based on their market relationships.

- Agriculture and Health and Wellness are the two clusters in ETR WIB with a considerable projected employment growth between 2012 and 2017.
- The Agriculture cluster had 77,251 employees by 2012 and EMSI forecasts an additional 8,886 workers by the end of the projection period in 2017 (Tables 3.2, 3.3, 3.4, 3.5).
- Combined with Social Assistance, Health Care Delivery is projected to add about 5,000 jobs by 2017 (Table 3.1). However, within the Health and Wellness cluster itself, there were 23,000 employees in total by 2012 and EMSI foresees an additional 4,382 workers by the end of the projection period in 2017 (Table 3.7).

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<sup>2</sup> Applied Development Economics. *San Joaquin Valley Regional Industry Cluster Analysis and Action Plan*. CSU Fresno Office of Community and Economic Development. September 2012.

- The Energy cluster with 3,158 new jobs is the third largest growing cluster (Table 3.6). Power Generation and Transmission is the top sub-cluster with a projected 2,476 new workers or close to 80 percent of the growth in this cluster.
- Other diversified manufacturing is projected to add 828 net new jobs (Table 3.9)
- Non-cluster related employment with projected gains include retail, government, construction and tourism (accommodations, food services, arts and entertainment) (Table 3.1).

<b>TABLE 3.1: EMPLOYMENT PROJECTIONS BY MAJOR INDUSTRIES, EMPLOYEE TRAINING RESOURCE WIB</b>						
<b>NAICS Code</b>	<b>Description</b>	<b>2010 Jobs</b>	<b>2012 Jobs</b>	<b>2017 Jobs</b>	<b>Change</b>	<b>% Change</b>
62	Health Care and Social Assistance	24,500	26,544	31,743	5,199	19.6%
11	Agriculture, Forestry, Fishing and Hunting	44,323	54,560	59,039	4,479	8.2%
44	Retail Trade	27,443	29,088	32,679	3,591	12.3%
90	Government	61,884	60,086	63,472	3,386	5.6%
23	Construction	12,665	17,004	20,214	3,210	18.9%
72	Accommodation and Food Services	22,534	23,265	25,938	2,673	11.5%
56	Administrative and Support and Waste Management and Remediation Services	11,294	12,751	15,224	2,473	19.4%
42	Wholesale Trade	7,932	8,458	10,626	2,168	25.6%
54	Professional, Scientific, and Technical Services	10,980	11,611	13,491	1,880	16.2%
31	Manufacturing	13,183	13,693	15,524	1,831	13.4%
48	Transportation and Warehousing	6,571	7,284	8,547	1,263	17.3%
21	Mining, Quarrying, and Oil and Gas Extraction	9,587	12,766	13,699	933	7.3%
81	Other Services (except Public Administration)	9,235	9,660	10,455	795	8.2%
61	Educational Services (Private)	1,391	1,696	2,124	428	25.2%
53	Real Estate and Rental and Leasing	3,421	3,582	3,958	376	10.5%
52	Finance and Insurance	5,255	5,645	5,990	345	6.1%
51	Information	2,798	2,781	3,052	271	9.7%
71	Arts, Entertainment, and Recreation	2,558	2,571	2,671	100	3.9%
99	Unclassified Industry	385	637	732	95	14.9%
22	Utilities	1,663	1,571	1,469	(102)	(6.5%)
55	Management of Companies and Enterprises	3,043	3,413	3,163	(250)	(7.3%)
<b>TOTAL</b>		<b>282,645</b>	<b>308,666</b>	<b>343,810</b>	<b>35,144</b>	<b>11.4%</b>

Source: EMSI 2013.2 Class of Worker Dataset QCEW Employees

## AGRICULTURE CLUSTER

Agriculture oriented jobs include activities such as farm production, food processing, distribution, and support services. We have grouped the agriculture related industries into these four categories, or sub-clusters, based on the significant role they play in the agriculture economy.

Food and farm product-related wholesale trade activities, transportation services, and warehousing jobs are grouped as Distribution. Retail related jobs in grocery and supermarkets establishments are also part of the Distribution group. The Distribution sub-cluster will add net 1,137 new positions by 2017 with a 14 percent growth rate. In this group, EMSI reports that supermarkets and other grocery (except convenience) stores (NAICS 445110) are expected to increase employment by 667 jobs. Fresh fruit and vegetable merchant wholesalers (NAICS 424480) will have a positive change of 210 new jobs in their employment trends (Table 3.2).

<b>NAICS Code</b>	<b>Description</b>	<b>2010 Jobs</b>	<b>2012 Jobs</b>	<b>2017 Jobs</b>	<b>Change</b>	<b>% Change</b>
445110	Supermarkets and Other Grocery (except Convenience) Stores	5,165	5,403	6,070	667	12%
424480	Fresh Fruit and Vegetable Merchant Wholesalers	1,047	505	715	210	42%
493120	Refrigerated Warehousing and Storage	191	206	325	119	58%
424910	Farm Supplies Merchant Wholesalers	397	424	521	97	23%
445120	Convenience Stores	341	423	494	71	17%
424490	Other Grocery and Related Products Merchant Wholesalers	391	401	468	67	17%
424810	Beer and Ale Merchant Wholesalers	304	307	392	85	27%
424450	Confectionery Merchant Wholesalers	77	71	90	19	27%
424430	Dairy Product (except Dried or Canned) Merchant Wholesalers	61	62	77	15	24%
445120	Convenience Stores	<10	14	27	13	93%
445310	Beer, Wine, and Liquor Stores	174	185	169	(16)	(9%)
445299	All Other Specialty Food Stores	61	63	15	(48)	(76%)
<b>TOTAL</b>		<b>8,209</b>	<b>8,064</b>	<b>9,363</b>	<b>1,137</b>	<b>14%</b>

Source: EMSI 2013.2 Class of Worker Dataset QCEW Employees

In the Processing group we have included activities related to manufacturing, packaging, and food and beverage processing, all of which are classified as manufacturing (NAICS 31). In the Employer Training Resource, WIB the nuts and perishable product foods manufacturing sector (NAICS 3119) and dairy product manufacturing (NAICS 3115) include the highest employment counts, with a total of 1,053 new jobs in 2017. Establishments that perform frozen fruit, juice, and vegetable manufacturing will lose the most employees, at 170 between 2012 and 2017 (Table 3.3).



**TABLE 3.3:  
JOB PROJECTIONS BY CLUSTER – PROCESSING**

NAICS Code	Description	2010 Jobs	2012 Jobs	2017 Jobs	Change	% Change
311911	Roasted Nuts and Peanut Butter Manufacturing	1,283	1,383	1,718	335	24%
311991	Perishable Prepared Food Manufacturing	1,822	1,824	2,086	262	14%
311520	Ice Cream and Frozen Dessert Manufacturing	921	941	1,187	246	26%
311919	Other Snack Food Manufacturing	595	758	968	210	28%
312111	Soft Drink Manufacturing	98	120	164	44	37%
311412	Frozen Specialty Food Manufacturing	18	40	78	38	95%
311511	Fluid Milk Manufacturing	50	50	82	32	64%
311514	Dry, Condensed, and Evaporated Dairy Product Manufacturing	<10	30	56	26	87%
312120	Breweries	42	44	68	24	55%
311812	Commercial Bakeries	149	81	102	21	26%
311612	Meat Processed from Carcasses	84	91	96	5	5%
312111	Soft Drink Manufacturing	48	44	45	1	2%
311811	Retail Bakeries	42	49	39	(10)	(20%)
312130	Wineries	67	53	30	(23)	(43%)
312112	Bottled Water Manufacturing	79	54	29	(25)	(46%)
311411	Frozen Fruit, Juice, and Vegetable Manufacturing	267	321	151	(170)	(53%)
<b>TOTAL</b>		<b>5,565</b>	<b>5,883</b>	<b>6,899</b>	<b>1,016</b>	<b>17%</b>

Source: EMSI 2013.2 Class of Worker Dataset QCEW Employees

The Production group includes animal and crop production. Compared to the Processing group, the Production group is expected to produce a much higher net growth of 4,221 jobs. There is a projected increase of 3,471 jobs in farm labor contractors and crew leaders (NAICS 115115) by 2017 (Table 3.4).

**TABLE 3.4:  
JOB PROJECTIONS BY CLUSTER – PRODUCTION**

NAICS Code	Description	2010 Jobs	2012 Jobs	2017 Jobs	Change	% Change
115115	Farm Labor Contractors and Crew Leaders	22,500	28,957	32,428	3,471	12.0%
111	Crop Production	15,367	17,906	18,729	823	4.6%
112	Animal Production	1,801	1,895	2,127	232	12.2%
113210	Forest Nurseries and Gathering of Forest Products	103	83	107	24	29.0%
115114	Postharvest Crop Activities (except Cotton Ginning)	2,566	2,540	2,511	(29)	(1.0%)
115111	Cotton Ginning	95	97	30	(67)	(69.0%)
115116	Farm Management Services	791	945	850	(95)	(10.0%)
115113	Crop Harvesting, Primarily by Machine	281	235	97	(138)	(59.0%)
<b>TOTAL</b>		<b>43,504</b>	<b>52,658</b>	<b>56,879</b>	<b>4,221</b>	<b>8.0%</b>

Source: EMSI 2013.2 Class of Worker Dataset QCEW Employees

The final group of industries under the Agriculture cluster includes all establishments that support agriculture related activities. A diverse set of services from water utilities, construction, business support services, professional services, fertilizer and chemicals, and repair services are all included under the support services group. Altogether, EMSI projects a 2,512 net job increase between 2012 and 2017.

Temporary help services (NAICS 561320) would gain 1,338 jobs while water line construction and pump manufacturing (NAICS 237110 and 333911) would be among the declining industries (Table 3.5).

TABLE 3.5: JOB PROJECTIONS BY CLUSTER – SUPPORT						
NAICS Code	Description	2010 Jobs	2012 Jobs	2017 Jobs	Change	% Change
561320	Temporary Help Services	3,765	4,446	5,784	1,338	30%
423830	Industrial Machinery and Equipment Merchant Wholesalers	1,068	1,189	1,517	328	28%
541380	Testing Laboratories	469	632	854	222	35%
811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	740	873	1,062	189	22%
423820	Farm and Garden Machinery and Equipment Merchant Wholesalers	381	412	486	74	18%
221310	Water Supply and Irrigation Systems	436	246	312	66	27%
532490	Other Commercial and Industrial Machinery and Equipment Rental and Leasing	94	147	201	54	37%
541940	Veterinary Services	499	510	560	50	10%
333993	Packaging Machinery Manufacturing	23	93	138	45	48%
561730	Landscaping Services	666	704	748	44	6%
423840	Industrial Supplies Merchant Wholesalers	115	118	151	33	28%
326291	Rubber Product Manufacturing for Mechanical Use	93	101	132	31	31%
541890	Other Services Related to Advertising	95	95	124	29	31%
561110	Office Administrative Services	41	42	66	24	57%
562920	Materials Recovery Facilities	148	142	161	19	13%
541370	Surveying and Mapping (except Geophysical) Services	61	103	121	18	17%
561730	Landscaping Services	56	44	62	18	41%
333992	Welding and Soldering Equipment Manufacturing	<10	14	29	15	107%
332420	Metal Tank (Heavy Gauge) Manufacturing	58	72	85	13	18%
541940	Veterinary Services	33	38		5	15%
561710	Exterminating and Pest Control Services	43	47		4	9%
444220	Nursery, Garden Center, and Farm Supply Stores	137	203	184	(19)	(9%)
333911	Pump and Pumping Equipment Manufacturing	47	33	10	(23)	(70%)
444210	Outdoor Power Equipment Stores	38	38	11	(27)	(71%)
237110	Water and Sewer Line and Related Structures Construction	308	304	266	(38)	(13%)
<b>TOTAL</b>		<b>9,414</b>	<b>10,646</b>	<b>13,064</b>	<b>2,512</b>	<b>24%</b>

Source: EMSI 2013.2 Class of Worker Dataset QCEW Employees

## ENERGY CLUSTER

Energy cluster will add 3,158 new job opportunities by 2017. This cluster is comprised of establishments engaged in alternative energy generation, production, and distribution, energy efficiency, equipment manufacturing, petroleum production and distribution, and power generation and transmission. Under this cluster, oil and gas pipeline and related structures construction is expected to add 2,233 jobs by 2017. Compared to other sub-sectors, this industry provides 52 percent of the projected employment growth. EMSI estimates a large job loss of 263 workers by 2017 for Drywall and Insulation Contractors (NAICS 23831). Establishments related to this industry provide energy efficiency services by engaging in drywall, plaster work, and building insulation work. Industries with a considerable positive or negative change are primarily related to the construction sector (NAICS 23) (Table 3.6).

**TABLE 3.6:  
JOB PROJECTIONS BY CLUSTER – ENERGY**

NAICS Code	Description	2010 Jobs	2012 Jobs	2017 Jobs	2012-2017 Change	% Change	Sub-Cluster
237120	Oil and Gas Pipeline and Related Structures Construction	1,991	4,261	6,494	2,233	52%	6
23821	Electrical Contractors and Other Wiring Installation Contractors	1,715	1,950	2,380	430	22%	3
237130	Power and Communication Line and Related Structures Construction	731	1,410	1,803	393	28%	6
811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	740	873	1,062	189	22%	7
324110	Petroleum Refineries	780	883	1,018	135	15%	5
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	368	398	518	120	30%	4
213111	Drilling Oil and Gas Wells	1,060	1,807	1,911	104	6%	5
424710	Petroleum Bulk Stations and Terminals	239	225	298	73	32%	5
211111	Crude Petroleum and Natural Gas Extraction	2,479	3,149	3,209	60	2%	5
423690	Other Electronic Parts and Equipment Merchant Wholesalers	37	46	73	27	59%	1
211112	Natural Gas Liquid Extraction	0	45	70	25	56%	5
423720	Plumbing and Heating Equipment and Supplies (Hydronics) Merchant Wholesalers	142	158	167	9	6%	1
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	17	19	24	5	26%	5
211111	Crude Petroleum and Natural Gas Extraction	18	13	16	3	23%	5
211111	Crude Petroleum and Natural Gas Extraction	14	12	13	1	8%	5
221119	Other Electric Power Generation	<10	129	130	1	1%	6
23822	Plumbing, Heating, and Air-Conditioning Contractors	29	29	27	(2)	(7%)	3
23822	Plumbing, Heating, and Air-Conditioning Contractors	10	14	11	(3)	(21%)	6
221112	Fossil Fuel Electric Power Generation	17	25	22	(3)	(12%)	3
238160	Roofing Contractors	29	23	18	(5)	(22%)	1
423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	206	180	175	(5)	(3%)	1
23831	Drywall and Insulation Contractors	30	17	11	(6)	(35%)	3
221112	Fossil Fuel Electric Power Generation	392	301	284	(17)	(6%)	6
333611	Turbine and Turbine Generator Set Units Manufacturing	46	46	17	(29)	(63%)	4

NAICS Code	Description	2010 Jobs	2012 Jobs	2017 Jobs	2012-2017 Change	% Change	Sub-Cluster
237110	Water and Sewer Line and Related Structures Construction	308	304	266	(38)	(13%)	4
333132	Oil and Gas Field Machinery and Equipment Manufacturing	354	375	337	(38)	(10%)	1
23822	Plumbing, Heating, and Air-Conditioning Contractors	974	944	876	(68)	(7%)	3
238160	Roofing Contractors	158	154	75	(79)	(51%)	1
221119	Other Electric Power Generation	215	250	156	(94)	(38%)	6
23831	Drywall and Insulation Contractors	550	475	212	(263)	(55%)	3
<b>TOTAL</b>		<b>13,649</b>	<b>18,515</b>	<b>21,673</b>	<b>3,158</b>	<b>17%</b>	
<b>Energy Sub-Clusters</b>							
<b>1</b> - Alternative Energy Generation/Production		<b>5</b> - Petroleum Production & Petroleum Distribution					
<b>2</b> - Alternative Energy Distribution		<b>6</b> - Power Generation and Transmission					
<b>3</b> - Energy Efficiency		<b>7</b> - Research & Services					
<b>4</b> - Equipment Manufacturing							

Source: EMSI 2013.2 Class of Worker Dataset QCEW Employees

## HEALTH AND WELLNESS CLUSTER

This cluster is projected to have a positive increase in its employment by adding 4,896 additional employees. Ambulatory and health care services (NAICS 621) and Hospitals (NAICS 622) cover the top five growing industries under this cluster. Other sectors such as medical device manufacturing, pharmaceuticals, supplies and services, and wellness and fitness services are also part of this cluster. For the ETR WIB region, offices of physicians (NAICS 621111) and general medical and surgical hospitals (NAICS 622110) are anticipated to provide 2,077 employment opportunities (Table 3.7). In addition, pharmacies and drug stores (NAICS 446110) are expected to add 426 new employees by 2017. In contrast, surgical appliance and supplies manufacturing (NAICS 339113) is projected to lose 66 jobs. This industry has demonstrated a declining trend since 2010.

TABLE 3.7:  
JOB PROJECTIONS BY CLUSTER – HEALTH AND WELLNESS

NAICS Code	Description	2010 Jobs	2012 Jobs	2017 Jobs	2012-2017 Change	% Change	Sub-Cluster
621111	Offices of Physicians (except Mental Health Specialists)	5,377	5,385	6,442	1,057	20%	1
622110	General Medical and Surgical Hospitals (Private)	5,893	6,536	7,556	1,020	16%	1
446110	Pharmacies and Drug Stores	1,560	1,555	1,981	426	27%	5
622310	Specialty (except Psychiatric and Substance Abuse) Hospitals (Private)	570	550	972	422	77%	1
621610	Home Health Care Services	1,021	1,148	1,525	377	33%	1
624310	Vocational Rehabilitation Services	778	881	1,161	280	32%	1
623311	Continuing Care Retirement Communities	537	655	926	271	41%	1
621511	Medical Laboratories	297	561	755	194	35%	1
621210	Offices of Dentists	1,674	1,767	1,953	186	11%	1
621340	Offices of Physical, Occupational and Speech Therapists, and Audiologists	348	402	545	143	36%	1
623220	Residential Mental Health and Substance Abuse Facilities	331	311	425	114	37%	1
339112	Surgical and Medical Instrument Manufacturing	181	204	283	79	39%	2

NAICS Code	Description	2010 Jobs	2012 Jobs	2017 Jobs	2012-2017 Change	% Change	Sub-Cluster
621493	Freestanding Ambulatory Surgical and Emergency Centers	175	209	286	77	37%	1
621492	Kidney Dialysis Centers	235	282	353	71	25%	1
621330	Offices of Mental Health Practitioners (except Physicians)	139	220	286	66	30%	1
446191	Food (Health) Supplement Stores	74	90	132	42	47%	5
623110	Nursing Care Facilities	106	109	141	32	29%	1
621320	Offices of Optometrists	201	209	239	30	14%	1
623312	Homes for the Elderly	631	725	752	27	0.04%	1
621991	Blood and Organ Banks	72	92	118	26	47%	1
424210	Drugs and Druggists' Sundries Merchant Wholesalers	14	34	58	24	71%	4
621910	Ambulance Services	51	64	84	20	0.31	1
621420	Outpatient Mental Health and Substance Abuse Centers	25	31	50	19	0.61	1
621420	Outpatient Mental Health and Substance Abuse Centers	86	76	92	16	21%	1
623312	Homes for the Elderly	38	36	51	15	0.42	1
446130	Optical Goods Stores	72	81	95	14	17%	5
621498	All Other Outpatient Care Centers	56	78	91	13	17%	1
621910	Ambulance Services	233	239	250	11	5%	1
621610	Home Health Care Services	21	34	44	10	0.29	1
621310	Offices of Chiropractors	148	162	149	(13)	(8%)	1
623990	Other Residential Care Facilities	143	191	167	(24)	(13%)	1
623110	Nursing Care Facilities	1,310	1,322	1,293	(29)	(2%)	1
623210	Residential Mental Retardation Facilities	441	510	478	(32)	(6%)	1
621512	Diagnostic Imaging Centers	286	112	78	(34)	(30%)	1
339113	Surgical Appliance and Supplies Manufacturing	163	128	62	(66)	(52%)	2
<b>TOTAL</b>		<b>23,632</b>	<b>25,130</b>	<b>30,026</b>	<b>4,896</b>	<b>19%</b>	
<b>Health and Wellness Cub-Clusters</b>							
<b>1</b> - Health Care Delivery		<b>4</b> - Supplies and Services					
<b>2</b> - Medical Device Manufacturing		<b>5</b> - Wellness and Fitness					
<b>3</b> - Pharmaceuticals							

Source: EMSI 2013.2 Class of Worker Dataset QCEW Employees

## LOGISTICS CLUSTER

In the logistics cluster, local specialized freight (except used goods) trucking (NAICS 484220) is the largest industry and is projected to add 633 jobs by 2017. Also as part of the Logistics cluster, activities that support both long distance and local general freight trucking, refrigerated warehousing, couriers and logistics services are all projected to add jobs. Establishments that perform other support activities for air transportation (NAICS 488190) are expected to lose 107 jobs by 2017 and specialized long distance trucking is also projected to lose 81 jobs (Table 3.8).

**TABLE 3.8:  
JOB PROJECTIONS BY CLUSTER – LOGISTICS**

NAICS Code	Description	2010 Jobs	2012 Jobs	2017 Jobs	2012-2017 Change	% Change	Sub-Cluster
484220	Specialized Freight (except Used Goods) Trucking, Local	1,402	1,685	2,318	633	38%	2
493110	General Warehousing and Storage	1,166					
484110	General Freight Trucking, Local	911	959	1,262	303	32%	2
493120	Refrigerated Warehousing and Storage	191	206	325	119	58%	2
488510	Freight Transportation Arrangement	158	190	309	119	63%	3
492110	Couriers and Express Delivery Services	446	459	569	110	24%	3
484121	General Freight Trucking, Long-Distance, Truckload	572	627	717	90	14%	2
541614	Process, Physical Distribution, and Logistics Consulting Services	62	137	207	70	51%	2
492210	Local Messengers and Local Delivery	68	97	133	36	37%	3
485999	All Other Transit and Ground Passenger Transportation	23	69	103	34	49%	4
488210	Support Activities for Rail Transportation	27	68	91	23	34%	1
493190	Other Warehousing and Storage	17	26	42	16	62%	1
493110	General Warehousing and Storage	1,166	1,274	1,285	11	1%	1
481111	Scheduled Passenger Air Transportation	<10	18	32	14	78%	1
481211	Nonscheduled Chartered Passenger Air Transportation	60	28	35	7	25%	1
483212	Inland Water Passenger Transportation	42	25	31	6	24%	1
485210	Interurban and Rural Bus Transportation	32	23	17	(6)	(26%)	4
481111	Scheduled Passenger Air Transportation	99	35	27	(8)	(23%)	4
485991	Special Needs Transportation	41	36	27	(9)	(25%)	4
485113	Bus and Other Motor Vehicle Transit Systems	45	32	20	(12)	(38%)	4
484210	Used Household and Office Goods Moving	59	64	39	(25)	(39%)	2
488410	Motor Vehicle Towing	218	171	139	(32)	(19%)	3
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	111	110	29	(81)	(74%)	2
488190	Other Support Activities for Air Transportation	160	276	169	(107)	(39%)	1
<b>TOTAL</b>		<b>5,893</b>	<b>6,615</b>	<b>6,599</b>	<b>1,311</b>	<b>20%</b>	
<b>Logistics Sub-Clusters</b>							
<b>1</b> - Air, Rail, Water Transportation		<b>3</b> - Other Services					
<b>2</b> - Freight & Warehousing		<b>4</b> - Transit					

Source: EMST 2013.2 Class of Worker Dataset QCEW Employees

## MANUFACTURING CLUSTER

The manufacturing industry providing service to both the major clusters and other growing job sectors is expected to add a total of 825 jobs by 2017. Very few industries, mostly related to the non-cluster manufacturing services, are projected to add more than 100 new jobs during the next five years (Table 3.9). The two largest gainers are equipment manufacturing for aircraft parts and other miscellaneous general purpose machinery manufacturing with a combined net total of 263 jobs between 2012 and 2017. (Industries that would grow or decline by less than 10 employees are not listed.) As part of the manufacturing related services that do not relate to the main clusters, establishments that perform other aircraft parts and auxiliary equipment manufacturing (NAICS 336413) activities are expected to gain 120 jobs by 2017.

**TABLE 3.9:  
JOB PROJECTIONS BY CLUSTER – MANUFACTURING**

NAICS Code	Description	2010 Jobs	2012 Jobs	2017 Jobs	Change	% Change
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	439	371	530	159	42.9%
333999	All Other Miscellaneous General Purpose Machinery Manufacturing	79	184	288	104	56.5%
327310	Cement Manufacturing	356	361	457	96	26.6%
325520	Adhesive Manufacturing	247	227	319	92	40.5%
332710	Machine Shops	370	432	513	81	18.8%
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	74	180	260	80	44.4%
333319	Other Commercial and Service Industry Machinery Manufacturing	45	88	164	76	86%
325199	All Other Basic Organic Chemical Manufacturing	69	133	189	56	42.1%
333298	All Other Industrial Machinery Manufacturing	44	66	116	50	76%
332812	Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	73	93	143	50	53.8%
333298	All Other Industrial Machinery Manufacturing	44	66	116	50	75.8%
333993	Packaging Machinery Manufacturing	23	93	138	45	48.4%
336330	Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing	<10	31	75	44	141.9%
332323	Ornamental and Architectural Metal Work Manufacturing	72	62	94	32	51.6%
326291	Rubber Product Manufacturing for Mechanical Use	93	101	132	31	30.7%
321114	Wood Preservation	33	44	72	28	63.6%
334119	Other Computer Peripheral Equipment Manufacturing	<10	48	72	24	50.0%
336212	Truck Trailer Manufacturing	30	50	74	24	48.0%
327992	Ground or Treated Mineral and Earth Manufacturing	46	78	101	23	29.5%
332813	Electroplating, Plating, Polishing, Anodizing, and Coloring	59	64	83	19	29.7%
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables	11	27	44	17	63.0%
333992	Welding and Soldering Equipment Manufacturing	<10	14	29	15	107.1%
339991	Gasket, Packing, and Sealing Device Manufacturing	<10	25	40	15	60.0%
331319	Other Aluminum Rolling and Drawing	54	56	69	13	23.2%
332420	Metal Tank (Heavy Gauge) Manufacturing	58	72	85	13	18.1%

NAICS Code	Description	2010 Jobs	2012 Jobs	2017 Jobs	Change	% Change
333515	Cutting Tool and Machine Tool Accessory Manufacturing	<10	17	30	13	76.5%
324191	Petroleum Lubricating Oil and Grease Manufacturing	20	38	50	12	31.6%
339999	All Other Miscellaneous Manufacturing	17	22	33	11	50.0%
332322	Sheet Metal Work Manufacturing	16	25	35	10	40.0%
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing	14	28	38	10	35.7%
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	<10	14	24	10	71.4%
323113	Commercial Screen Printing	22	23	12	(11)	(47.8%)
332913	Plumbing Fixture Fitting and Trim Manufacturing	34	29	17	(12)	(41.4%)
321992	Prefabricated Wood Building Manufacturing	31	47	32	(15)	(31.9%)
337110	Wood Kitchen Cabinet and Countertop Manufacturing	81	71	52	(19)	(26.8%)
336211	Motor Vehicle Body Manufacturing	54	59	38	(21)	(35.6%)
333911	Pump and Pumping Equipment Manufacturing	47	33	10	(23)	(70%)
326122	Plastics Pipe and Pipe Fitting Manufacturing	46	55	29	(26)	(47%)
333611	Turbine and Turbine Generator Set Units Manufacturing	46	46	17	(29)	(63%)
321999	All Other Miscellaneous Wood Product Manufacturing	78	44	11	(33)	(75.0%)
327320	Ready-Mix Concrete Manufacturing	196	184	147	(37)	(20.1%)
333132	Oil and Gas Field Machinery and Equipment Manufacturing	354	375	337	(38)	(10%)
332312	Fabricated Structural Metal Manufacturing	187	110	53	(57)	(51.8%)
336411	Aircraft Manufacturing	235	76	12	(64)	(84.2%)
339113	Surgical Appliance and Supplies Manufacturing	163	128	62	(66)	(52%)
326199	All Other Plastics Product Manufacturing	259	184	101	(83)	(45.1%)
<b>TOTAL</b>		<b>3,474</b>	<b>3,783</b>	<b>4,608</b>	<b>825</b>	<b>22.0%</b>

Source: EMSI 2013.2 Class of Worker Dataset QCEW Employees

## WATER TECHNOLOGY CLUSTER

In the ETR WIB, the only two sectors under the Water Technology cluster that are expected to have an employment increase are related to wholesalers of industrial machinery and farm supplies and also manufacturing; however, it is unclear if these are related to irrigation or other water-related activities, so we have included the jobs in the broader manufacturing and agricultural clusters instead. Kern is the only county in the ETR WIB that shows positive job changes for this cluster.

## OCCUPATIONAL DEMAND BY CLUSTER

To assess the projected occupational demand created by employment increase in any of the above clusters, we tabulated the occupational staffing patterns for each of clusters. EMSI identifies specific occupations that will create the highest number of jobs between 2012 and 2017 which helps analyze the future demand for workforce training and educational requirements.

## AGRICULTURE CLUSTER

Farmworkers and Laborers, Crop, Nursery, and Greenhouse (SOC 45-2092) and Heavy & Tractor-Trailer Truck Drivers (SOC 53-3032) are the largest growing agriculture related occupations in the county with 600 new employees. The third highest occupational growth category with 383 new employees is the Hand Laborers and Freight, Stock, and Material Movers (SOC 53-7062). As mentioned before, production is the



top growing sub-cluster under Agriculture and the growing occupational trend responds to this projection as well (Table 3.10). The occupational estimates shown in this table correspond with the employment projection tables presented in the previous section; however, the occupational tables only present those with a net job change of more than 10 persons, which explains the differences found between net job change and net occupation change for the clusters.

**TABLE 3.10:  
AGRICULTURE CLUSTER**

SOC	OCCUPATION	EMPLOYED IN INDUSTRY GROUP (2010)	EMPLOYED IN INDUSTRY GROUP (2012)	EMPLOYED IN INDUSTRY GROUP (2017)	2012-2017 CHANGE	% CHANGE	MEDIAN HOURLY EARNINGS	EDUCATION LEVEL*
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	32,882	33,067	33,667	600	7.1%	8.83	1
53-3032	Heavy and Tractor-Trailer Truck Drivers	1,893	2,078	2,678	600	28.9%	19.23	1
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	1,667	1,836	2,219	383	20.9%	12.82	1
53-7064	Packers and Packagers, Hand	2,336	2,606	2,941	335	12.9%	9.04	1
41-2011	Cashiers	2,067	2,214	2,490	276	12.0%	9.19	1
43-9061	Office Clerks, General	1,011	1,154	1,385	231	20.0%	14.25	1
45-2091	Agricultural Equipment Operators	1,339	1,605	1,756	151	9.4%	12.05	1
45-2041	Graders and Sorters, Agricultural Products	857	1,082	1,227	145	13.0%	8.77	1
49-9041	Industrial Machinery Mechanics	464	524	666	142	27.1%	26.98	3
51-9111	Packaging and Filling Machine Operators and Tenders	365	411	535	124	30.2%	16.23	2
41-4012	Sales Representatives, Wholesale & Mfg, Except Technical & Scientific Products	449	443	561	118	26.6%	27.03	2
51-3092	Food Batchmakers	978	1,008	1,117	109	11.0%	9.7	1
53-7051	Industrial Truck and Tractor Operators	651	702	801	99	14.1%	11.54	1
43-5081	Stock Clerks & Order Fillers	856	863	958	95	11.0%	9.44	1
43-4051	Customer Service Reps	338	363	453	90	24.8%	15.33	1
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	891	1,065	1,155	90	8.5%	13.08	4
49-9071	Maintenance and Repair Workers, General	428	481	568	87	18.1%	16.69	2
51-2092	Team Assemblers	211	239	326	87		11.28	2
53-3031	Driver/Sales Workers	391	296	375	79	27.0%	9.54	1
51-9198	Helpers-Prod. Workers	161	200	272	72	36.0%	11.47	1
51-9399	Production Workers, All Other	347	376	445	69	18.4%	16.6	2
45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	1,110	1,281	1,349	68	5.0%	9.96	1
11-9013	Farmers, Ranchers, & Other Agricultural Mgrs	992	1,137	1,203	66	6.0%	37.27	4
53-3033	Light Truck or Delivery Services Drivers	299	292	349	57	20.0%	12.96	1
43-1011	First-Line Supervisors of Office and Administrative Support Workers	405	443	498	55	12.4%	23.59	4

SOC	OCCUPATION	EMPLOYED IN INDUSTRY GROUP (2010)	EMPLOYED IN INDUSTRY GROUP (2012)	EMPLOYED IN INDUSTRY GROUP (2017)	2012-2017 CHANGE	% CHANGE	MEDIAN HOURLY EARNINGS	EDUCATION LEVEL*
11-1021	General & Operations Mgr	504	544	599	55	10.1%	42.4	7
13-1078	H.R., Training, & Labor Relations Specialists, All Other	114	140	191	51	36.0%	27.41	7
37-3011	Landscaping and Groundskeeping Workers	540	581	627	46	8.0%	10.89	1
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	269	294	339	45	15.0%	17.06	1
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	76	94	135	41	44.0%	19.86	2
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	170	197	236	39	20.0%	24.32	3
41-1011	First-Line Supervisors of Retail Sales Workers	258	273	311	38	14.0%	16.75	4
51-3021	Butchers and Meat Cutters	366	389	426	37	10.0%	10.54	3
35-2021	Food Preparation Workers	261	279	316	37	13.0%	9.03	1
43-5011	Cargo and Freight Agents	57	67	103	36	54.0%	17.87	1
35-3021	Combined Food Preparation & Serving Wkrs, Including Fast Food	268	286	320	34	12.0%	8.91	1
29-1111	Registered Nurses	98	116	148	32	28.0%	42.03	6
49-3031	Bus and Truck Mechanics & Diesel Engine Specialists	90	99	130	31	31.0%	19.16	5
47-2061	Construction Laborers	169	180	210	30	17.0%	14.11	1
51-1011	First-Line Supervisors of Production and Operating Workers	158	163	193	30	18.0%	27.91	4
51-4041	Machinists	92	111	141	30	27.0%	17.58	3
53-3031	Driver/Sales Workers	157	163	192	29	18.0%	9.54	1
51-2099	Assemblers and Fabricators, All Other	62	73	101	28	38.0%	10.79	2
53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	109	113	141	28	25.0%	28.68	4
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	111	130	158	28	22.0%	10.34	1
43-5032	Dispatchers, Except Police, Fire, and Ambulance	77	86	113	27	31.0%	17.41	2
13-2011	Accountants & Auditors	172	202	228	26	13.0%	29.23	7
49-3041	Farm Equipment Mechanics and Service Technicians	175	194	220	26	13.0%	13.46	3
51-4121	Welders, Cutters, Solderers, and Brazers	169	199	225	26	13.0%	29.43	5
37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation	58	78	103	25	32.0%	10.41	2
43-4171	Receptionists and Information Clerks	153	166	189	23	14.0%	11.66	1
45-2041	Graders and Sorters, Agricultural Products	371	430	452	22	5.0%	8.77	1
41-3099	Sales Representatives, Services, All Other	108	119	141	22	18.0%	22.17	1
51-8031	Water and Wastewater Treatment Plant and System Operators	126	75	97	22	29.0%	27.87	3

SOC	OCCUPATION	EMPLOYED IN INDUSTRY GROUP (2010)	EMPLOYED IN INDUSTRY GROUP (2012)	EMPLOYED IN INDUSTRY GROUP (2017)	2012-2017 CHANGE	% CHANGE	MEDIAN HOURLY EARNINGS	EDUCATION LEVEL*
31-1011	Home Health Aides	51	62	83	21	34.0%	9.26	1
29-2061	Licensed Practical & Vocational Nurses	57	68	88	20	29.0%	23.62	5
43-5071	Shipping, Receiving, and Traffic Clerks	92	104	124	20	19.0%	13.21	1
37-3011	Landscaping and Groundskeeping Workers	40	32	45	13	41.0%	16.58	1

**1** - Short-term on-the-job training  
**2** - Moderate-term on-the-job training  
**3** - Long-term on-the-job training  
**4** - Work experience in a related occupation  
**5** - Postsecondary non-degree award  
**6** - Associate's degree  
**7** - Bachelor's degree  
**8** - Bachelor's or higher degree, plus work experience  
**9** - First professional degree  
**10** - Masters

Source: EMSI 2013.2 Class of Worker Dataset-QCEW Employees

## ENERGY CLUSTER

Since the highest job growth in the Energy Cluster is projected for oil and gas pipeline construction, the leading occupations are also mainly construction oriented. The construction laborers occupation (SOC 47-2061) is estimated to hire 531 workers by 2017. Other occupations related to performing physical labor or operating equipment at construction sites would increase between 2012 and 2017 by 799 new employees, including the 531 new construction laborers (SOC 47-2061) (Table 3.11).

TABLE 3.11:  
ENERGY CLUSTER

SOC	OCCUPATION	EMPLOYED IN INDUSTRY GROUP (2010)	EMPLOYED IN INDUSTRY GROUP (2012)	EMPLOYED IN INDUSTRY GROUP (2017)	2012-2017 CHANGE	% CHANGE	MEDIAN HOURLY EARNINGS	EDUCATION LEVEL*
47-2061	Construction Laborers	510	1053	1584	531	50.0%	14.11	1
47-2073	Operating Engineers & Other Construction Equip. Operators	244	495	763	268	54.0%	21.11	2
47-2111	Electricians	1087	1282	1532	250	19.5%	28.13	3
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	198	412	599	187	45.0%	33.18	4
47-2151	Pipelayers	81	156	284	128	82.0%	19.4	1
47-2152	Plumbers, Pipefitters, and Steamfitters	125	258	386	128	50.0%	21.99	3
49-9041	Industrial Machinery Mechanics	246	307	383	76	24.8%	26.98	3
49-9051	Electrical Power-Line Installers and Repairers	214	343	411	68	20.0%	41.25	3
53-3032	Heavy and Tractor-Trailer Truck Drivers	69	142	210	68	48.0%	19.23	1
11-9021	Construction Managers	69	144	207	63	44.0%	43.69	7
43-9061	Office Clerks, General	92	180	240	60	33.0%	14.25	1

SOC	OCCUPATION	EMPLOYED IN INDUSTRY GROUP (2010)	EMPLOYED IN INDUSTRY GROUP (2012)	EMPLOYED IN INDUSTRY GROUP (2017)	2012-2017 CHANGE	% CHANGE	MEDIAN HOURLY EARNINGS	EDUCATION LEVEL*
49-9052	Telecommunications Line Installers and Repairers	83	163	216	53	33.0%	26.7	3
47-5021	Earth Drillers, Except Oil and Gas	40	81	130	49	60.0%	20.64	2
47-5071	Roustabouts, Oil and Gas	362	578	625	47	8.1%	16.62	2
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	47	105	150	45	43.0%	17.26	1
47-2031	Carpenters	32	60	103	43	72.0%	23.51	3
11-1021	General & Operations Mgrs	72	133	175	42	32.0%	42.4	8
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	45	101	141	40	40.0%	24.32	3
13-1051	Cost Estimators	35	73	110	37	51.0%	28.98	7
43-3031	Bookkeeping, Accounting, and Auditing Clerks	45	88	123	35	40.0%	17.8	2
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	46	86	119	33	38.0%	17.06	1
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	102	123	152	29	24.0%	\$24.02	5
53-7032	Excavating and Loading Machine and Dragline Operators	27	56	83	27	48.0%	23.51	2
49-9071	Maintenance and Repair Workers, General	45	83	110	27	33.0%	16.69	2
17-2171	Petroleum Engineers	213	278	305	27	10.0%	54.57	7
47-3013	Helpers--Electricians	70	77	103	26	34.0%	\$15.36	1
51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	505	583	609	26	4.0%	32.09	3
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	73	117	140	23	20.0%	32.95	4
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	24	47	70	23	49.0%	12.82	1
47-5013	Service Unit Operators, Oil, Gas, and Mining	257	397	420	23	6.0%	21.65	2
47-2051	Cement Masons and Concrete Finishers	19	39	61	22	56.0%	17.66	2

1 - Short-term on-the-job training  
2 - Moderate-term on-the-job training

6 - Associate's degree  
7 - Bachelor's degree

SOC	OCCUPATION	EMPLOYED IN INDUSTRY GROUP (2010)	EMPLOYED IN INDUSTRY GROUP (2012)	EMPLOYED IN INDUSTRY GROUP (2017)	2012-2017 CHANGE	% CHANGE	MEDIAN HOURLY EARNINGS	EDUCATION LEVEL*
<b>3</b>	Long-term on-the-job training							
<b>4</b>	Work experience in a related occupation							
<b>5</b>	Postsecondary non-degree award							
<b>8</b>	Bachelor's or higher degree, plus work experience							
<b>9</b>	First professional degree							
<b>10</b>	Masters							

Source: EMSI 2013.2 Class of Worker Dataset-QCEW Employees

## HEALTH AND WELLNESS CLUSTER

The occupation within the Health and Wellness cluster that shows the highest growth in workers being hired between 2012 and 2017 is for registered nurses (SOC 29-1111). EMSI estimates this occupation to grow by 698 persons. The second and the third largest growing occupations relate to health care support occupations (SOC 31) with 483 new employees (Table 3.12).

TABLE 3.12:  
HEALTH AND WELLNESS CLUSTER

SOC	OCCUPATION	EMPLOYED IN INDUSTRY GROUP (2010)	EMPLOYED IN INDUSTRY GROUP (2012)	EMPLOYED IN INDUSTRY GROUP (2017)	2012-2017 CHANGE	% CHANGE	MEDIAN HOURLY EARNINGS	EDUCATION LEVEL*
29-1111	Registered Nurses	2,714	2,979	3,677	698	23.0%	\$42.03	6
31-1011	Home Health Aides	864	996	1,243	247	25.0%	\$9.26	1
31-9092	Medical Assistants	1,405	1,445	1,681	236	16.0%	\$11.55	2
43-6013	Medical Secretaries	830	890	1,104	214	24.0%	13.88	2
39-9021	Personal Care Aides	578	664	854	190	29.0%	9.38	1
31-1012	Nursing Aides, Orderlies, and Attendants	1,146	1,231	1,420	189	15.4%	12.12	5
43-4171	Receptionists & Info. Clerk	583	617	765	148	24.0%	11.66	1
29-2052	Pharmacy Technicians	403	411	547	136	33.0%	\$16.75	2
29-2061	Licensed Practical & Vocational Nurses	712	747	864	117	16.0%	23.62	5
43-9061	Office Clerks, General	578	611	713	102	17.0%	14.25	1
31-9091	Dental Assistants	730	771	848	77	10.0%	13.55	5
29-2037	Radiologic Technologists and Technicians	281	309	381	72	23.0%	29.47	6
41-2011	Cashiers	442	430	501	71	17.0%	\$9.19	1
29-1051	Pharmacists	198	199	268	69	35.0%	\$61.88	9
43-1011	First-Line Supervisors of Office & Admin Support Wkrs	389	405	473	68	17.0%	23.59	4
29-1069	Physicians and Surgeons, All Other	183	192	254	62	32.0%	95.46	9
21-1093	Social & Human Service Assists	374	406	468	62	15.0%	16.41	1

SOC	OCCUPATION	EMPLOYED IN INDUSTRY GROUP (2010)	EMPLOYED IN INDUSTRY GROUP (2012)	EMPLOYED IN INDUSTRY GROUP (2017)	2012-2017 CHANGE	% CHANGE	MEDIAN HOURLY EARNINGS	EDUCATION LEVEL*
11-9111	Medical & Health Svcs Managers	276	297	356	59	20.0%	42.81	7
43-3021	Billing and Posting Clerks	399	409	466	57	14.0%	14.96	1
29-1123	Physical Therapists	167	184	241	57	31.0%	36.16	9
31-9799	Healthcare Support Wkrs, All Other	247	273	324	51	19.0%	14.01	1
41-1011	First-Line Supervisors of Retail Sales Wkrs	147	149	192	43	29.0%	\$16.75	4
29-2041	Emergency Medical Techs & Paramedics	29	36	49	13	36.0%	20.61	5

**1** - Short-term on-the-job training  
**2** - Moderate-term on-the-job training  
**3** - Long-term on-the-job training  
**4** - Work experience in a related occupation  
**5** - Postsecondary non-degree award  
**6** - Associate's degree  
**7** - Bachelor's degree  
**8** - Bachelor's or higher degree, plus work experience  
**9** - First professional degree  
**10** - Masters

Source: EMSI 2013.2 Class of Worker Dataset-QCEW Employees

## LOGISTICS CLUSTER

The two occupations with the highest projected growth between 2012 and 2017 are the heavy tractor trailer drivers (SOC 53-3032) and Laborers and Freight, Stock, and Material Movers (SOC 53-7062) with 520 employees and 139 employees, respectively (Table 3.13). However a number of more skilled occupations also show projected growth, including Cargo and Freight Agents (SOC 43-5011), Mechanics and Diesel Specialists (SOC 49-3031) and Supervisors (SOC 53-1031).

TABLE 3.13:  
LOGISTICS CLUSTER

SOC	OCCUPATION	EMPLOYED IN INDUSTRY GROUP (2010)	EMPLOYED IN INDUSTRY GROUP (2012)	EMPLOYED IN INDUSTRY GROUP (2017)	2012-2017 CHANGE	% CHANGE	MEDIAN HOURLY EARNINGS	EDUCATION LEVEL*
53-3032	Heavy and Tractor-Trailer Truck Drivers	1,933	2,112	2,632	520	24.6%	19.23	1
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	629	686	825	139	20.3%	12.82	1
53-3033	Light Truck or Delivery Services Drivers	404	434	511	77	17.7%	12.96	1
43-5011	Cargo and Freight Agents	64	75	114	39	52.0%	17.87	1
43-9061	Office Clerks, General	164	184	223	39	21.2%	14.25	1
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	104	117	147	30	26.0%	\$19.16	5
43-5032	Dispatchers, Except Police, Fire, and Ambulance	122	130	158	28	21.5%	17.41	2

SOC	OCCUPATION	EMPLOYED IN INDUSTRY GROUP (2010)	EMPLOYED IN INDUSTRY GROUP (2012)	EMPLOYED IN INDUSTRY GROUP (2017)	2012-2017 CHANGE	% CHANGE	MEDIAN HOURLY EARNINGS	EDUCATION LEVEL*
53-7064	Packers and Packagers, Hand	210	233	260	27	12.0%	\$9.04	1
53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	113	124	150	26	21.0%	28.68	4
53-7051	Industrial Truck and Tractor Operators	216	231	256	25	10.8%	11.54	1
43-3031	Bookkeeping, Accounting, and Auditing Clerks	70	79	100	21	26.6%	17.8	2
43-5071	Shipping, Receiving, and Traffic Clerks	98	106	126	20	18.9%	13.21	1
47-2051	Cement Masons and Concrete Finishers	19	39	61	22	56.0%	17.66	2

**1** - Short-term on-the-job training  
**2** - Moderate-term on-the-job training  
**3** - Long-term on-the-job training  
**4** - Work experience in a related occupation  
**5** - Postsecondary non-degree award  
**6** - Associate's degree  
**7** - Bachelor's degree  
**8** - Bachelor's or higher degree, plus work experience  
**9** - First professional degree  
**10** - Masters

Source: EMSI 2013.2 Class of Worker Dataset-QCEW Employees

## MANUFACTURING CLUSTER

As indicated previously, very few manufacturing industries are projected to grow. However, some occupations within manufacturing are expected to see growth. The Machinist occupation (SOC 51-4041) is projected to add 58 jobs, with Welders adding 35 and Assemblers adding 32 jobs (Table 3.14).

TABLE 3.14:  
MANUFACTURING CLUSTER

SOC	OCCUPATION	EMPLOYED IN INDUSTRY GROUP (2010)	EMPLOYED IN INDUSTRY GROUP (2012)	EMPLOYED IN INDUSTRY GROUP (2017)	2012-2017 CHANGE	% CHANGE	MEDIAN HOURLY EARNINGS	EDUCATION LEVEL*
51-4041	Machinists	241	277	335	58	21%	\$18.61	3
51-4121	Welders, Cutters, Solderers, and Brazers	177	230	265	35	15%	\$30.67	5
51-2092	Team Assemblers	215	242	274	32	13%	\$11.92	2
51-1011	First-Line Supervisors of Production and Operating Workers	152	163	186	23	14%	\$26.08	4
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	101	95	115	20	21%	\$12.91	2
49-9041	Industrial Machinery Mechanics	89	110	129	19	17%	\$25.88	3
17-2141	Mechanical Engineers	78	90	109	19	21%	\$44.11	7

SOC	OCCUPATION	EMPLOYED IN INDUSTRY GROUP (2010)	EMPLOYED IN INDUSTRY GROUP (2012)	EMPLOYED IN INDUSTRY GROUP (2017)	2012-2017 CHANGE	% CHANGE	MEDIAN HOURLY EARNINGS	EDUCATION LEVEL*
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	66	58	75	17	29%	\$16.93	2
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	41	40	55	15	38%	\$16.54	2
53-3032	Heavy and Tractor-Trailer Truck Drivers	214	202	216	14	7%	\$18.50	1
17-2011	Aerospace Engineers	169	127	141	14	11%	\$49.29	7
17-2112	Industrial Engineers	74	71	85	14	20%	\$50.79	7
41-4012	Sales Reps, Wholesale & Mfg, Except Technical and Scientific Products	75	79	92	13	16%	\$30.30	2
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	103	110	122	12	11%	\$11.74	1
17-3023	Electrical and Electronics Engineering Technicians	28	46	58	12	26%	\$37.25	6
51-9121	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	56	66	77	11	17%	\$13.27	2
11-3051	Industrial Production Managers	53	57	68	11	19%	\$50.34	8
51-9198	Helpers--Production Workers	38	35	46	11	31%	\$12.52	1
15-1133	Software Developers, Systems Software	26	22	33	11	50%	\$56.88	7
51-2022	Electrical and Electronic Equipment Assemblers	17	16	27	11	69%	\$9.77	1
11-1021	General and Operations Managers	102	110	120	10	9%	\$42.37	8
43-9061	Office Clerks, General	72	80	90	10	13%	\$13.18	1
17-2071	Electrical Engineers	23	25	35	10	40%	\$47.85	7
<b>1</b> - Short-term on-the-job training <b>2</b> - Moderate-term on-the-job training <b>3</b> - Long-term on-the-job training <b>4</b> - Work experience in a related occupation <b>5</b> - Postsecondary non-degree award				<b>6</b> - Associate's degree <b>7</b> - Bachelor's degree <b>8</b> - Bachelor's or higher degree, plus work experience <b>9</b> - First professional degree <b>10</b> - Masters				

Source: EMSI 2013.2 Class of Worker Dataset-QCEW Employees



## 4. SKILLS ANALYSIS

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In this section of the report we focus on analyzing the unemployed labor force who had previously worked in any one of the industry clusters in an effort to analyze the match (or mismatch) between the labor force and future jobs. In general, it does appear that the educational profile of the County's underutilized labor force matches the educational and training requirements of future jobs.

Of the five clusters, agriculture is projected to grow the most new jobs between 2012 and 2017, at 8,886 over a five year period, or 1,777 per year on average (Table 4-1). The bulk of the 8,886 new jobs are in the lowest education and training categories of short-term OJT (7,038) and moderate-term OJT (851). The lower-middle rung of the educational/training ladder comprised of jobs requiring long-term OJT and/or relevant work experience are also projected to increase by almost 800 new jobs over the next five years. While a substantial number of new jobs are projected in the Agricultural cluster over the next five years, it is important to remember the seasonal nature of this cluster, which helps explain this cluster's high unemployment numbers. There are slightly over 13,800 persons who are unemployed who previously worked in industries within the Agricultural cluster. Of the 13,800 unemployed persons, the bulk is in the lower educational attainment rung, of no high school diploma (6,774). Another 6,000 are in the lower-middle educational attainment rung of some college (2,170) and high school diploma (3,884). On the surface, with respect to educational qualifications, the unemployed labor force with previous experience in Agricultural cluster industries matches the educational and training requirements of anticipated jobs within the Agricultural cluster, as both are in the lower- and lower-middle rungs of educational/training ladder.

**TABLE 4.1:  
COMPARISON OF UNEMPLOYED LABOR FORCE BY CLUSTER BY EDUCATIONAL ATTAINMENT TO NEW JOBS  
BY SAME CLUSTER BY EDUCATION AND TRAINING: KERN-INYO-MONO  
(AGRICULTURE - ALL SUB CLUSTERS)**

Educational Attainment	Unemployed Labor Force in Sub-Cluster			Education and Training Requirements	Job Projections By Educational Attainment		
	Mgrs/ Supervisors	Not Managers	Total Underutilized Labor Force		Mgrs/ Supervisors	Not Managers	Total
01 Advanced degree	39	44	83	01 Advanced degree	0	0	<b>0</b>
02 Bachelor's	55	207	262	02 Bachelor's	128	31	<b>160</b>
03 Associate's	79	497	577	03 Associate's	0	39	<b>39</b>
04 Some college	355	1,815	2,170	04 Work experience in related occupation	371	69	<b>440</b>
05 HS diploma/GED	201	3,683	3,884	05 Long-term OJT	0	358	<b>358</b>
06 No HS diploma/GED	165	6,609	6,774	06 Moderate-term OJT	0	851	<b>851</b>
99 NA	15	50	65	07 Short-term OJT	25	7,013	<b>7,038</b>
	<b>909</b>	<b>1,819</b>	<b>13,814</b>		<b>525</b>	<b>1,050</b>	<b>8,886</b>

Source: ADE, Inc. based on US Census PUMS One-year Sample for years 2009–2011 and EMSI Occupational Projections.

The Health and Wellness cluster is expected to generate the most jobs after the Ag cluster, at 4,665 over five years, or 933 per year on average (see Table 4-2). The new jobs are distributed somewhat evenly across the educational and training categories, with the shape of the job distribution somewhat similar to that of a glass Coca-Cola bottle – narrow at the top (jobs requiring a BA and above), somewhat wider in the middle (jobs requiring an AA), then somewhat tapered at the lower-middle (jobs requiring relevant work experience or long-term OJT), and finally wide at the bottom (jobs requiring moderate- or short-term OJT). While the bulk of the 4,665 new jobs are in the lowest education and training categories of short-term OJT (1,504) and moderate-term OJT (873), the middle rung of the educational/training ladder (jobs requiring an AA) is well-represented, at 1,146 anticipated new jobs over the 2012-2017 period. The lower-middle rung comprised of jobs requiring long-term OJT and/or relevant work experience are also projected to increase by combined 764 new jobs over the next five years. With respect to the labor force, there are slightly over 1,500 persons who are unemployed who previously worked in industries within the Health and Wellness cluster. Of the 1,500 unemployed persons, the bulk is in the lower-middle educational attainment rungs, of some college (637) and high school diploma (590). Another 177 are in the lower educational attainment rung with no high school diploma. There are 17 unemployed persons with an AA, which is the middle rung of the educational

attainment ladder. On the surface, with respect to educational qualifications, the unemployed labor force with previous experience in Health and Wellness cluster industries matches the educational and training requirements of anticipated jobs within the cluster, although not precisely: the distribution of the latter assumes a Coke bottle shape, whereas the unemployed labor force is most heavy around the lower-middle section. Moreover, on the surface, there appears to be opportunities in store for unemployed persons with an AA, as the number of new jobs period requiring an AA over the 2012-2017, at 1,146, vastly outnumbers the number of unemployed persons with health cluster experience (17).

**TABLE 4.2:  
COMPARISON OF UNEMPLOYED LABOR FORCE BY CLUSTER BY EDUCATIONAL ATTAINMENT TO NEW JOBS  
BY SAME CLUSTER BY EDUCATION AND TRAINING: KERN-INYO-MONO  
(HEALTHCARE - ALL SUB CLUSTERS)**

Educational Attainment	Unemployed Labor Force in Sub-Cluster			Education and Training Requirements	Job Projections By Educational Attainment		
	Mgrs/ Supervisors	Not Managers	Total Underutilized Labor Force		Mgrs/ Supervisors	Not Managers	Total
01 Advanced degree	0	81	<b>81</b>	01 Advanced degree	196	85	<b>281</b>
02 Bachelor's	27	10	<b>37</b>	02 Bachelor's	88	7	<b>95</b>
03 Associate's	0	17	<b>17</b>	03 Associate's	0	1,146	<b>1,146</b>
04 Some college	67	570	<b>637</b>	04 Work experience in related occupation	446	317	<b>763</b>
05 HS diploma/GED	64	526	<b>590</b>	05 Long-term OJT	0	1	<b>1</b>
06 No HS diploma/GED	155	22	<b>177</b>	06 Moderate-term OJT	0	873	<b>873</b>
99 NA	0	0	<b>0</b>	07 Short-term OJT	460	1,045	<b>1,504</b>
	<b>313</b>	<b>627</b>	<b>1,539</b>		<b>1,190</b>	<b>2,381</b>	<b>4,665</b>

Source: ADE, Inc. based on US Census PUMS One-year Sample for years 2009–2011 and EMSI Occupational Projections.

The third fastest growing cluster is Energy, which is projected to grow by 3,158 new jobs, most of which are in the lowest educational/training category, i.e. short-term OJT (1,259 new job between 2012-2017) and moderate-term OJT (389). The lower-middle career ladder rung consisting of jobs requiring either relevant work experience (460) or long-term OJT (777) is also expected to increase by roughly 1,200 new jobs. Regarding the underutilized labor force with experience in the Energy cluster, most are also in the lower-middle educational attainment rungs, with 150 with some college and 319 with a high school diploma. On the surface, there appears to be a match between educational backgrounds of the labor force and educational requirements of the new jobs in the Energy Cluster.

**TABLE 4.3:  
COMPARISON OF UNEMPLOYED LABOR FORCE BY CLUSTER BY EDUCATIONAL ATTAINMENT TO NEW JOBS  
BY SAME CLUSTER BY EDUCATION AND TRAINING: KERN-INYO-MONO  
(ENERGY - ALL SUB CLUSTERS)**

Educational Attainment	Unemployed Labor Force in Sub-Cluster			Education and Training Requirements	Job Projections By Educational Attainment		
	Mgrs/ Supervisors	Not Managers	Total Underutilized Labor Force		Mgrs/ Supervisors	Not Managers	Total
01 Advanced degree	0	39	<b>39</b>	01 Advanced degree	0	0	<b>0</b>
02 Bachelor's	17	42	<b>59</b>	02 Bachelor's	191	66	<b>257</b>
03 Associate's	0	0	<b>0</b>	03 Associate's	0	16	<b>16</b>
04 Some college	31	119	<b>150</b>	04 Work experience in related occupation	276	183	<b>460</b>
05 HS diploma/GED	3	316	<b>319</b>	05 Long-term OJT	1	776	<b>777</b>
06 No HS diploma/GED	0	280	<b>280</b>	06 Moderate-term OJT	0	389	<b>389</b>
99 NA	0	0	<b>0</b>	07 Short-term OJT	0	1,259	<b>1,259</b>
	<b>50</b>	<b>101</b>	<b>847</b>		<b>469</b>	<b>938</b>	<b>3,158</b>

Source: ADE, Inc. based on US Census PUMS One-year Sample for years 2009–2011 and EMSI Occupational Projections.

Over the next 5 years, slightly over 1,300 new jobs (or 262 new jobs a year on average) are expected to be created in the Logistics cluster, while there are an estimated 282 unemployed persons with background in logistics. The unemployed persons are mostly in the lowest educational attainment levels of no high school diploma (217 unemployed persons out of 282 overall), a trend that generally corresponds to educational/training requirements of the bulk of future new jobs in the Logistics cluster, i.e. short-term OJT (1,107, or 221 jobs per year).

**TABLE 4.4:  
COMPARISON OF UNEMPLOYED LABOR FORCE BY CLUSTER BY EDUCATIONAL ATTAINMENT TO NEW JOBS  
BY SAME CLUSTER BY EDUCATION AND TRAINING: KERN-INYO-MONO  
(LOGISTICS - ALL SUB CLUSTERS)**

Educational Attainment	Unemployed Labor Force in Sub-Cluster			Education and Training Requirements	Job Projections By Educational Attainment		
	Mgrs/ Supervisors	Not Managers	Total Underutilized Labor Force		Mgrs/ Supervisors	Not Managers	Total
01 Advanced degree	27	0	27	01 Advanced degree	0	0	0
02 Bachelor's	0	0	0	02 Bachelor's	31	16	47
03 Associate's	0	18	18	03 Associate's	0	0	0
04 Some college	0	20	20	04 Work experience in related occupation	58	0	58
05 HS diploma/GED	0	0	0	05 Long-term OJT	0	15	15
06 No HS diploma/GED	0	217	217	06 Moderate-term OJT	0	84	84
99 NA	0	0	0	07 Short-term OJT	0	1,107	1,107
	<b>27</b>	<b>54</b>	<b>282</b>		<b>89</b>	<b>179</b>	<b>1,311</b>

Source: ADE, Inc. based on US Census PUMS One-year Sample for years 2009–2011 and EMSI Occupational Projections.

Over the next 5 years, slightly over 800 new jobs (or 166 new jobs a year on average) are expected to be created in the Manufacturing cluster (excluding food processing, which is in the Agricultural Cluster), while there are an estimated 478 unemployed persons with background in manufacturing. The unemployed persons are mostly in the lower-middle educational attainment levels with high school diploma (196 unemployed persons) and some college (148), with another 134 unemployed persons in the lowest educational attainment run of no high school diploma. While the unemployed Manufacturing cluster labor force is in the lower and lower-middle educational attainment categories, the new jobs are fairly dispersed across all educational training categories, except the highest (Master's degree or above), though new job opportunities coincide with where the unemployed labor force is distributed along educational categories.

**TABLE 4.5:  
COMPARISON OF UNEMPLOYED LABOR FORCE BY CLUSTER BY EDUCATIONAL ATTAINMENT TO NEW JOBS  
BY SAME CLUSTER BY EDUCATION AND TRAINING: KERN-INYO-MONO  
(MANUFACTURING - ALL SUB CLUSTERS EXCEPT FOOD PROCESSING)**

Educational Attainment	Unemployed Labor Force in Sub-Cluster			Education and Training Requirements	Job Projections By Educational Attainment		
	Mgrs/ Supervisors	Not Managers	Total Underutilized Labor Force		Mgrs/ Supervisors	Not Managers	Total
01 Advanced degree	0	0	0	01 Advanced degree	0	0	0
02 Bachelor's	0	0	0	02 Bachelor's	60	133	193
03 Associate's	0	0	0	03 Associate's	0	48	48
04 Some college	43	105	148	04 Work experience in related occupation	40	65	105
05 HS diploma/GED	9	187	196	05 Long-term OJT	10	117	127
06 No HS diploma/GED	0	134	134	06 Moderate-term OJT	0	228	228
99 NA	0	0	0	07 Short-term OJT	0	124	124
	<b>52</b>	<b>104</b>	<b>478</b>		<b>110</b>	<b>221</b>	<b>825</b>

Source: ADE, Inc. based on US Census PUMS One-year Sample for years 2009–2011 and EMSI Occupational Projections.

# 5. TRAINING RESOURCES

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This section identifies whether training programs exist for the occupations in the growing industry clusters, which are Agriculture, Health and Welfare, Energy, Logistics, and Manufacturing (Other). In Table 5-1 below, occupations under any of the five clusters that are assigned a dash (" --- ") are not expected to grow. Occupations assigned a number including zero ("0") are expected to grow and the assigned number reflects the number of job training programs whose services are relevant to the corresponding occupation. For example, social and human services assistant (OCCSOC 21-1093) is an occupation within the health and Wellness cluster that does not require a college degree and instead requires only short-term on-the-job-training; this occupation is expected grow expected to increase in number, and there are three job training programs that are specific to this occupation. There will be an increase in the number of registered nurses (OCCSOC 29-1111) in the near future but there are no job training programs specifically targeting this occupation, according to the California EDD ETPL database.

**TABLE 5-1:  
NUMBER OF JOB TRAINING PROGRAMS FOR OCCUPATIONS IN TOP FOUR GROWING CLUSTERS: KERN-INYO-MONO THREE-COUNTY REGION  
DATA ONLY FOR OCCUPATIONS REQUIRING NO MORE THAN AN AA DEGREE**

OCCSOC	DESCRIPTION	Agriculture (35/21)	Health and Wellness (28/10)	Energy (55/33)	Logistics (9/6)	Manufacturing - Other (44/21)	Education / Training Requirements
11-1021	General and Operations Managers	3	---	3	---	3	Bachelor's
11-9021	Construction Managers	---	---	0	---	---	Bachelor's
11-9041	Architectural and Engineering Managers	---	---	0	---	0	Bachelor's
11-9111	Medical and Health Services Managers	---	0	---	---	---	Bachelor's
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	---	---	0	---	0	05 Long-term OJT
13-1051	Cost Estimators	---	---	0	---	0	Bachelor's
13-1078	Human Resources, Training, and Labor Relations Specialists, All Other	0	---	---	---	---	Bachelor's
17-2011	Aerospace Engineers	---	---	0	---	0	Bachelor's
17-2071	Electrical Engineers	---	---	1	---	1	Bachelor's
17-2072	Electronics Engineers, Except Computer	---	---	0	---	0	Bachelor's
17-2112	Industrial Engineers	---	---	0	---	0	Bachelor's
17-2141	Mechanical Engineers	---	---	---	---	0	Bachelor's
17-2171	Petroleum Engineers	---	---	0	---	---	Bachelor's
17-3023	Electrical and Electronics Engineering Technicians	---	---	1	---	1	Associate's
19-2042	Geoscientists, Except Hydrologists and Geographers	---	---	0	---	---	Bachelor's
19-4041	Geological and Petroleum Technicians	---	---	1	---	---	Associate's
21-1093	Social and Human Service Assistants	---	3	---	---	---	Short-term OJT
29-1051	Pharmacists	---	0	---	---	---	Advanced degree
29-1069	Physicians and Surgeons, All Other	---	0	---	---	---	Advanced degree
29-1111	Registered Nurses	---	0	---	---	---	Associate's
29-1123	Physical Therapists	---	0	---	---	---	Advanced degree
29-2037	Radiologic Technologists and Technicians	---	0	---	---	---	Associate's
29-2041	Emergency Medical Technicians and Paramedics	---	3	---	---	---	Work experience in related occupation
29-2052	Pharmacy Technicians	---	6	---	---	---	Moderate-term OJT
29-2056	Veterinary Technologists and Technicians	0	---	---	---	---	Associate's



OCCSOC	DESCRIPTION	Agriculture (35/21)	Health and Wellness (28/10)	Energy (55/33)	Logistics (9/6)	Manufacturing - Other (44/21)	Education / Training Requirements
29-2061	Licensed Practical and Licensed Vocational Nurses	---	4	---	---	---	Work experience in related occupation
31-1011	Home Health Aides	---	4	---	---	---	Short-term OJT
31-1012	Nursing Aides, Orderlies, and Attendants	---	8	---	---	---	Work experience in related occupation
31-9091	Dental Assistants	---	3	---	---	---	Work experience in related occupation
31-9092	Medical Assistants	---	11	---	---	---	Moderate-term OJT
31-9095	Pharmacy Aides	---	1	---	---	---	Short-term OJT
31-9799	Healthcare Support Workers, All Other	---	0	---	---	---	Short-term OJT
35-2021	Food Preparation Workers	0	---	---	---	---	Short-term OJT
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	0	---	---	---	---	Short-term OJT
37-2021	Pest Control Workers	0	---	---	---	---	Moderate-term OJT
37-3011	Landscaping and Groundskeeping Workers	0	---	---	---	---	Short-term OJT
39-9021	Personal Care Aides	---	0	---	---	---	Short-term OJT
41-1011	First-Line Supervisors of Retail Sales Workers	2	2	---	---	---	Work experience in related occupation
41-2011	Cashiers	1	1	---	---	---	Short-term OJT
41-2031	Retail Salespersons	---	2	---	---	---	Short-term OJT
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	---	0	0	---	0	Bachelor's
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	0	---	0	---	0	Moderate-term OJT
43-1011	First-Line Supervisors of Office and Administrative Support Workers	2	2	---	2	2	Work experience in related occupation
43-3021	Billing and Posting Clerks	---	4	---	---	4	Short-term OJT
43-3031	Bookkeeping, Accounting, and Auditing Clerks	1	---	1	---	1	Moderate-term OJT
43-4051	Customer Service Representatives	4	---	---	---	4	Short-term OJT
43-4171	Receptionists and Information Clerks	---	3	---	---	3	Short-term OJT
43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	---	---	---	---	---	Short-term OJT
43-5011	Cargo and Freight Agents	0	---	---	0	---	Short-term OJT

OCCSOC	DESCRIPTION	Agriculture (35/21)	Health and Wellness (28/10)	Energy (55/33)	Logistics (9/6)	Manufacturing - Other (44/21)	Education / Training Requirements
43-5021	Couriers and Messengers	---	---	---	0	---	Short-term OJT
43-5032	Dispatchers, Except Police, Fire, and Ambulance	0	---	---	---	0	Moderate-term OJT
43-5071	Shipping, Receiving, and Traffic Clerks	---	---	0	0	0	Short-term OJT
43-5081	Stock Clerks and Order Fillers	0	0	0	---	0	Short-term OJT
43-6013	Medical Secretaries	---	9	---	---	---	Moderate-term OJT
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	---	---	2	---	2	Short-term OJT
43-9061	Office Clerks, General	5	5	5	---	5	Short-term OJT
45-2041	Graders and Sorters, Agricultural Products	0	---	---	---	---	Short-term OJT
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	0	---	---	---	---	Short-term OJT
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	---	---	0	---	---	Work experience in related occupation
47-2031	Carpenters	---	---	1	---	---	Long-term OJT
47-2051	Cement Masons and Concrete Finishers	---	---	1	---	1	Moderate-term OJT
47-2061	Construction Laborers	---	---	1	---	1	Short-term OJT
47-2073	Operating Engineers and Other Construction Equipment Operators	---	---	1	---	1	Moderate-term OJT
47-2081	Drywall and Ceiling Tile Installers	---	---	---	---	---	Moderate-term OJT
47-2082	Tapers	---	---	---	---	---	Moderate-term OJT
47-2111	Electricians	---	---	0	---	0	Long-term OJT
47-2151	Pipelayers	---	---	0	---	---	Short-term OJT
47-2152	Plumbers, Pipefitters, and Steamfitters	---	---	1	---	---	Long-term OJT
47-2161	Plasterers and Stucco Masons	---	---	---	---	---	Long-term OJT
47-2181	Roofers	---	---	---	---	---	Moderate-term OJT
47-3013	Helpers--Electricians	---	---	1	---	---	Short-term OJT
47-3015	Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	---	---	0	---	---	Short-term OJT
47-5011	Derrick Operators, Oil and Gas	---	---	0	---	---	Short-term OJT
47-5012	Rotary Drill Operators, Oil and Gas	---	---	0	---	---	Moderate-term OJT
47-5013	Service Unit Operators, Oil, Gas, and Mining	---	---	0	---	---	Moderate-term OJT
47-5021	Earth Drillers, Except Oil and Gas	---	---	0	---	---	Moderate-term OJT

OCCSOC	DESCRIPTION	Agriculture (35/21)	Health and Wellness (28/10)	Energy (55/33)	Logistics (9/6)	Manufacturing - Other (44/21)	Education / Training Requirements
47-5071	Roustabouts, Oil and Gas	---	---	2	---	---	Moderate-term OJT
47-5081	Helpers--Extraction Workers	---	---	0	---	---	Short-term OJT
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	---	---	0	---	0	Work experience in related occupation
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	---	---	0	---	---	Work experience in related occupation
49-3011	Aircraft Mechanics and Service Technicians	---	---	---	---	3	Work experience in related occupation
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	1	---	---	---	1	Work experience in related occupation
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	---	---	1	---	---	Long-term OJT
49-3043	Rail Car Repairers	---	---	---	0	---	Long-term OJT
49-9041	Industrial Machinery Mechanics	4	---	4	---	4	Long-term OJT
49-9051	Electrical Power-Line Installers and Repairers	---	---	2	---	---	Long-term OJT
49-9052	Telecommunications Line Installers and Repairers	---	---	0	---	---	Long-term OJT
49-9071	Maintenance and Repair Workers, General	0	---	0	---	0	Moderate-term OJT
51-1011	First-Line Supervisors of Production and Operating Workers	0	---	0	---	0	Work experience in related occupation
51-2022	Electrical and Electronic Equipment Assemblers	---	---	0	---	0	Short-term OJT
51-2023	Electromechanical Equipment Assemblers	---	---	0	---	0	Short-term OJT
51-2092	Team Assemblers	1	---	1	---	1	Moderate-term OJT
51-2093	Timing Device Assemblers and Adjusters	---	---	0	---	---	Moderate-term OJT
51-3021	Butchers and Meat Cutters	0	---	---	---	---	Long-term OJT
51-3092	Food Batchmakers	0	---	---	---	---	Short-term OJT
51-4041	Machinists	---	2	---	---	2	Long-term OJT
51-4121	Welders, Cutters, Solderers, and Brazers	---	---	17	---	17	Work experience in related occupation
51-8013	Power Plant Operators	---	---	---	---	---	Long-term OJT
51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	---	---	0	---	---	Long-term OJT
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	---	---	1	---	1	Moderate-term OJT
51-9111	Packaging and Filling Machine Operators and Tenders	0	---	---	---	0	Moderate-term OJT
51-9399	Production Workers, All Other	0	---	---	---	---	Moderate-term OJT

<b>OCCSOC</b>	<b>DESCRIPTION</b>	<b>Agriculture (35/21)</b>	<b>Health and Wellness (28/10)</b>	<b>Energy (55/33)</b>	<b>Logistics (9/6)</b>	<b>Manufacturing - Other (44/21)</b>	<b>Education / Training Requirements</b>
53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	0	---	---	---	0	Work experience in related occupation
53-3021	Bus Drivers, Transit and Intercity	---	---	---	---	---	Moderate-term OJT
53-3022	Bus Drivers, School or Special Client	---	---	---	0	---	Moderate-term OJT
53-3031	Driver/Sales Workers	0	---	---	---	---	Short-term OJT
53-3032	Heavy and Tractor-Trailer Truck Drivers	3	---	3	---	3	Short-term OJT
53-3033	Light Truck or Delivery Services Drivers	1	---	1	1	1	Short-term OJT
53-3041	Taxi Drivers and Chauffeurs	---	---	---	1	---	Short-term OJT
53-6099	Transportation Workers, All Other	---	---	---	---	---	Short-term OJT
53-7032	Excavating and Loading Machine and Dragline Operators	---	---	0	---	---	Moderate-term OJT
53-7051	Industrial Truck and Tractor Operators	2	---	---	---	2	Short-term OJT
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	0	---	0	0	0	Short-term OJT
53-7064	Packers and Packagers, Hand	0	---	---	---	---	Short-term OJT

Source: Applied Development Economics, based on EMSI and California EDD LMID

There are approximately 35 occupations that are expected to increase in numbers within the Agricultural cluster. For 21 of these occupations, there are no job training programs, according to the California EDD ETPL database. There are 28 occupations within Health and Wellness; for 10 of these growing occupations, there are no job training programs. There are 55 growing occupations in Energy and, for 33 of these occupations, there are no job training programs.

Below we identify the WIA-approved job training providers that correspond to the occupational needs in the table above (Table 5.2). There are 12 job training programs providing servicing that are relevant to growing occupations in the Agricultural cluster, 15 providers whose services are relevant to Health and Wellness occupations, 19 providers whose services are aimed at occupations in Energy, and 19 job training providers whose programs are relevant to growing occupations in Manufacturing.

**TABLE 5-2:  
SPECIFIC JOB TRAINING PROVIDERS OFFERING TRAINING FOR OCCUPATIONS IDENTIFIED IN TOP FOUR GROWING CLUSTERS**

<b>Agriculture (12)</b>	<b>Health and Wellness (15)</b>	<b>Energy (19)</b>	<b>Logistics (3)</b>	<b>Manufacturing (19)</b>
DASMESH TRUCK DRIVING SCHOOL, BAKERSFIELD CA 93307	BOSTON REED HANFORD CA 93230	AMERICAN WELL CONTROL & SAFETY BAKERSFIELD CA 93308	KERN COMMUNITY COLLEGE DIST. RIDGECREST CA 93555	ASSOC BLDRS&CONTRACTRS CENT CA, BAKERSFIELD CA 93308
GOODWILL INDUSTRIES BAKERSFIELD CA 93389	CA COLL OF VOCATIONAL CAREERS BAKERSFIELD CA 93301	ASSOC BLDRS&CONTRACTRS CENT CA BAKERSFIELD CA 93308	KERN HIGH SCHOOL DISTRICT BAKERSFIELD CA 93301	DASMESH TRUCK DRIVING SCHOOL, BAKERSFIELD CA 93307
INSTITUTO HISPANO AMERICANO BAKERSFIELD CA 93301	CLINICAL TRAINING INSTITUTE BAKERSFIELD CA 93309	DASMESH TRUCK DRIVING SCHOOL BAKERSFIELD CA 93307	WESTERN TRUCK SCHOOL BAKERSFIELD CA 93308	GOODWILL INDUSTRIES BAKERSFIELD CA 93389
KAPLAN COLLEGE, BAKERSFIELD BAKERSFIELD CA 93304	DELANO ADULT SCHOOL DELANO CA 93215	INSTITUTO HISPANO AMERICANO BAKERSFIELD CA 93301		INSTITUTO HISPANO AMERICANO BAKERSFIELD CA 93301
KERN COMMUNITY COLLEGE DIST. RIDGECREST CA 93555	INSTITUTO HISPANO AMERICANO BAKERSFIELD CA 93301	JOHN LOPEZ WELDING SCHOOL BAKERSFIELD CA 93312		JOHN LOPEZ WELDING SCHOOL BAKERSFIELD CA 93312
KERN HIGH SCHOOL DISTRICT BAKERSFIELD CA 93301	KAPLAN COLLEGE, BAKERSFIELD BAKERSFIELD CA 93304	KAPLAN COLLEGE, BAKERSFIELD BAKERSFIELD CA 93304		KAPLAN COLLEGE, BAKERSFIELD BAKERSFIELD CA 93304
MEXICAN AMER OPPORTUNITY FOUND BAKERSFIELD CA 93301	KERN COMMUNITY COLLEGE DIST. RIDGECREST CA 93555	KERN COMMUNITY COLLEGE DIST. RIDGECREST CA 93555		KERN COMMUNITY COLLEGE DIST. RIDGECREST CA 93555
PROTEUS, INC DELANO CA 93215	KERN HIGH SCHOOL DISTRICT BAKERSFIELD CA 93301	KERN HIGH SCHOOL DISTRICT BAKERSFIELD CA 93301		KERN HIGH SCHOOL DISTRICT BAKERSFIELD CA 93301

<b>Agriculture (12)</b>	<b>Health and Wellness (15)</b>	<b>Energy (19)</b>	<b>Logistics (3)</b>	<b>Manufacturing (19)</b>
SAN JOAQUIN VALLEY COLLEGE BAKERSFIELD CA 93309	MEXICAN AMER OPPORTUNITY FOUND BAKERSFIELD CA 93301	KERN HIGH SCHOOL DISTRICT-ROC BAKERSFIELD CA 93307		KERN HIGH SCHOOL DISTRICT-ROC BAKERSFIELD CA 93307
TAFT COLLEGE TAFT CA 93268	OWENS VALLEY CAREER DEV CENTER BISHOP CA 93514	MEXICAN AMER OPPORTUNITY FOUND BAKERSFIELD CA 93301		MEXICAN AMER OPPORTUNITY FOUND BAKERSFIELD CA 93301
UNION TRUCK DRIVING SCHOOL BAKERSFIELD CA 93307	PROTEUS, INC DELANO CA 93215	OWENS VALLEY CAREER DEV CENTER BISHOP CA 93514		OWENS VALLEY CAREER DEV CENTER BISHOP CA 93514
WESTERN TRUCK SCHOOL BAKERSFIELD CA 93308	SAN JOAQUIN VALLEY COLLEGE BAKERSFIELD CA 93309	PROTEUS, INC DELANO CA 93215		PROTEUS, INC DELANO CA 93215
	SANTA BARBARA BUSINESS COLLEGE BAKERSFIELD CA 93309	ROCKWELL AUTOMATION, INC. BAKERSFIELD CA 93308		ROCKWELL AUTOMATION, INC. BAKERSFIELD CA 93308
	TAFT COLLEGE TAFT CA 93268	SAFETY SEMINARS BAKERSFIELD CA 93312		SAFETY SEMINARS BAKERSFIELD CA 93312
	ZOOM GRAPHICS BAKERSFIELD CA 93301	SAN JOAQUIN VALLEY COLLEGE BAKERSFIELD CA 93309		SAN JOAQUIN VALLEY COLLEGE BAKERSFIELD CA 93309
		TAFT COLLEGE TAFT CA 93268		TAFT COLLEGE TAFT CA 93268
		UNION TRUCK DRIVING SCHOOL BAKERSFIELD CA 93307		UNION TRUCK DRIVING SCHOOL BAKERSFIELD CA 93307
		WESTEC SHAFTER CA 93263		WESTERN TRUCK SCHOOL BAKERSFIELD CA 93308
		WESTERN TRUCK SCHOOL BAKERSFIELD CA 93308		ZOOM GRAPHICS, BAKERSFIELD CA 93301

Specific Job Training Providers Offering Training For Occupations Identified in Top Four Growing Clusters

# APPENDIX A: CLUSTER DEFINITIONS

## AGRICULTURE CLUSTER

CLUSTER COMPONENTS BY NAICS CODE	
<b>Agriculture Cluster - Production</b>	
111	Crop Production
112	Animal Production
1141	Fishing
115112	Soil Preparation, Planting, Cultivating
115113	Crop Harvesting, Primarily by Machine
115114	Postharvest Crop Activities
115115	Farm Labor Contractors and Crew Leaders
115116	Farm Mgmt Svcs
115210	Support Activities for Animal Production
<b>Agriculture Cluster - Processing</b>	
311	Food Manufacturing
312	Beverage and Tobacco Product Manufacturing
321920	Wood Container and Pallet Mfg
322211	Corrugated and Solid Fiber Box Mfg
<b>Agriculture Cluster - Distribution</b>	
424410	General Line Grocery Merchant Wholesalers
424430	Dairy Product Wholesalers
424450	Confectionery Wholesalers
424470	Meat & Meat Product Wholesalers
424480	Fresh Fruit/Veg Wholesalers
424490	Other Grocery Wholesalers
424820	Wine, Alcoholic Beverage Wholesalers
424910	Farm Supplies Wholesalers
424930	Flower, Nursery Stock, and Florists' Supplies Merchant Wholesalers
445110	Supermarkets, Other Grocery
445120	Convenience Stores
445210	Meat Markets
445230	Fruit and Vegetable Markets
445291	Baked Goods Stores
445292	Confectionery and Nut Stores
445299	All Other Specialty Food Stores
445310	Beer, Wine, and Liquor Stores
481111	Scheduled Passenger Air Transportation
481211	Nonscheduled Chartered Passenger Air Trans
482	Rail Transportation
484110	General Freight Trucking, Local
484121	General Freight Trucking, Long-Distance, Truckload
484122	General Freight Trucking, Long-Distance, Less Than Truckload
484220	Specialized Freight Trucking, Local
484230	Specialized Freight Trucking, Long-Dist.
488119	Other Airport Operations
488190	Other Support Activities for Air Transportation
488510	Freight Transportation Arrangement
493110	General Warehousing & Storage
493120	Refrigerated Warehousing and Storage

# APPENDIX A: CONTINUED

## AGRICULTURE CLUSTER (CONTINUED)

CLUSTER COMPONENTS BY NAICS CODE	
<b>Agriculture Cluster - Support</b>	
221310	Water Supply and Irrigation Systems
237110	Water & Sewer Line & Related Construction
325314	Fertilizer (Mixing Only) Manufacturing
325320	Pesticide and Other Agricultural Chemical Manufacturing
333111	Farm Machinery, Equip Mfg
423820	Farm, Garden Machinery, Equip Wholesalers
423830	Industrial Machinery and Equipment Merchant Wholesalers
423840	Industrial Supplies Merchant Wholesalers
423850	Service Establishment Equipment and Supplies Merchant Wholesalers
444220	Nursery, Garden Ctr, Farm Supply Stores
522292	Real Estate Credit
532490	Other Commercial and Industrial Machinery and Equipment Rental and Leasing
541380	Testing Laboratories
541613	Marketing Consulting Services
541840	Media Representatives
541870	Advertising Material Distribution Services
541890	Other Services Related to Advertising
541940	Veterinary Services
551114	Corporate, Subsidiary, Regional Offices
561110	Office Administrative Services
561311	Employment Placement Agencies
561320	Temporary Help Services
561710	Exterminating and Pest Control Services
561730	Landscaping Services
562920	Materials Recovery Facilities
811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance

Source: ADE, Inc.; data from EMSI.

Notes: Industries included in the cluster each account for a minimum of 10 jobs.



# APPENDIX A: CONTINUED

## ENERGY CLUSTER

CLUSTER COMPONENTS BY NAICS CODE			
<b>ALTERNATIVE ENERGY GENERATION/PRODUCTION</b>			
23711	Water and Sewer Line and Related Structures Construction	311223	Other Oilseed Processing
23816	Roofing Contractors	325193	Ethyl Alcohol Manufacturing
<b>ALTERNATIVE ENERGY DISTRIBUTION</b>			
423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	423720	Plumbing and Heating Equipment and Supplies (Hydronics) Merchant Wholesalers
423690	Other Electronic Parts and Equipment Merchant Wholesalers		
<b>ENERGY EFFICIENCY</b>			
23821	Electrical Contractors and Other Wiring Installation Contractors	23831	Drywall and Insulation Contractors
23822	Plumbing, Heating, and Air-Conditioning Contractors		
<b>EQUIPMENT MANUFACTURING</b>			
333132	Oil and Gas Field Machinery and Equipment Manufacturing	335110	Electric Lamp Bulb and Part Manufacturing
333414	Heating Equipment (except Warm Air Furnaces) Manufacturing	335121	Residential Electric Lighting Fixture Manufacturing
333611	Turbine and Turbine Generator Set Units Manufacturing	335122	Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	335129	Other Lighting Equipment Manufacturing
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	335311	Power, Distribution, and Specialty Transformer Manufacturing
334517	Irradiation Apparatus Manufacturing		
<b>PETROLEUM PRODUCTION &amp; PETROLEUM DISTRIBUTION</b>			
211111	Crude Petroleum and Natural Gas Extraction	424710	Petroleum Bulk Stations and Terminals
211112	Natural Gas Liquid Extraction	424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)
212399	All Other Nonmetallic Mineral Mining	486110	Pipeline Transportation of Crude Oil
213111	Drilling Oil and Gas Wells	486210	Pipeline Transportation of Natural Gas
324110	Petroleum Refineries	486910	Pipeline Transportation of Refined Petroleum Products
324199	All Other Petroleum and Coal Products Manufacturing		
<b>POWER GENERATION AND TRANSMISSION</b>			
221111	Hydroelectric Power Generation	221122	Electric Power Distribution
221112	Fossil Fuel Electric Power Generation	221210	Natural Gas Distribution
221113	Nuclear Electric Power Generation	237120	Oil and Gas Pipeline and Related Structures Construction
221119	Other Electric Power Generation	237130	Power and Communication Line and Related Structures Construction
221121	Electric Bulk Power Transmission and Control		
<b>RESEARCH &amp; SERVICES</b>			
541	Professional, Scientific, and Technical Services	533110	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)
523910	Miscellaneous Intermediation	811219	Other Electronic and Precision Equipment Repair and Maintenance
523999	Miscellaneous Financial Investment Activities	811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance

# APPENDIX A: CONTINUED

## HEALTH AND WELLNESS CLUSTER

CLUSTER COMPONENTS BY NAICS CODE			
<b>HEALTH CARE DELIVERY</b>			
621111	Offices of Physicians (except Mental Health Specialists)	621512	Diagnostic Imaging Centers
621112	Offices of Physicians, Mental Health Specialists	621512	Diagnostic Imaging Centers
621210	Offices of Dentists	621610	Home Health Care Services
621310	Offices of Chiropractors	621910	Ambulance Services
621320	Offices of Optometrists	621991	Blood and Organ Banks
621330	Offices of Mental Health Practitioners (except Physicians)	622110	General Medical and Surgical Hospitals
621340	Offices of Physical, Occupational and Speech Therapists, and Audiologists	622210	Psychiatric and Substance Abuse Hospitals
621391	Offices of Podiatrists	622310	Specialty (except Psychiatric and Substance Abuse) Hospitals
621410	Family Planning Centers	623110	Nursing Care Facilities
621420	Outpatient Mental Health and Substance Abuse Centers	623210	Residential Mental Retardation Facilities
621491	HMO Medical Centers	623220	Residential Mental Health and Substance Abuse Facilities
621492	Kidney Dialysis Centers	623311	Continuing Care Retirement Communities
621493	Freestanding Ambulatory Surgical and Emergency Centers	623312	Homes for the Elderly
621498	All Other Outpatient Care Centers	623990	Other Residential Care Facilities
621511	Medical Laboratories	624310	Vocational Rehabilitation Services
<b>MEDICAL DEVICE MANUFACTURING</b>			
339112	Surgical and Medical Instrument Manufacturing	339115	Ophthalmic Goods Manufacturing
339113	Surgical Appliance and Supplies Manufacturing	339116	Dental Laboratories
339114	Dental Equipment and Supplies Manufacturing		
<b>PHARMACEUTICALS</b>			
325411	Medicinal and Botanical Manufacturing	325413	In-Vitro Diagnostic Substance Manufacturing
325412	Pharmaceutical Preparation Manufacturing	325414	Biological Product (except Diagnostic) Manufacturing
<b>SUPPLIES AND SERVICES</b>			
423450	Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers	424210	Drugs and Druggists' Sundries Merchant Wholesalers
423460	Ophthalmic Goods Merchant Wholesalers	813212	Voluntary Health Organizations
423490	Other Professional Equipment and Supplies Merchant Wholesalers		
<b>WELLNESS AND FITNESS</b>			
446110	Pharmacies and Drug Stores	532291	Home Health Equipment Rental
446130	Optical Goods Stores	621399	Offices of All Other Miscellaneous Health Practitioners
446191	Food (Health) Supplement Stores	621999	All Other Miscellaneous Ambulatory Health Care Services
446199	All Other Health and Personal Care Stores	812191	Diet and Weight Reducing Centers

# APPENDIX A: CONTINUED

## LOGISTICS CLUSTER

CLUSTER COMPONENTS BY NAICS CODE			
<b>AIR, RAIL, WATER TRANSPORTATION</b>			
481111	Scheduled Passenger Air Transportation	483211	Inland Water Freight Transportation
481112	Scheduled Freight Air Transportation	483212	Inland Water Passenger Transportation
481211	Nonscheduled Chartered Passenger Air Transportation	488111	Air Traffic Control
481212	Nonscheduled Chartered Freight Air Transportation	488119	Other Airport Operations
481219	Other Nonscheduled Air Transportation	488190	Other Support Activities for Air Transportation
482	Rail Transportation	488210	Support Activities for Rail Transportation
483111	Deep Sea Freight Transportation	488310	Port and Harbor Operations
483112	Deep Sea Passenger Transportation	488320	Marine Cargo Handling
483113	Coastal and Great Lakes Freight Transportation	488330	Navigational Services to Shipping
483114	Coastal and Great Lakes Passenger Transportation	488390	Other Support Activities for Water Transportation
<b>FREIGHT &amp; WAREHOUSING</b>			
484110	General Freight Trucking, Local	493110	General Warehousing and Storage
484121	General Freight Trucking, Long-Distance, Truckload	493120	Refrigerated Warehousing and Storage
484122	General Freight Trucking, Long-Distance, Less Than Truckload	493130	Farm Product Warehousing and Storage
484210	Used Household and Office Goods Moving	493190	Other Warehousing and Storage
484220	Specialized Freight (except Used Goods) Trucking, Local	541614	Process, Physical Distribution, and Logistics Consulting Services
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	561910	Packaging and Labeling Services
<b>OTHER SERVICES</b>			
488410	Motor Vehicle Towing	488999	All Other Support Activities for Transportation
488490	Other Support Activities for Road Transportation	492110	Couriers and Express Delivery Services
488510	Freight Transportation Arrangement	492210	Local Messengers and Local Delivery
488991	Packing and Crating		
<b>RELATED MANUFACTURING</b>			
336120	Heavy Duty Truck Manufacturing	336611	Ship Building and Repairing
336510	Railroad Rolling Stock Manufacturing	336612	Boat Building
<b>TRANSIT</b>			
485111	Mixed Mode Transit Systems	485310	Taxi Service
485112	Commuter Rail Systems	485410	School and Employee Bus Transportation
485113	Bus and Other Motor Vehicle Transit Systems	485510	Charter Bus Industry
485119	Other Urban Transit Systems	485991	Special Needs Transportation
485210	Interurban and Rural Bus Transportation	485999	All Other Transit and Ground Passenger Transportation

# APPENDIX A: CONTINUED

## MANUFACTURING CLUSTER (CROSS-CLUSTER)

CLUSTER COMPONENTS BY NAICS CODE			
<b>HEALTH &amp; WELLNESS MANUFACTURING</b>			
339112	Surgical and Medical Instrument Manufacturing	325411	Medicinal and Botanical Manufacturing
339113	Surgical Appliance and Supplies Manufacturing	325412	Pharmaceutical Preparation Manufacturing
339114	Dental Equipment and Supplies Manufacturing	325413	In-Vitro Diagnostic Substance Manufacturing
339115	Ophthalmic Goods Manufacturing	325414	Biological Product (except Diagnostic) Manufacturing
339116	Dental Laboratories		
<b>FOOD PROCESSING</b>			
311111	Dog and Cat Food Manufacturing	311920	Coffee and Tea Manufacturing
311119	Other Animal Food Manufacturing	311930	Flavoring Syrup and Concentrate Manufacturing
311211	Flour Milling	311941	Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing
311212	Rice Milling	311942	Spice and Extract Manufacturing
311213	Malt Manufacturing	311991	Perishable Prepared Food Manufacturing
311221	Wet Corn Milling	311999	All Other Miscellaneous Food Manufacturing
311222	Soybean Processing	312111	Soft Drink Manufacturing
311223	Other Oilseed Processing	312112	Bottled Water Manufacturing
311225	Fats and Oils Refining and Blending	312113	Ice Manufacturing
311230	Breakfast Cereal Manufacturing	312120	Breweries
311311	Sugarcane Mills	312130	Wineries
311312	Cane Sugar Refining	312140	Distilleries
311313	Beet Sugar Manufacturing	312210	Tobacco Stemming and Redrying
311320	Chocolate and Confectionery Manufacturing from Cacao Beans	312221	Cigarette Manufacturing
311330	Confectionery Manufacturing from Purchased Chocolate	312229	Other Tobacco Product Manufacturing
311340	Nonchocolate Confectionery Manufacturing	313111	Yarn Spinning Mills
311411	Frozen Fruit, Juice, and Vegetable Manufacturing	313112	Yarn Texturizing, Throwing, and Twisting Mills
311412	Frozen Specialty Food Manufacturing	313113	Thread Mills
311421	Fruit and Vegetable Canning	313210	Broadwoven Fabric Mills
311422	Specialty Canning	313221	Narrow Fabric Mills
311423	Dried and Dehydrated Food Manufacturing	313230	Nonwoven Fabric Mills
311511	Fluid Milk Manufacturing	313241	Weft Knit Fabric Mills
311512	Creamery Butter Manufacturing	313249	Other Knit Fabric and Lace Mills
311513	Cheese Manufacturing	316110	Leather and Hide Tanning and Finishing
311514	Dry, Condensed, and Evaporated Dairy Product Manufacturing	321113	Sawmills
311520	Ice Cream and Frozen Dessert Manufacturing	321920	Wood Container and Pallet Manufacturing
311611	Animal (except Poultry) Slaughtering	322211	Corrugated and Solid Fiber Box Manufacturing
311612	Meat Processed from Carcasses	322212	Folding Paperboard Box Manufacturing
311613	Rendering and Meat Byproduct Processing	322213	Setup Paperboard Box Manufacturing
311615	Poultry Processing	322214	Fiber Can, Tube, Drum, and Similar Products Manufacturing

# APPENDIX A: CONTINUED

## MANUFACTURING CLUSTER (CROSS-CLUSTER) (CONTINUED)

CLUSTER COMPONENTS BY NAICS CODE			
<b>FOOD PROCESSING (CONTINUED)</b>			
311711	Seafood Canning	322215	Nonfolding Sanitary Food Container Manufacturing
311712	Fresh and Frozen Seafood Processing	322291	Sanitary Paper Product Manufacturing
311811	Retail Bakeries	325411	Medicinal and Botanical Manufacturing
311812	Commercial Bakeries	325414	Biological Product (except Diagnostic) Manufacturing
311813	Frozen Cakes, Pies, and Other Pastries Manufacturing	326111	Plastics Bag and Pouch Manufacturing
311821	Cookie and Cracker Manufacturing	326160	Plastics Bottle Manufacturing
311822	Flour Mixes and Dough Manufacturing from Purchased Flour	327213	Glass Container Manufacturing
311823	Dry Pasta Manufacturing	332115	Crown and Closure Manufacturing
311830	Tortilla Manufacturing	332431	Metal Can Manufacturing
311911	Roasted Nuts and Peanut Butter Manufacturing	332439	Other Metal Container Manufacturing
311919	Other Snack Food Manufacturing	339112	Surgical and Medical Instrument Manufacturing
<b>ENERGY RELATED MANUFACTURING</b>			
333132	Oil and Gas Field Machinery and Equipment Manufacturing	311225	Fats and Oils Refining and Blending
333414	Heating Equipment (except Warm Air Furnaces) Manufacturing	311613	Rendering and Meat Byproduct Processing
333611	Turbine and Turbine Generator Set Units Manufacturing	322299	All Other Converted Paper Product Manufacturing
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use	333298	All Other Industrial Machinery Manufacturing
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	334413	Semiconductor and Related Device Manufacturing
334517	Irradiation Apparatus Manufacturing	334519	Other Measuring and Controlling Device Manufacturing
335110	Electric Lamp Bulb and Part Manufacturing	335312	Motor and Generator Manufacturing
335121	Residential Electric Lighting Fixture Manufacturing	335314	Relay and Industrial Control Manufacturing
335122	Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing	335999	All Other Miscellaneous Electrical Equipment and Component Manufacturing
335129	Other Lighting Equipment Manufacturing	311223	Other Oilseed Processing
335311	Power, Distribution, and Specialty Transformer Manufacturing	325193	Ethyl Alcohol Manufacturing
311225	Fats and Oils Refining and Blending	324110	Petroleum Refineries
335311	Power, Distribution, and Specialty Transformer Manufacturing	324199	All Other Petroleum and Coal Products Manufacturing
<b>LOGISTICS MANUFACTURING</b>			
336120	Heavy Duty Truck Manufacturing	336611	Ship Building and Repairing
336510	Railroad Rolling Stock Manufacturing		
<b>WATER TECHNOLOGY MANUFACTURING</b>			
326122	Plastics Pipe and Pipe Fitting Manufacturing	333319	Other Commercial and Service Industry Machinery Manufacturing
333111	Farm Machinery and Equipment Manufacturing	333911	Pump and Pumping Equipment Manufacturing

# APPENDIX A: CONTINUED

## MANUFACTURING CLUSTER (CROSS-CLUSTER) (CONTINUED)

CLUSTER COMPONENTS BY NAICS CODE			
<b>HEALTH &amp; WELLNESS MANUFACTURING</b>			
339112	Surgical and Medical Instrument Manufacturing	325411	Medicinal and Botanical Manufacturing
339113	Surgical Appliance and Supplies Manufacturing	325412	Pharmaceutical Preparation Manufacturing
339114	Dental Equipment and Supplies Manufacturing	325413	In-Vitro Diagnostic Substance Manufacturing
339115	Ophthalmic Goods Manufacturing	325414	Biological Product (except Diagnostic) Manufacturing
339116	Dental Laboratories		
<b>OTHER</b>			
31-33	All Manufacturing Industries not listed above		

## WATER TECHNOLOGY CLUSTER

CLUSTER COMPONENTS BY NAICS CODE			
<b>2007 NAICS U.S. TITLE</b>			
326122	Plastic Pipe and Pipe Fitting Manufacturing	333911	Pump and Pumping Equipment Manufacturing
333111	Farm Machinery and Equipment Manufacturing	423830	Industrial Machinery and Equipment Merchant Wholesalers
333319	Other Commercial and Service Industry Machinery Manufacturing	424910	Farm Supplies Merchant Wholesalers