SAN JOAQUIN VALLEY AND ASSOCIATED COUNTIES REGIONAL PLANNING UNIT

REGIONAL WORKFORCE DEVELOPMENT PLAN 2017 – 2020

The eight local workforce development boards that are party to this plan have a long history of success, both individually and as a region. Nearly forty years ago, Private Industry Councils in the San Joaquin Valley met regularly to coordinate efforts and to secure training grants to serve the region. A decade before being designated as the San Joaquin Valley and Associated Counties Regional Planning Unit ("SJVAC RPU"), the boards formed the Central California Workforce Collaborative (CCWC), recognizing the value of working together for the benefit of businesses and workers across the vast expanse of California that locals simply call "the Central Valley." The boards have initiated a planning process that will be on-going, recognizing that meaningful change does not just happen. It is the result of thoughtful planning, preparation and hard work. In a word, this Regional Plan is aspirational, setting forth goals and action steps to achieve real collaboration across local geographic boundaries and funding siloes. The boards and their workforce system partners view the Regional Plan not as a destination, but as a beginning – a launch pad for achieving a demand-driven service delivery system that harnesses the region's human capital to build a world class workforce.

Approach

Given the time available between publication of planning guidance and the date by which Regional Plans must be submitted to the State, the local WDBs determined that support was needed for both the planning process and development of the Plan. Through a competitive process, Merced County, as designated lead of a joint regional collaboration, procured two independent consultants, John Chamberlin and David Shinder, for this purpose.

The consultants immediately began to take advantage of the significant work on regional collaboration, sector initiatives, system alignment and related issues that has already been done in the Central Valley. In addition to reviewing abundant documentation on completed work, the consultants began a process of information gathering by meeting individually with each local board and key stakeholders. To gain the widest possible range of input, the consultants facilitated a series of regional planning forums where hundreds of stakeholders shared their thoughts on strategies and priorities for the workforce system. The Regional Plan, which incorporates eight Local Plans developed by each board, owes a debt of gratitude to the business, education, economic development, labor, community and other stakeholders that gave generously of their time in this process.

Guiding Principles

The plan is built upon five simple principles, which represent the values, vision and commitment of the Central Valley's workforce stakeholders. They include:

- Support for The Goals of the State Plan: Workforce preparation and economic prosperity are inextricably linked. The State Plan requires approaches that provide opportunities for all Californians to develop in-demand skills, thereby ensuring that industry has the talent it needs to succeed.
- The Workforce System is Demand-Driven: Industry drives job demand and businesses define skills needed for jobs. It is the obligation of the workforce system to train candidates in these skills, preparing them for careers.
- Regional Sector Pathways Are the Best Approach to Meeting Demand: Structured, high-quality education, training and support programs offer the greatest likelihood of success for all those preparing for careers,
- The Workforce System Encompasses All Stakeholders: The system is not merely WIOA programs. Rather, it is comprised of the work, resources and unique capabilities of all organizations and individuals with a stake in building and maintaining a prosperous, competitive economy.
- Long Term Regional Collaboration: The Central Valley Has Been Very Effective For Many Years: CCWC is a manifestation of a partnership that has existed regionally in the Central Valley for decades. This collaboration

has led to many benefits throughout the Central Valley through the joint efforts of the eight WDBs. This collaboration, alignment and partnerships happen in a variety of ways. Sometimes these efforts will encompass the entire RPU. In other instances, they may involve only a couple of workforce areas or represent coordination across two or three funding streams. Regionalism exists where it can add value and where stakeholders agree to work across boundaries.

A. The Region and Workforce System Stakeholders

The San Joaquin Valley and Associated Counties Regional Planning Unit is comprised of the ten-county area described below. There are no plans to petition for "RPU" modification.

I. RPU Boundaries: The boundaries of the RPU are those defined by the following ten California counties: Fresno, Inyo, Kern, Kings, Madera, Merced, Mono, San Joaquin, Stanislaus and Tulare. This area comprises approximately 40,760 square miles, roughly 25% of the State. The total population of the region is estimated at 4,079,609, making it more populous than 25 States.[1].

II. Regional Stakeholders in Workforce Development: Key workforce stakeholders in the region include local WDBs, education, economic development, public agencies, organized labor and community and non-profit organizations. Following is an overview of partners that contributed to the regional planning process.

Local Workforce Development Board - Parties to the Plan: The parties to the Regional Plan are the eight Local WDBs within the RPU, which include 7 boards representing single counties (Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus and Tulare) and 1 consortium board representing three counties (Kern, Inyo and Mono). Through their CCWC network, the WBDs have all been actively involved in the regional planning process by reviewing State guidance, selecting consultants to assist in the process, providing copious resource documents, organizing regional forums, and meeting regularly with the consultants as a group and individually to share insights, make decisions and set goals for regional coordination. As the designated lead for the RPU, this project has been managed by the Merced County WDB.

Businesses: Through the WDBs' intensive involvement in the regional planning process, private sector members of their boards have been apprised of key issues being addressed in the Regional Plan, thereby providing an opportunity for feedback. Businesses that participated directly in process through interaction with the regional planning consultants or analysts at Applied Development Economics, which provided labor market analysis for the plan, include the following: Adventist Health, ARC Dental, Ball Metal Food Containers, Black Oak Casino Resort, BW Implement Company, California Electric Supply, Clinica Sierra Vista, Conagra, Comcast, Delaware North, Doctors' Medical Center (Tenet), EJ Gallo, Fast Credit Union, Grimmway Farms, Golden Empire Transit, Hydrite Chemical Co., HR Professional, Jo-Ann Fabric and Craft Stores (corporate), Johasee Rebar, Kern Medical, Leprino Foods, Les Fong and Associates, Del Monte Foods Modesto, Mar Vista Resources, Memorial Medical Center, Mid-state Precast, Nestle, Pitman Family Farms, Silva Dental, Solecon Industrial, Sunsweet/Dryers, TSM Insurance Services, and Warren and Baerg Manufacturing.

Education and Training Institutions and Providers: The education community, from the K-12 system to 4-year universities, was engaged actively in the planning process, largely through participation in the regional forums. The consultants also communicated one on one with leadership from the Community College Regional Consortium, various Community College Deputy Sector Navigators, and some of the leadership from the Adult Education Block Grant consortia in the region.

Economic Development and Business-Serving Organizations: Individual discussions were held with economic development leaders from Kings, Madera, Merced and San Joaquin counties and with the Directors of the Fresno

[1] Source: U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

Business Council and the Office of Community and Economic Development at CSU Fresno. Other economic development and chamber of commerce representatives participated in the regional planning forums. Both Kings and San Joaquin counties combine their economic and workforce development staff within a single department.

Public Agencies and Programs: Elected officials, managers, and staff representing Central Valley counties and cities participated in region planning discussions. Representatives from various county welfare agencies were active in the process, as were representatives from the State Department of Rehabilitation (DOR). Individual discussions took place between the consultants and state and regional leadership from DOR. Similar conversations were held with Deputy Division Chiefs from EDD and staff from the State Employment Training Panel.

Organized Labor: Among the region's union partners joining the planning process, including those directly involved with training and apprenticeships, were IBEW Local 684, UA Plumbing and Pipefitting Local 442, the Carpenters' Training Committee of Northern California, IBEW Local 100/Fresno Area Electrical Training Center, Carpenters Local 1109, and Sheet Metal Workers Local 104.

Community and Non-Profit Organizations: CBO contributions to the planning process were robust, as dozens of community partners engaged in dialogs with other regional stakeholders. Among the many organizations participating were: Friends Outside (Modesto), H.O.P.E. (Fresno), Mexican American Opportunity Foundation (Bakersfield), Proteus (several Central Valley counties), Puentes (Stockton), Reading and Beyond (Fresno), and the Stanislaus Family Justice Center.

Additional information on the participation of regional partners in the planning process is provided in Section E.

B. Analysis of Key Economic Conditions, In-Demand Sectors and the Workforce

The overall content of this Regional Plan, along with the goals it establishes and the actions its sets in motion, are derived from an intensive review of data and analyses of economic and workforce conditions in the RPU. As indicated by the information that follows, the economy of the San Joaquin Valley defies easy definition. Its lies somewhere between one based on the historical foundations of the region as the nation's "bread basket" and an emerging viewpoint that sees the Central Valley offering unique promise for an array of burgeoning sectors, given the region's young, growing population and relative affordability for businesses and workers alike.

With both its economic promise and notable challenges, the San Joaquin Valley, has been, as stakeholders remark without hesitation, "studied to death." Hyperbole aside, there has indeed been a surprising abundance of research, study and planning concerning the economy, jobs, training and workforce preparedness in the region. Those taking on the task of transforming planning activities into a Regional Plan had to choose from many sources to provide a snapshot of the RPU's economy, demand sectors and workforce conditions. The following materials proved most useful.

Primary Economic Analysis Resources: Principal sources contributing to the economic and workforce analysis within this section include the following studies that address specific conditions within the RPU boundaries. Most, as noted, provide fairly current data, as they were published within the last six months.

- Regional Economic Sector and Skills Gap Analysis: CCWC Region, Applied Development Economics, Inc. (ADE), October 10, 2016: The eight local WDBs in the RPU, functioning collaboratively as the Central California Workforce Collaborative (CCWC), commissioned ADE, which had previously done analysis for the region, to prepare a report summarizing data concerning industry (providing NAICS references) and job growth and key labor force characteristics, along with information on the relationship of education and experience to projected jobs.
- Supplemental Information and Analysis, ADE Memorandum, December 5, 2016: As regional and local planning guidance had not yet been published by the State at the time the foregoing analysis was commissioned by the

CCWC, ADE management provided a memorandum that used information from the report to respond to the requirements for Regional Plans.

- Regional Planning Unit Summary: San Joaquin Valley and Associated Counties, California Employment Development Department, Labor Market Information Division (EDD LMID), September 1, 2016 – Revised: The information presented by this summary was critical to the region's analysis, as it provides data aggregated to the region that corresponds precisely to regional planning requirements.
- Regional Economic Analysis Profile, EDD LMID, April 2015: The Profile provides excellent synopsis for the Central Valley's top 10 industries by size – the number of workers employed in these sectors. Some of the sectors profiled are those that regional stakeholders have selected as targets for the Regional Plan.
- San Joaquin Valley Regional Industry Cluster Analysis and Action Plan, Applied Development Economics, September 2012: While this plan might be considered "out of date" given the date of its publication, it represents a decisive stage in economic and workforce development planning for the region. Under the leadership of ADE, which helmed the most recent economic and sector evaluation for the Central Valley, the report presents an analysis of the San Joaquin Valley economy and the San Joaquin Valley Regional Industry Cluster Action Plan, prepared on behalf of the California Partnership of the San Joaquin Valley out of CSU Fresno. The "Action Plan" identifies emerging opportunities for the region's comparative advantage industry clusters within the context of global, national, state and regional drivers and conditions.

Supplemental Economic Analysis Resources: As EDD LMID's recent Economic Analysis Profile did not provide cluster descriptions or data for two of the region's target sectors (advanced manufacturing or energy), the following served as resources for information on these industries or helped to fill in other gaps.

- California Manufacturing Jobs in Demand, July 2012: Given the fact that job loss has characterized manufacturing throughout the State for decades, data about opportunities for this rapidly changing sector is often harder to come by. This study provided useful information with regarding to where opportunities in the sector exist.
- California's Green Economy: Summary of Survey Results, EDD LMID, October 2010: In similar fashion to the manufacturing report, this publication helped to fill in the blanks about "green jobs," particularly as they related to the energy sector.
- Labor Market Overview: Central Valley/Mother Lode Region, California Community Colleges' Center of Excellence Mother Lode Region, May 2016: This succinct analysis provides information on population characteristics and employment in targeted industries and occupations. Because the community college regions do not mirror those of the workforce system, data from this study was used only as a point of comparison.

Labor Market Intelligence from System Stakeholders: As described in the introduction to this Plan, discussions with business, economic development, education and other system stakeholders have been essential to formulating opinions about and strategies for the Workforce Development Plan in the Central Valley. Stakeholder experiences have provided a powerful lens through which to view and analyze opportunities to support the objectives of industry and workers alike.

I. The Regional Economy: In its 2012 analysis, ADE indicates that the region has had a relatively slow recovery from the Great Recession. Before the recession, total jobs in the region peaked at 1,361,550 in 2007 and did not reach that level again until 2014. The annual average number of jobs for 2015 was estimated at 1,405,122. Through 2008, total jobs in the region were growing at a 1.4 annual percentage rate, while, since 2008, the number of jobs has grown at a much lower 0.5 percent per year. The analysists conclude that, at 1.4 percent a year, jobs in the SJVAC RPU are expected to grow modestly through 2025, although they project a number of sectors (construction, health, logistics, professional, scientific and technical services, administrative support, education, healthcare and food service) to exceed this overall annual growth rate. However, qualified workers are in short supply for certain key job categories and skill areas. ADE's summary of overall job growth in the region indicates:

- The regional unemployment rate declined to 9.9 percent in 2015, down from the peak of 16.5 percent in 2010, but still well above the low point of 7.9 percent in 2006.
- Before the recession, total jobs in the region peaked at 1,361,550 in 2007 and did not reach that level again until late 2014. Jobs have grown to 1,405,122 (annual average) in 2015.
- Healthcare is projected to see the highest growth in jobs between 2015 and 2025 (51,000 new jobs), followed by Retail (27,400 new jobs) and Food Service (18,000 new jobs).
- The SJVAC region is also expected to see relatively strong growth in Education (16,400 new jobs), and Professional, Scientific and Technical services (8,700 new jobs).
- The Logistics sector, including Wholesale, Warehousing and Transportation, is projected to grow by a combined 22,700 new jobs.
- Manufacturing is projected to increase by 7,000 jobs, but this trend masks considerable turbulence within the sector, with some industries growing while others decline. Wineries (NAICS 312230) are projected to grow by 1,400 new jobs and a number of other food processing industries are projected to grow by at least 500 new jobs each, such as roasted nuts and peanut butter (NAICS 311911), poultry processing (NAICS 311615), animal slaughtering (NAICS 311611), and cheese manufacturing (NAICS 311513). At the same time, dried and dehydrated food manufacturing (NAICS 311423) and fruit and vegetable canning (NAICS 311423) are expected to each decline by more than 600 jobs. Breakfast cereal manufacturing (NAICS 311230) and commercial bakeries (NAICS 311812) are expected to decline by approximately 300 jobs each.
- Construction has recovered more than 12,800 jobs over the past five years, but is projected to continue at less than half that rate of job growth, with 11,200 new jobs created between 2015 and 2025.
- Consistent with the above trends, the Health and Wellness industry cluster is projected to have the highest job growth over the next ten years. The Health and Wellness cluster is projected to add 51,000 jobs by 2025. About 26,700 (52 percent) of the new jobs will occur in the Health Care Delivery sub-cluster. Within this sub-cluster, the number of jobs in hospitals and HMO Centers is projected to increase by 8,500 new jobs. In contrast, services to elderly and disabled persons are projected to increase by 20,800 new jobs.
- The projections of job openings show a concentration in transportation and materials handling (4,900 annual openings), food services and retail (12,600 combined annual openings), office and admin support (5,900 annual openings) and farm occupations (6,300 annual openings).

ADE's analysis corresponds to input from key stakeholders throughout the planning process. A question that workforce, economic development, education and other stakeholders have grappled with during the planning process is how to formulate a systemic response to substantial growth in the retail and food service sectors. The Community College's Deputy Sector Navigator responsible for these industries expressed opinions that many across the system echoed. Both food service and retail, while not directly within the career paths for middle skill jobs in targeted industries, do provide on-ramps for new workers, including youth, immigrants and those returning to work after overcoming employment-related barriers. The system's approach to using employment in these lower wage sectors must include plans for leveraging work readiness and maturity gained through the jobs to transition workers to fields offering greater opportunities to earn family sustaining wages. Approaches will likely require training, both at education/training institutions and on-the-job.

Based on ADE's analysis and discussions with key employers, workforce organizations and training providers, the regional planning process identified specific occupations as potential priorities for additional training efforts, including Medical Technicians, Electricians and Maintenance Mechanics. The planning process also identified specific skills needed by business, such as the ability to use computer-operated processing controls and instruments, supervisory and management skills, business skills, and related English competency.

Major Industry Sectors within the Region: EDD LMID's recent data summary highlights regional economic growth by reporting on the industries with the most employment.

Major Industry Sector	May 2016 (preliminary)	May 2012	Change	Percent	LQ[2]
Total All Industries	1,514,200	1,368,720	145,480	10.6%	-
Total Farm	240,000	220,001	19,999	9.1%	5.6
Total Nonfarm	1,274,200	1,148,720	125,480	10.9%	0.9
Mining and Logging	9,930	13,451	-3,521	-26.2%	4.4
Construction	43,130	36,530	6,600	18.1%	0.6
Manufacturing	111,240	102,701	8,539	8.3%	1.0
Trade, Transportation and Utilities	268,450	235,200	33,250	14.1%	1.0
Information	11,840	11,660	180	1.5%	0.3
Financial Activities	42,940	42,540	400	0.9%	0.6
Professional and Business Services	110,120	101,620	8,500	8.4%	0.5
Educational and Health Services	205,460	181,400	24,060	13.3%	0.9
Leisure and Hospitality	126,430	106,960	19,470	18.2%	0.7
Other Services	38,790	35,700	3,090	8.7%	0.8
Government	287,380	266,760	20,620	7.7%	1.3

Notably, agriculture, construction, manufacturing, trade-transportation-utilities and educational and health services (sectors being targeted, as described below) all experienced growth over the 4-year period from May 2012 through May 2016.

Target Sectors for Workforce Development: The RPU partners have selected the following sectors as priorities under the 2017 – 2020 Regional Workforce Development Plan: advanced manufacturing; construction (including public infrastructure); energy (including green energy); healthcare; transportation and logistics; and value-added agriculture. The decision to target these sectors, is based principally on the following factors:

- Each is showing substantial growth and/or post-recession resurgence in the Valley;
- To varying extents, the industries are being transformed by technology, requiring innovative strategies and approaches for training new workers and the current workforce;
- Engagement with businesses, business supporting agencies and economic development organizations all suggest that these sectors will benefit as the result of interventions by the workforce and education system.
- They were selected as targets through the extensive research and planning that culminated in the 2012 San Joaquin Valley Regional Industry Cluster Analysis and Action Plan. According to the Cluster Action Plan, emerging opportunities for these "comparative advantage" industry clusters are the foundation for innovation, competitiveness, and future well-being in the region. They support improved health, sustainability, energy self-sufficiency, and shared prosperity.

EDD LMID's Regional Economic Analysis Profile, provides clear and concise industry cluster descriptions[3] for four of the RPU target sectors. These are summarized below:

Agriculture (particularly, Value-Added Agriculture): The Agriculture, Food, and Beverage Processing industry cluster includes establishments primarily engaged in growing crops, raising animals, and manufacturing food and beverages, as well as support activities for crop and animal production. This cluster employed almost 269,000 people in 2014, almost 21.7 percent of the economic market's workforce. Top industries in this cluster include: Support Activities for Crop Production; Fruit and Tree Nut Farming; Cattle Ranching and Farming; Other Food Manufacturing; and Beverage Manufacturing. Examples of in demand entry-level and middle skills jobs include agriculture and food

[2] Location Quotient

[3] Distinctions between EDD's industry cluster titles and the sector titles used by the RPU are considered immaterial.

processing technicians, maintenance mechanics, quality control inspectors, farm machinery mechanics and bi-lingual supervisors. There is a very high degree of cross-over between value-added agriculture and advanced manufacturing.

The RPU is focusing on the economic benefits of "value-added" agriculture. Defined as the transformation of agricultural products to a higher value for the end consumer, examples can be seen when carrots are processed into smaller, "baby" carrots, or used in the production of vegetable juice and when grapes are turned into wine.

Construction (including Public Infrastructure): The Construction Materials and Services industry cluster is comprised of builders of mechanical systems such as electrical, heating, and water; specialty trades outfits such as drywall, flooring, and painting contractors; residential and commercial builders; and contractors who complete foundation and framing work. In 2014, this cluster was comprised of more than 55,000 workers, or 4.5 percent of the economic market's employment. Expenditures on road, bridge, tunnel, pipeline and other public infrastructure construction in the Central Valley is expected to top $36 billion in the coming several years. Industries showing the highest projected job openings include: Building Equipment Contractors; Building Finishing Contractors; Foundation, Structure, and Building Exterior Contractors; Residential Building Construction; and Other Specialty Trade Contractors.

Healthcare: The Health Care Services industry cluster includes acute care and outpatient hospitals, nursing homes and rehabilitation centers, adult day care centers, and community service agencies for the elderly. It employed nearly 134,000 people in the economic market 2014, accounting for 10.8 percent of the workforce. Industries in this cluster may include both public and private employment. Top industries within this cluster include: General Medical and Surgical Hospitals; Offices of Physicians; Nursing Care Facilities (Skilled Nursing Facilities); Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly; and Outpatient Care Centers. In demand entry-level and middle skills jobs include: medical assistants, certified nursing assistants, licensed practical and vocational nurses, registered nurses, triage nurses, nurse practitioners, emergency medical technicians and paramedics, medical lab technicians, respiratory therapists, clinical technicians, health diagnosticians, a variety of medical support personnel and dental assistants,

Transportation and Logistics: The Transportation and Logistics cluster is made up of interrelated industries such as refrigerated warehousing, self-storage facilities, freight transporting companies, and overnight delivery businesses. In 2013-2014,* over 50,000 workers were employed in this cluster, making up 4 percent of the economic market's workforce population. Industries showing the highest projected job openings include: Warehousing and Storage; General Freight Trucking; Specialized Freight Trucking; Couriers and Express Delivery Services; Commercial and Industrial Machinery and Equipment (except Automotive and Electronic); and Repair and Maintenance. In demand entry-level and middle skills jobs include truck drivers, mechanics, supply chain workers for "fulfillment" or on-line ordering businesses, fork lift operators, warehouse workers, bi-lingual supervisors and order takers/route planners.

The following industry descriptions for the advanced manufacturing and energy sectors are based on information provided in the 2012 San Joaquin Valley Regional Industry Cluster Analysis and Action Plan.

Advanced Manufacturing: Manufacturing is a lynchpin cluster in that it is a component of virtually all of the other regional clusters in addition to other "diversified" manufacturing companies. More than 70 percent of manufacturing jobs are associated with one of the five other target sectors. Most of this employment is in food processing and is part of the agriculture value chain. Manufacturing has generally lost employment during the past decade, although this loss occurred more slowly in the Central Valley than it did statewide. It is worth noting, though, that nearly 60 percent of the losses were in non-cluster related diversified manufacturing industries. In demand entry-level and middle skills jobs include entry level and skilled technicians, engineering and drafting specialists, maintenance mechanics, welders, supply chain managers, quality control specialists and bilingual frontline supervisors.

Energy (including Green Energy): The San Joaquin Valley's growing population and expanding economy will require increased supplies of reliable, diverse, clean energy, which is defined as "increasing the energy use efficiency of our

homes and businesses and other resources; and producing more electricity and fuel in the Valley from renewable energy resources such as solar, wind and biomass."

It is challenging to find both a consistent definition of the Energy Cluster "value chain" in terms of component groups of industries, and to identify the NAICS codes that comprise the cluster. This is in part because Energy is a rapidly evolving cluster and there are not yet specific NAICS codes for some of the industries, especially in the production of renewable energies. In some cases, such as the solar industry, activities cover many NAICS codes and are difficult to classify. In other cases, activities fall under categories that can involve non-energy-related functions. For example, installation of solar panels on roofs of buildings is classified under a NAICS code for roofing contractors, which is a more encompassing area than solar panel installation. The development of biofuels is sometimes categorized within the agriculture value chain. As a goal of this Regional Plan, the RPU partners will work with EDD LMID to develop a definition for the industry cluster and the jobs it encompasses. In demand entry-level and middle skills jobs include HVAC specialists and insulators, wind and solar farm technicians, energy conservation advisors, natural gas conversion specialists and mechanics specializing in converting and repairing vehicles and devices using alternative fuels.

II. Skill Requirements for a Diverse Region: The in-depth stakeholder engagement process, which included both business representatives and individuals from organizations that serve businesses, pinpointed several key skill areas that companies require of their employees and job candidates. These include:

Foundational skills: Basic literacy and numeracy skills are required in virtually every type of work. Education partners equate the typical minimum requirements of businesses for language and math skills to 8th grade proficiency.

Core competency skills: Over and over again, businesses and those who provide training for their workers expressed that digital literacy is now a core competency. While the ways that technology manifests within a company and in relation to specific jobs are countless, a baseline understanding of computer/microprocessor operations is now essential for virtually all work. Many stakeholders, including businesses themselves, expressed similar thoughts about "customer service" skills, recognizing that strong customer relations, be they external or internal, affect productivity and profitability.

Essential Skills: Punctuality, team work, customer responsiveness, critical thinking, and accepting supervision are among a long list of workplace behaviors, attitudes and knowledge that businesses require. Many businesses, for which specific licensure/certification is not a prerequisite, indicate that these "essential skills" alone can advance a job applicant to the hiring phase and suggest that no candidate be referred without workforce system representatives first verifying that he or she demonstrates competency in these areas.

Job Specific Skills: As indicated various time throughout this Plan, each target industry has described skills needed for workers in a wide range of occupations. Industry engagement will continue to focus on translating skill requirements into training for each target sector. In most cases, this will involve updates to the technical content of curricula, especially as workplace skills are altered by technology and automation. In other cases, as technology and market place conditions create new job classifications or completely new skills requirements for existing classifications, new curricula will need to be developed.

Regional Plan goals and action steps concerning the foregoing demand-driven skill areas are further described in section L.

In its recent analysis of labor market data for the region, ADE reports that more than 51,200 average annual openings are projected between 2015 and 2025 (512,600 total openings), of which approximately 21,000 annual openings would be due to new job growth.

- The minimum educational requirements listed by the Department of Labor for more than three-quarters of the openings do not exceed a high school diploma. However, nearly 4,000 openings per year require more than a high school diploma, though less than a four year BA degree. This includes about 700 openings that require specialized training beyond high school, though not necessarily a certificate or AA degree. Of these jobs, 572 are teaching assistants and 105 are computer support specialists.
- Nearly 1,400 annual openings are for jobs that do require a certificate in a specialized area of training. The largest occupational groups in this category include medical assistants (348 annual openings) and licensed practical and vocational nurses (308 openings per year). Other occupations requiring a certificate with 90-100 annual projected openings include dental assistants, emergency medical technician and paramedics, firefighters, supervisors of production and operating line workers, and heating, air conditioning and refrigeration mechanics.
- About 2,000 projected openings per year would require an AA degree. The largest occupational group in this category is nurse practitioners (560 annual openings), followed by registered nurses (430 annual openings) and preschool teachers (203 annual openings). Another 331 projected annual openings are in other medical occupations, such as clinical technicians, health diagnosing support personnel, and respiratory therapists. The remaining openings in this category include a wide range of technical specialties including engineering and drafting technicians, agriculture and food science technicians and radio and telecommunications equipment installers.

While some of what ADE highlights is outside the focus of the region's target sectors, it provides important insight with regard to skills for middle skill job and other occupations requiring less than a four year degree.

III. The Regional Workforce: The workforce in the greater San Joaquin Valley region is, consistent with the demographics of the vast majority of California, ethnically and culturally diverse. The region's vast agricultural footprint has, for more than 150 years, drawn immigrants from around the world to the Central Valley, where they have been quickly able to use their knowledge of farming and ranching, along with the hard labor that they know is required of the industry. Over the past several decades, as the industrial base of the region has expanded beyond agriculture and related sub-sectors, all of those with a stake in economic growth have worked to build a workforce that is as diverse in skills as it is in heritage.

Labor Force Data: The following labor market profile information, providing employment and unemployment data, is excerpted from EDD LMID's September 2016 LMID Summary[4] for the ten county area comprising the SJVAC RPU[5]:

	May 2016	May 2015	Change	Percent
Labor Market	1,871,810	1,873,910	-2,100	-0.1%
Employed	1,710,720	1,689,870	20,850	1.2%
Unemployed	160,910	184,240	-23,330	-12.7%
Unemployment Rate	8.6%	9.8%	-1.2%	-

The Summary expresses labor force participation in the following terms:

Labor Force Participation	Population	Percentage
Employed or in Armed Forces	1,562,189	51.7%
Unemployed	261,676	8.6%
Not in labor force	1,196,002	39.6%
Total	3,019,867	100.0%

[4] For all tables under the "Labor Force Data" sub-heading, the source is U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

[5] Note: LMID advises that numbers may vary from table to table due to rounding and other factors.

Other key labor force and overall regional population characteristics in the summary include: native and foreign born; English learners; veteran status; disability status; and barriers to employment. The tables that follow present this data:

Native and Foreign Born	Population	Percentage
Native	3,192,815	78.3%
Foreign Born	886,794	21.7%
Total	4,079,609	100.0%

English Learners	Population	Percentage
Speaks English Less Than "Very Well"	711,447	19.0%
Speaks English "Very Well"	916,870	24.5%
Speaks Only English	2,117,332	56.5%
Total	3,745,649	100.0%

Veteran Status	Population	Percentage
Male Veterans	179,774	93.2%
Female Veterans	13,092	6.8%
Total	192,866	100.0%

Disability Status	Population	Percentage
With Any Disability	482,044	12.1%
No Disability	3,507,996	87.9%
Total	3,990,040	100.0%

Individuals with Barriers to Employment	Total
Ethnic Minorities	2,627,380
Households with Cash Public Assistance or Food Stamps	227,663
Population 18 and Over with Less Than a 9th Grade Level Education	383,224
Single Parent Households	299,397
Speak English Less Than "Very Well"	711,447
Youth Ages 10 to 24	977,226

While EDD LMID's Summary stops short of analysis concerning labor force characteristics, it does make clear that there are a significant number of RPU residents with barriers to employment. These statistics suggest that the region's workforce system must be responsive to challenges faced by workers and those seekingers to enter the workforce. Growth of key sectors of the Central Valley's economy will require that large percentages of these individuals become skilled members of workforce. Strategies must include training and other workforce services specially designed to remediate barriers and enable entry to critical, in-demand career paths.

In contrast to the LMID Summary, the October 2016 report by ADE analyzed the labor force, focusing on characteristics including race and ethnicity, gender, veteran status, disability status, citizenship, age, educational attainment and employment status. The report makes note of a number of significant factors and draws some conclusions, about labor force characteristics, the economy and employment. The following information is in largely excepted from ADE's Report.

Unemployment: Within the RPU, about 48 percent of the labor force is Latino, at 870,562 persons out of a labor force of 1,814,685. Thirty-eight percent is White. Unemployment for Latino workers 25 and older is 12.4 percent compared to 8.6 percent for Whites. Unemployment is 14.2 percent for workers in other racial and ethnic groups. Unemployment affects workers 25 and older with no college degree much more, at 13.2 percent, than those with a

college degree (6.1 percent). Veterans' unemployment level is at 8.8 percent. Disabled workers have relatively high unemployment, at slightly over 22.0 percent.

Age Demographics: The labor force in the RPU is fairly evenly concentrated among the age groups. Workers in the 16-24 age group are about 16.6 percent of the total, while nearly 25 percent are in the 25-34 age group. The prime working age group of 35-54 has 42 percent of the workforce. Workers over 55 constitute about 16.9 percent of the workforce and a number of employers report that impending retirements are a significant issue for them in terms of anticipated openings in the future.

Underutilized Workforce: ADE examined the part-time and unemployed labor force in terms of how its educational attainment and prior occupational background matches projected annual job openings. The largest numbers of openings identified were in lower skilled occupations such as farming, food service, sales and administrative office occupations. However, significant numbers of openings were also projected in education, production, healthcare practitioners and personal care services, which are followed closely by management and healthcare positions. Comparing these categories to the availability of currently unemployed and part-time workers, there are substantial numbers of workers who would seemingly be available to fill these positions. This may suggest that these unemployed individuals and those working only part-time need training to help upgrade their skills. It might also be the case that they need other services to help them be available for full-time employment.

Labor Market Trends: ADE's 2016 analysis sheds light on labor market trends in the RPU. The authors report that, as expressed in the following table[6], the San Joaquin Valley has defined a number of regional industry clusters that are significant components of the regional economic base.

NAICS	2015 JOBS	2025 PROJECTED	2015-25 CHANGE	2015-25 ANNUAL GROWTH RATE
Total	**1,031,426**	**1,203,14475**	**171,718**	**1.6%**
Energy	47,762	53,517	5,755	1.1%
Diversified Manufacturing	30,277	30,777	500	0.2%
Health and Wellness	203,489	254,499	51,010	2.3%
Agriculture	418,394	469,406	51,012	1.2%
Water Flow Technology	9,934	11,480	1,546	1.5%
Logistics	51,436	63,324	11,888	2.1%
Retail	151,397	178,823	27,426	1.7%
Accommodations and Food Services	106,314	125,619	19,305	1.7%
Heavy Construction	12,423	15,699	3,276	2.4%

Industry clusters represent traded sectors in the regional economy, which are typically the source of most of the income and wealth for the region, as well as the areas where innovation occurs most frequently. Agriculture and Healthcare are the two largest industry clusters.

The Agriculture cluster includes not only farm production, but also food processing, related distribution and logistics, and a variety of agricultural services that include fertilizers, irrigation, soil testing, veterinary services, and marketing, among others. Within the broader Agricultural cluster, there continues to be a shift away from jobs employed directly at farms and increased reliance on farm labor contractors. In addition, a number of food processing industries are projected to increase employment, including poultry processing (NAICS 311615), animal slaughtering (NAICS 311611), meat processed from carcasses (NAICS 311612), wineries (NAICS 312130), corrugated and solid fiber box (NAICS 322211), perishable prepared foods (NAICS 311991), and wood containers and pallets (NAICS 321920). In

[6] ADE Inc., *San Joaquin Valley Regional Industry Cluster Analysis and Action Plan*, prepared for the Office of Community and Economic Development, CSU Fresno, on behalf of the California Partnership for the San Joaquin Valley. September 2012

addition, the agriculture-related distribution (logistics) sector is projected to add about 3,900 jobs over the next ten years.

The Health and Wellness cluster is projected to add 51,000 jobs by 2025. Of the 51,000 new jobs, almost 26,700 (52 percent) will occur in the Healthcare - Delivery sub-cluster. Within this sub-cluster, the number of jobs in hospitals is projected to increase by 5,400 new jobs, with another 4,200 new jobs projected for services to elderly and disabled persons. In addition to the 4,200 new service-related jobs in the Health Care - Delivery sub-cluster, there is another 20,800 new jobs in the Health Care – Other Services sub-cluster pertaining to services for the elderly and disabled (NAICS 624120). Some of the new jobs will occur in hospital settings but many will be in outpatient facilities and various types of nursing and residential care facilities.

ADE's analysis also identifies industries that are expected to decline. While food processing generally exhibits strong growth over the next ten years, there are several food processing industries within the Agriculture Cluster that are expected to decline, such as breakfast cereal manufacturing (NAICS 311230), fruit and vegetable canning (NAICS 311421), and dried and dehydrated food manufacturing (NAICS 311423).

Labor force demand is not only affected by new jobs growth, but also by changes in the labor force. As the Baby Boomer generation ages out of the labor force, there will be an increased need for replacement workers. In addition, job turnover occurs for a number of other reasons. More than 51,200 average annual openings are projected between 2015 and 2025 (512,600 total openings), of which approximately 21,000 annual openings would be due to new job growth.

Educational and Skill Levels: The LMID Summary provides the following data on the educational attainment levels of Central Valley residents:

Educational Attainment	Male	Percentage	Female	Percentage
Less than 9th grade	198,654	13.8%	184,570	12.8%
9th to 12th grade, no diploma	196,833	13.6%	153,414	10.6%
High school graduate (includes equivalency)	394,997	27.4%	366,649	25.4%
Some college, no degree	363,871	25.2%	397,218	27.6%
Associate's degree	92,503	6.4%	118,626	8.2%
Bachelor's degree	131,471	9.1%	154,746	10.7%
Graduate or professional degree	65,809	4.6%	65,914	4.6%
Total	1,444,138	100.0%	1,441,137	100.0%

The fact that nearly one quarter of the region's "job age" residents have not earned a high school diploma or its equivalent is troubling. Even opportunities for which a high school diploma is not required are more readily attainable when the candidate has this credential. As discussed in section D of this Plan, representatives of business, education and virtually every workforce stakeholder group agreed that a high school diploma is the "bedrock" credential for the majority of jobs in the Central Valley, particularly those offering upward career path potential.

ADE's October 2016 report provides substantive review of education attainment and its effect on workforce conditions. According to this analysis,[7] Educational attainment in the region is slightly lower than the statewide averages, with 22 percent of workers 25 years and older not holding a high school diploma or equivalent, compared to 18.5 percent for the state as a whole. Statewide, 38.8 percent have a college degree, compared to 28.5 percent for the SJVAC region. However, in the Central Valley there is a stark contrast in the educational attainment levels of the

[7] The following text is largely excerpted from ADE's report; edited only for narrative flow and sequence of information within the context of topics to be addressed by the Regional Plan.

labor force when citizenship status is taken into account. Among US citizens in the workforce, only 12 percent do not have a high school diploma or GED and 33.7 percent have a college degree. However, it is important to recognize that many non-citizens have not had the same educational opportunities in their home countries and many have not achieved the equivalent of a high school diploma. 63 percent of the non-citizens 25 and over in the labor force have not obtained a high school diploma or a GED. Twenty percent of non-citizens in the labor force have earned a high school diploma or equivalent, which is five percentage points lower than the rate for citizens (i.e. 25.9 percent). This accounts, in part, for the differences in educational attainment between Latino workers and other workers in the labor force, as the non-citizen group is 87.1 percent Latino; slightly over 39 percent of all Latinos in the workforce have no high school diploma or GED. It is also important to note that Latinos have earned high school diplomas and GEDs at rates slightly surpassing Whites and Others, at 25.9 percent versus 24.5 percent (Whites) and 21.7 percent (Others). However, Whites and Others are over two times more likely than Latinos to have earned a college degree: 14.9 percent of the Latinos in the labor force have earned a college degree versus 40 percent for Whites and 41 percent for Others.

Educational attainment also affects employment status. Persons with no high school diploma exhibit rates of unemployment that more than double unemployment levels for persons with a college degree, or 15.8 percent versus 6.1 percent. Of the persons with a college degree, almost 68 percent work full-time, resulting in a full-time employment rate that is 18 percentage points greater than the rate for persons without a high school diploma (i.e. 68.3 percent versus 50.0 percent).

Veterans in the region tend to have high levels of overall educational attainment, with only 3.5 percent not achieving a high school diploma. For the workforce as a whole, 22.0 percent do not have a high school diploma or equivalent degree. Among workers with disabilities, however, nearly 26.5 percent do not have a high school diploma.

IV. Workforce Development Activities within the Region: From the on-set of recent planning activities that have taken place to support the development of the Regional Workforce Plan, the partners have agreed that there are substantial resources within the RPU to provide workforce development and training. The challenge in moving the needle forward on the development of a more demand-focused system is marshaling these resources so that they become more nimble and able to quickly respond to labor market needs.

Overall, the training assets of the region are abundant and, in the aggregate, are effective at meeting the demands of industry for a variety of skill sets. However, ample room for improvement exists in the following areas:

- Capacity to receive on-going input from industry on its changing needs and support from business in translating workplace skill needs into training content.
- Shortening the turn-around time from when business “sounds the alarm” to the start date of training in new and updated courses.
- Consistency of content from institution to institution and from area to area so that regional businesses can gain confidence that credentials resulting from training reflect agreed upon content.
- Greater collaboration with system stakeholders, particularly economic and workforce development, in the process of engaging industry in regional discussions of current and emerging skill requirements.
- Development of more on-ramps for individuals with barriers to employment to enter training that enables subsequent transition to career pathway programs eventually leading to middle-skill and other self-sustaining employment.

Strategies to address these challenges are described throughout this Regional Plan and are summarized within section L, Regional Collaboration: Goals and Associated Action Steps.

Scope and Capacity of Regional Workforce Development and Training Activities: The eight local WDB’s within the region all operate high-functioning workforce development systems that comply with and fulfill the objectives of WIOA. These systems include a regional network of American Job Centers of California (AJCCs) and youth/young

adult programs, some of which are linked directly to AJCCs, while others are stationed in other locations throughout the community. For many job seekers, these centers provide access to occupational, foundational, employment readiness and remedial skills training offered by a wide variety of providers, including the following.

Community Colleges: There are 14 community colleges in and around the SJVAC RPU, which, to varying degrees, are key contributors to training Central Valley residents in skills for in-demand jobs in target sectors. Coordination between the local WDBs and the community colleges is facilitated and made more effective by the Central Valley/Mother Lode Regional Consortium (CRC), which represents community college's career and technical education faculty, staff and programs in the region. The CRC supports regional economic growth by facilitating development and expansion of college training and educational programs to meet the needs of regional businesses and industries. Working with the CRC are the region's Deputy Sector Navigators (DSNs), which serve as liaisons between local colleges and business. Within the region, DSNs represent the following sectors/areas of focus: Advanced Manufacturing; Health Workforce Initiative; Agriculture, Water and Environmental Technologies; Global Trade & Logistics; ICT/Digital Media; Retail, Hospitality, Tourism; and Small Business. The efforts of the DSNs, combined with those of deans and faculty, have resulted in the updating of courses reflecting the major demand industries in the Central Valley. Community colleges also provide foundational skills training in language and mathematics.

Adult Education: Adult education programs tied to local school systems provide training in a number of areas, both academic and vocational. For students with barriers to employment, learning deficits and lack of a high school diploma, adult schools throughout the region are a critical resource. Adult Basic Education (ABE), which promotes development of literacy and numeracy skills required in the workplace, English-as-a-second language (ESL) and high school completion and equivalency programs are offered by the system. In addition, various adult schools offer career training, much of which is closely aligned to target industries and demand jobs, including welding, construction skills, entry-level healthcare occupations, warehousing, food service and culinary occupations.

Private Vocational Training: According to the State Bureau for Private Postsecondary Education, there are more than 150 approved private training institutions in the San Joaquin Valley. While some institutions in this category have come under scrutiny within the last several years around fee structures and student outcomes, several private postsecondary schools in the Central Valley have proven track records in training job seekers for in-demand entry-level jobs, such as truck driver, medical assistance and technicians for various industries. These schools continue to occupy an important niche within the training community, as, based on their small size and flexible structures, they are often able to train students quickly and place completers into jobs with local businesses.

Others: Other providers also comprise an important, albeit smaller, portion of the training community. These include

- *4-Year Institutions*: The Central Valley is home to the University of California, Merced, along with three campuses of the California State University system: Bakersfield, Fresno and Stanislaus. In addition, several notable private universities, such as University of the Pacific, are located in the RPU. While these institutions are well known for awarding baccalaureate and advanced degrees, many of which are required for employment in the region's key sectors, increasingly their "extended education" divisions are providing training and producing certificates that respond to industry demands for particular skills.
- *Organized Labor*: Unions representing the skilled trades offer a number of pre-apprenticeship and apprenticeship programs that can lead to employment with good wages and benefits.
- *Constituent-Focused Training*: Programs offered by organizations serving specialized target groups (including WIOA Section 167 and 168 programs serving farmworkers and Native Americans) offer a wide range of vocational programs for jobs ranging from solar panel installation to truck driving, welding and more.
- *Community-Based Organizations*: An extensive number of community-based agencies provide training and services to support employment. Many such organizations provide "essential skills" training, which emphasize work readiness, along with information on the behaviors, attitudes and work maturity expected by business.

- *Private Industry*: Business itself is a major trainer of workers, mostly using its own resources. Increasingly, workforce development, education and economic development are developing new partnerships with private businesses to make training more responsive to the specialized skill needs of industries and companies. Initiatives include providing financial support for work-based learning and designing customized training programs on behalf of specific businesses.

Addressing the Needs of Limited English Proficient Individuals: With the eight largest counties in the RPU all reporting a workforce that is at least 15 percent limited English proficient and 19% of workers throughout the region self-identifying as speaking English less than "very well," there is a clear need to provide services to assist these individuals in increasing their prospects for success in the labor market. Stakeholders representing all workforce-related disciplines and every sub-region of the RPU shared insights on the need for services, where they are available and how service delivery can be improved to increase the work readiness of English language learners. With regard to need, while everyone agreed that it exists, the level of need for English language skills was a subject of some debate. After decades of immigration from Mexico and other parts of Latin America, Spanish has become the unofficial second language of the Central Valley. As such, workers can live their daily lives communicating in Spanish and are able to secure jobs where only the most minimal English skills are required. Although jobs requiring little or no English are generally low-paying, some stakeholders indicate that it is often difficult to persuade adult workers of the benefits of studying English to improve career opportunities and increase their earning potential.

ESL training is available through a range of providers and programs. In rural communities, WIOA Section 167 grantees and their partners play a significant role in delivering English skills training though the National Farmworker Jobs Program. Providers for the region include Proteus, Central Valley Opportunity Center and Employers' Training Resource, which offer some vocational services in tandem with ESL. By far, the region's largest provider of ESL training is public education, with the Adult Education system at the forefront. Under the leadership of the AEBG consortia throughout the Central Valley and up and down the state, a number of unique practices have been developed by adult schools and community colleges that hold promise for increasing the English language fluency of workers in the region. Among these are: strategies that bring ESL into rural communities, sometimes on a non-credit basis, to make training more accessible; offering training during school hours and in the evening to parents of English language learners and immigrant students; and contextualizing ESL through a co-instruction process, where language teachers and vocational instructors split teaching time and provide English language training in a work-related context.

Improving the capacity and results of the workforce system to build English skills for those with limited fluency is a priority of the regional partners. To this end, workforce and education leadership will convene a workgroup to develop strategies around the following challenges and issues:

- Communicating the value of English language skills acquisition in terms of employment opportunities
- Making services accessible in terms of location, schedule and instructional methods
- Broadcasting the availability of programs and services
- Linking language skills to work requirements
- Offering various on-ramps to beginning, intermediate and advanced English skills training

Associated goals and action steps are summarized within section L of the Plan.

C. Regional Sector Pathways

The SJVAC RPU partners understand and believe in the value of regional sector pathway programs to transform the workforce system into one that is uniquely focused on meeting the skills needs of business, while at the same time preparing new and incumbent workers to gain the skills for in-demand jobs. Over the last several years, at the local level, the WDBs have indeed been focused on target sectors in their areas and a number of sector strategies and

initiatives have taken shape. Some of these involve support for hiring, some for training and some for both. A number of projects have included economic development and/or the community colleges in the process of designing and delivering services. Some have not. Simply put, within any local area, strategies do not necessarily adhere to a particular protocol with regard to identifying need or developing new training responses to that need. Neither is there a standardized process for the partners to come together with industry to assess the need for adjustments to existing programs. From area to local area, processes used for translating the workforce skills needs of industry into career pathways vary. Despite the lack of standard processes within and across local workforce areas, many very promising practices are emerging and industry-responsive services have been and continue to be developed. Some of this work is even being done on a regional level, signaling that the Central Valley is well positioned to develop and implement regional sector pathway programs as envisioned by the State Plan.

In short, what remains to be done is transforming local and less uniform processes into more easily replicated ones based on best practices for the development of regional sector pathways. The partners will develop protocols for working with business to assess regional industry workforce needs and translate these needs into content for training and services to prepare candidates for jobs. The protocol will include strategies to effectively engage with business, economic development, and education in a regional sector pathway planning and development process. As stated above, the good news is that there are indeed sector-focused career pathway programs in the Central Valley, many of which were driven by specific requests from and input by industry. Some of these have the potential to be scaled up to other areas of the RPU. Again, the only things lacking are standard structures, processes and protocols, so that partners throughout the region can develop sector pathway programs that will be replicable in other locations.

The partners' description of regional sector pathways strategies in response to the planning guidance is largely forward thinking and aspirational, indicating where the system currently is in the process of planning and what plans have been devised thus far. In addition, the following responses highlight a number of local career pathway programs that are well positioned for further development and regional replication.

I. **Need for Regional Sector Pathway Programs**

For several years the local boards within the region have been intensively involved in the development of programs and strategies to respond to the growing demand from key sectors. In addition, significant regional planning began to coalesce in 2011, when the Office of Community and Economic Development (OCED) at CSU Fresno received an Economic Adjustment grant from the U.S. Department of Commerce's Economic Development Administration to prepare a Central Valley-wide industry cluster analysis and a regional strategy: a Cluster Action Plan to catalyze the growth of priority clusters. The resulting San Joaquin Regional Industry Cluster Analysis and Action (described in Section B) set in motion numerous actions that would give shape to sector strategies throughout the Central Valley.

One important outgrowth of the Action Plan was the establishment of the Regional Industry Clusters Initiative (RICI). The goal of the project is to support improved regional economic performance, sustainability, and shared opportunity for Central Valley residents, businesses and communities. RICI got its official start in February 2013, with team members engaging champions for five identified clusters: agriculture, clean energy, health, manufacturing, and water technology. For each of these clusters, industry partners have been identified and advisory committees have been organized. While RICI has not yet focused on two of the region's priority sectors (construction and transportation/logistics), it has the potential to function as a resource for reaching out to and even convening industry on behalf of the workforce system.

Initiating the Regional Sector Pathway Discussion Industry and Stakeholders: During the planning process that preceded the development of this Regional Plan, industry was engaged in discussions (principally through the regional forums) of its workforce needs. The dates and times of these sessions are included as attachments to the Regional Plan. However, these sessions did not drill down to the content level in such a way as to render feedback usable for development of sector pathway programs. That will require the more in-depth process described below.

More Intensive Industry-Led Planning on Regional Sector Pathways: As described in Section D, which follows, the partners plan to organize a series of meetings with key industry leaders regarding industry-valued credentials. These same convenings can be used to review existing career pathway programs to determine opportunities to upscale them throughout the region. The RICI committees as well as the local and regional Economic Development organizations may serve as resources for organizing these meetings. Intensive engagement sessions with industry leaders in all six sectors will be used to:

- Review credentials in terms of value (described in Section D)
- Discuss industry needs for skills in various classifications, including middle skills jobs and entry-level employment that provides a path to these jobs
- Identify new classifications or skills sets for which training is needed and provide direction on content requirements
- Review new and existing career pathway programs (including the one's under Item III, below), which have been developed throughout the region, and provide input on the relevance of content and what changes are necessary to reflect current skill needs of business
- Determine the frequency with which regional sector pathway program content should be reviewed to ensure it remains relevant

II. How Existing Programs Work to Meet Industry Needs: The aforementioned process for initiating more intensive and on-going industry engagement reflects processes currently being piloted under a state-funded SlingShot initiative serving the entire region. The project is focused on several of the SJVAC priority sectors, including: advanced manufacturing, construction, water technology, industrial agriculture, and transportation/logistics. Partners (including community colleges, campuses of the California State University system, the WDBs, organized labor, and business) are working to streamline training curriculum, while ensuring that it meets the skill requirements of industry. Under the project, SlingShot partners are working on:

- Analyzing existing curriculum through the "eyes of businesses"
- Organizing "stackable" credentials
- Standardizing assessment(s) and training
- Aligning existing training resources to meet industry sector needs.
- Creating new apprenticeships
- Replicating "best practices"

The Community College SlingShot consortium has begun to lay the groundwork to establish policies and practices for Prior Learning Assessments and Competency-Based Education in an effort to expedite the rate at which students complete programs and obtain certificates and/or degrees, and eventually enter into the workforce.

III. Promising Practices within the Region: Demand-driven, career pathway programs have been developed throughout the region. The majority of these operate within one or two workforce areas, with some taking place across large portions of the RPU. While, as indicated, there has been various levels of industry engagement on these programs, all reflect skill needs expressed by business. Under the planned industry engagement protocol, these programs will be presented for further review to determine if they remain up to date and suitable as regional pathway programs.

Advanced Manufacturing: Several Central Valley manufacturers including JBT Food Tech, the Ardagh Group and Constellation Brands requested that an accelerated welding/blue print reading training program be established. The Madera County WDB, in conjunction with the Merced Community College Center, Reedley College and Fresno City College developed an accredited, year-long career pathway program which will complete its first cycle in the summer of 2017. The program includes on site apprenticeships at JBT and Ardagh.

Construction (including Public Infrastructure): In connection with this sector, various career pathway programs have been implemented on a regional basis. These include:

Multicraft Construction Training: Under a grant funded by the California Workforce Investment Board and Central Valley Infrastructure Employment Project (CVIEP), this program was implemented to fill critical workforce skills gaps by creating opportunities for job seekers to earn industry-valued credentials and enter into an apprenticeship or direct employment in the energy efficiency or construction sector. Merced WDB has conducted a total of five multi-craft pre-apprenticeship training modules that have taken place in Modesto: two jointly with the Stanislaus WDB, one in partnership with the San Joaquin Valley WDB and two independently. Trainings have also been carried out in other regions of the Central Valley RPU. As candidates graduate, many have been scouted by several solar field businesses; one of which is preparing to construct the largest such field in the Central Valley.

The Pre-Apprenticeship Training Programs in the Crafts trades is coordinated through the Fresno WDB and extends throughout the Central Valley. The curricula includes a six week program of exposure to the varying Craft Trades, industry-recognized OSHA-10 and First Aid/CPR certification, work maturity skills and physical training. Successful completers are allowed to bypass early screening processes when applying for acceptance into the trade unions.

Building Inspector Technology (BIT): The Deputy County Building Official in the Merced County Public Works Building Division communicated to representatives of the Merced County WDB and Merced College that there is need for more trained building inspectors. The final result of that initial conversation is a new program to prepare candidates for the State of California Residential Building Code Certification Exam, which enables individuals to qualify for entry-level jobs. A Certified Inspector has opportunities with the local and State government, private consulting firms and business, as well as, real estate firms and can also work in inspection testing labs and as an entry-level Permit Counter Technician and Plan Checker. The median annual wage for construction and building inspectors was $57,340 in May 2015 and $27.57 per hour. Employment of construction and building inspectors is projected to grow 8 percent from 2014 to 2024, about as fast as the average for all occupations. (*US Bureau of Labor Statistics)*

Energy/Green Energy: While high speed rail, solar and wind energy are all hot topics related to energy, the majority of jobs available at present exist within the construction arena. More outreach to and engagement with energy sector leaders will precede planning and development of regional sector pathway programs.

Healthcare: Merced County WDB offers the following examples of demand-driven sector pathway programs:

Health Coaches: Under an Accelerator 2.0 Grant received from the State, more than a year was invested in developing this project. The WDB was approached by the Livingston Community Health Services seeking resources to train Medical Assistants (MAs) to become Health Coaches to respond to emerging needs in the growing health sector. A similar project had taken place in Southern California and successful replication seemed achievable. This training is an excellent example of a "stackable credentials," building on workers' knowledge and qualifying them for higher-skilled and higher-paying jobs.

The Merced County Health Coaching and Behavioral Health Career Ladder Project – Medical Assistant to LVN: Under the new Accelerator 4.0 Grant received from the State, this project is a joint effort among the WDB, the Livingston Community Health Services, Merced County Department of Mental Health, and UC-Davis Betty Moore School of Nursing Training. This project aims to create an upward career path for Medical Assistants and also to train LVNs on how to supervise and better incorporate Health Coaches into their teams.

Transportation and Logistics: The San Joaquin County WDB has been at the forefront of developing career pathway programs in the transportation and logistics sector, working closely with large businesses in the county. Existing programs include:

Caterpillar Maintenance Mechanic Program at San Joaquin Delta College: The Caterpillar Maintenance Mechanic Program at San Joaquin Delta College is a public/private regional collaborative training program. Training is provided at San Joaquin Delta College and students are referred by employers throughout the Central Valley. These employers provide the operating vehicles to facilitate the training and the hands-on experience. Additionally, students go through an apprenticeship program, spending time both in the field and in the classroom.

Electric Vehicle Repair and Maintenance - Regional Transportation Center: This program has been developed through a partnership among the San Joaquin Regional Transit District, San Joaquin Delta College, the San Joaquin County WDB and the State Department of Industrial Relations. The Regional Transportation Center will soon become an on-site training facility. San Joaquin Delta College will be conducting the training at the Regional Transportation Center using the state-of-the-art equipment, tools and hybrid and electric vehicles (uses). The site will be a centralized training hub for Northern Transportation Districts and organizations that will refer students and participate in an apprenticeship program currently under development by the State Department of Industrial Relations. The Regional Transportation Center will refer its own job candidates and employees for training. San Joaquin Delta College, the WDB, various transit facilities from the Central Valley and the Bay Area will also refer students.

IV. Support for Existing and Planned Sector Pathway Programs: While the structured regional industry engagement process described above is in its early stages, much work is currently being done by local WDBs and sub-regional groups made up of the WDBs, the community colleges, business, economic development and other partners. This includes activity on the regional SlingShot program.

D. Industry-Valued Credentials

The regional planning guidance requests information about the status of industry-valued and recognized credentials, along with a description of the processes that were used by industry to determine their value. This topic is at the forefront of the Central Valley's regional workforce planning discussions. Industry is being engaged by system partners around this issue, business has begun to provide input and, based on what has been expressed to date, content of various programs and courses is being examined. However, as is the case with regional sector pathway program themselves, the process for industry's leading discussions about credentials has not been standardized in terms of protocol, including processes for review, ranking and results. And, like processes for developing pathway programs, current processes for determining credentials' value vary from one place to the next and based on who is convening business and stakeholders around the discussion.

The importance of determining industry-valued and recognized credentials has become understood by many business and industry leaders and system stakeholders. Discussions on this topic have begun and the issue has been a central topic during the process leading to the development of the Regional Plan. Still, much work remains. While credentials are being earned and individuals with these credentials are being hired in the fields for which they trained, the value of credentials in decisions to hire is not abundantly clear. The information that follows describes how the regional partners are coalescing around this topic, what information from industry and stakeholders has been gathered to date, what plans have been developed for moving forward on determining credentials' value and keeping them current and ensuring their attainment for career candidates and incumbent workers. This is, without doubt, the most aspirational component of the Regional Plan, but one to which the stakeholders are deeply committed.

I. Putting Credentials into Context: As the planning process was initiated, the consultants, local boards and partners relied extensively on the State Plan and state-issued planning guidance to shape the information gathering process. Given the importance being place on industry-valued and recognized credentials, it was decided that the issue would be included as a topic for the regional planning forums, as well as one for individual discussion with businesses. The information that follows summarizes initial discussions.

Initiating the Credential Discussion with Industry and Stakeholders: Three forums were held on this topic: in Madera, Modesto and Visalia. The sessions were attended by representatives of business (including those

representing target industries), economic development, chambers of commerce and individuals from system partners (e.g. education, workforce development) that deal directly with business. The purpose of these sessions was to gather information on industry-valued credentials that currently exist, with the goal of using information as a starting point for subsequent industry-led discussions on how to establish credentials where industry insight is "baked" into the process. While the consultants served as facilitators, every attempt was made for business representatives to lead the discussions. The sessions were enlightening and highlighted the substantial work ahead with regard to the need for deep industry engagement on training content and the basis for awarding credentials. Key input included:

- Credentials are essential for some jobs. In some cases, industry not only values and recognizes credentials, it absolutely requires it. Barbers must be licensed. Truck drivers must be licensed. RNs must have an Associate's Degree or higher and pass the state registry exam. In fact, business leaders and others identified many occupations (including many "professional" jobs) that require a specific degree, license or certification.
- Credentials are optional in many cases: For other jobs, many indicated that certificates may be required, but they were not universally valued due to inconsistency in performance among workers who held them. Stakeholders commented that inconsistent course content, instructor knowledge and other factors deflate the value of certificates for some businesses. Many agreed that a certificate does not universally equate to skills and competency and that many skilled and competent workers and job candidates do not have certificates.

More Intensive Industry-Led Planning on Post-Secondary Credentials is Needed: The foregoing observations made clear the need for the regional partners (particularly workforce, education and economic development) to implement a structured process for engagement with business on credentialing, which will also serve as a means to discuss key content issues for regional sector pathway programs. The local WDBs will:

- Convene an industry steering committee for each of the region's six target sectors to discuss work-related credentials. The committees will include a diverse cross section of businesses in terms of company size, location in the region and niches within the industry. Committees may meet on multiple occasions.
- The committees will:
  - ✓ Review and recommend metrics for determining the value of credentials.
  - ✓ Review existing credentials awarded in the region that pertain to their sector and determine their value
  - ✓ Identify credentials that would be desirable for the industry
  - ✓ Develop a process for re-confirming the value of credentials over time
  - ✓ Provide recommendations on course content for regional sector pathway programs and other training that will produce the credentials.

These are enumerated as Regional Plan goals under Section L. Updates to the Regional Plan will include information on industry-valued credentials that result from this engagement process.

II. Existing Industry-Valued and Recognized Postsecondary Credentials and Maintaining their Relevance for Businesses in Key Sectors: As indicated, the partners have not reached a point in the planning process where any specific credential is being officially deemed "industry-valued and recognized." Presumably, required licenses and degrees will make their way onto this list, but the partners will complete the planned industry engagement meetings described above prior to identifying the list of credentials.

III. Determining the Value of Credentials to Industry: The process that will be used to determine the value that industry places on credentials is described, under Item I, above.

IV. Principal Providers of Credentials with the Region: Section B, Item IV of this Regional Plan provides a description of the principal providers of training and education programs throughout the SJVAC RPU. Given the focus of the Regional Plan on middle-skill jobs (and entry-level employment with a path to middle-skill jobs), the community colleges and adult schools will likely be the providers of training for most credentials. Again, this cannot be definitively stated until the industry engagement on valued credentials is completed.

V. Identifying, Recording and Tracking Credential Attainment within the Region: Because the goal of producing the region's share of the State target of a million industry-recognized credentials over the next ten years applies to the entire system (community colleges, adult schools, 4-year institutions, registered apprenticeships, etc.) and not just the WDBs, the stakeholders will form a workgroup to address the apportionment of goals among local areas and, within each area, the various partners. The stakeholders may look to the California Partnership for the San Joaquin Valley to reinstate its Higher Education and Workforce Development Work Group to convene discussions around both goals for credentials and the development of a process to track their attainment.

Given the population of the region relative to the state as a whole, it is anticipated that the RPU would be responsible for ten percent of the state goal or 100,000 credentials.

E. Workforce System Accessibility and Inclusiveness

This portion of the plan addresses system accessibility and inclusiveness on two levels. The first concerns the approach used to ensure that a wide range of viewpoints were expressed during the planning process, where the second level describes various ways in which the workforce system makes services accessible to all job seekers, including those with barriers to employment. As with nearly all other features of the plan, information provided represents past accomplishments, the current status of the system and plans for moving forward. Where specific aspirations are described, corresponding statements are found in Section L, which summarizes regional goals.

I. Stakeholder Input on Regional Planning: All stakeholders were invited to and included in planning forums held across the RPU to discuss workforce issues. As described in Section A, individual meetings were also held with representatives of a number of mandatory partners, such as the community colleges, economic development and DOR. The 16 planning forums that were held became a centerpiece of the planning process and intelligence gathering about where opportunities for improvements exist, including increasing system accessibility for individuals with limited English proficiency, the re-entry population, persons with disabilities and others from high need and historically disadvantaged communities. The forums are described in detail below.

Outreach to Stakeholders Representing Target Groups: The planning process has been inclusive by design, with all points of view, experiences and priorities valued and taken into consideration. The eight WDBs reached out (largely through email notices) to community organizations representing target populations. Examples of stakeholders representing the interests of key populations include: Proteus on behalf of farmworkers; Friends Outside for returning offenders; and the Fresno Bridge Academy for disconnected youth. Attachment 8 is a list of all organizations invited to participate in the forums and Attachment 9 indicates all of the individuals who attended.

Insights on System Accessibility: Across the various stakeholder gatherings, many issues were raised and opinions expressed. An unexpected outcome of these sessions was a series of common themes that developed, despite differences in location and composition of participants. Even more interesting is the fact that many of the themes directly reflect or touch upon the needs of those with employment barriers. Themes include:

- The need for English language skills training. While, as noted, opinions varied about levels of need and best training methods, there was widespread agreement about the effects of English fluency on earning potential.
- The value of work experience, internships, job shadowing and other forms of work-based learning for all job seekers, but, particularly, for individuals lacking work history. According to stakeholders, exposure to work not only helps to inform job and career decisions, but has a significant impact on the confidence and performance of individuals in post-training employment.
- Begin career education and exploration early. In fact, according to those working most closely with disadvantaged communities, start it very early. In communities historically disconnected from the labor market, children with insufficient exposure to and understanding of jobs, become adults with the same lack of familiarity. Information about jobs, careers, and key sectors should be contextualized within every aspect of K-12 learning.
- Treat digital literacy as a foundational skill for employment on par with numeracy and literacy.

- Deepen the workforce systems' relationships with CBOs not only as on-ramps, but as partners in removing barriers to employment.

Each of the foregoing approaches is woven into one or more of the goals and action steps that conclude the Regional Plan.

System Stakeholder Forums: Over a six-week period in November and December 2016, a total of 16 forums were conducted, with nearly 400 stakeholders (representing a wide cross-section of partners from business, education, economic development, organized labor, community-based agencies and the workforce system) participating and sharing their knowledge, experiences and opinions. Each forum covered one or more of seven topics addressing critical elements covered by the regional workforce plan: 1) the focus upon priority sectors and career pathways and fostering demand-driven skills attainment; 2) creating opportunities for upward mobility; 3) aligning, coordinating, and integrating programs and services; 4) promoting workers' attainment of industry-valued and recognized post-secondary credentials; 5) focus on quality jobs; 6) leveraging community resources; and 7) system accessibility and inclusiveness.

The forums generally lasted 2 hours and provided participating stakeholders with a brief overview of the regional planning process and background on the session's topic. The consultants acted as facilitators and posed 3 to 5 broad questions to the participants, facilitating discussions to solicit input to inform regional planning efforts. Each of the local boards hosted one or more forums, as outlined in Attachment 7.

The forums were structured around the following five topics:

Sectors and Career Pathways: Participants were introduced to the definition of career pathways as a combination of education, training and other employment-supporting services. Questions posed to individuals attending the forums included:

- What are the "hard-to-fill" jobs and occupations in demand sectors?
- Where are the skill gaps?
- What career pathways exist to help workers enter and succeed in these jobs and occupations?
- What can we do as a community to improve career pathway opportunities?

Pathways to the Middle Class: The facilitators started off these sessions by introducing stakeholders to a key objective of the State Plan - enabling upward mobility for all Californians, including populations with barriers to employment. The emphasis that the State Plan places on job quality was also discussed. Those attending the forums provided responses to these questions:

- What is a "mid-level" or "middle class" job in our community?
- Which "mid-level" jobs are hard to fill due to local skills shortages?
- What skills and prior experience do these jobs require?
- What is the career pathway to land and succeed in these jobs?
- What can we do as a community to see that local people who have major barriers to employment can get on and succeed in these career pathways?

Aligning and Leveraging Workforce and Education Resources: The focus of these forums was on the full range of workforce and training resources, with training being defined in the broadest terms to cover foundational skills, academic skills, job skills (hard skills) and essential skills (work readiness and work maturity skills). Participants shared their thoughts on:

- What education, training and workforce resources does our community currently have?
- Do these resources provide trainees the skills needed for in-demand jobs in key sectors?
- How can we improve the ways in which these educational and workforce resources are used to help all jobseekers (including youth and those with barriers to employment) succeed in the identified, highest priority career pathways?

- How can we ensure that youth and job seekers with serious barriers to employment have access to and succeed on these career pathways?

Industry-Valued Credentials: Building upon the proposition that only industry can determine what credentials it values, the facilitators described content from the State Plan concerning the attainment of credentials by those participating in regional sector pathway programs. Stakeholders provided their responses to several questions including:

- What credentials are currently available that fit the critical career pathways?
  - Do these credentials meet business/industry expectations? How could they be improved?
  - Are methods to get these credentials reasonably accessible to potential members of our workforce with significant barriers to employment? English Language Learners? People with minimum wage jobs? Others?
- How can we improve access to credentials along career pathways?

System Accessibility: For context, sessions on this topic opened with a discussion of populations likely to face one or more barriers to employment and with description of various services they most often need to prepare for work. Stakeholders were asked to consider the following in terms of building a more accessible, inclusive and responsive workforce system throughout the Central Valley:

- Are basic skills training and other pre-vocational services available in sufficient quantity to meet the demands for these services?
- How can workforce and education services be made more accessible to all job seekers?
- What groups are most at risk of being left behind?
- For foreign born individuals and English Language Learners, what workforce and education services are available to address workforce challenges?
- What role do community-based organizations play in providing accessibility to the system?

The forums became a focal point of the regional planning process and a milestone in developing broader and more inclusive regional partnerships. They yielded substantive input both from individuals and organizations that are integral to the daily operations of the system and from those who have little familiarity with it. While commentary expectedly varied from session to session, common themes emerged across the region. Several of these are summarized under Item I, above.

II. Adult Education Block Grant ("AEBG") Consortia in the SJVAC RPU: There are eight AEbg consortia, representing 81 distinct education agencies, linked to the SJVAC RPU. Some of the districts and institutions within these consortia lie outside the RPU, their boundaries stretching into adjacent workforce regions. The consortia aligned to the regions are: Delta Sierra Regional Alliance, Gateway Adult Education Network, Kern AEBG Consortium, Sequoias Adult Education Consortium, State Center Adult Education Consortium, West Hills College Consortium, West Kern Consortium, and Yosemite (Stanislaus Mother Lode) Consortium.

Participation of AEBG Leadership and Representatives: Leadership from six of the AEBG consortia participated in one or more of the regional planning forums. For the two consortia whose leaders did not attend, member institutions sent representatives. The consultants met one on one with Executive Directors of two consortia: Sequoias Adult Education Consortium and State Center Adult Education Consortium. Input from AEBG representatives was extremely valuable, especially with regard to the capacity of the adult education system to provide vital training for English language learners and job seekers needing basic skills remediation or support to earn a high school diploma or equivalency. Participation of consortia representatives also shed light on the substantial capacity of some adult education programs to provide skills training for high-demand sectors including construction, healthcare and manufacturing.

Review of Consortia Plans: Among the eight consortia, planning documents are voluminous. The SJVAC's regional planning consultants have reviewed some of the consortia plans (which include AB 86 Plans, Consortium 3-Year Plans and Annual Plans) and have reported that there is significant alignment with the Regional Workforce in terms

of priorities, such as the need for resources and effective strategies for ESL and basic skills instruction. As described in Section J, Exhibit 2 of this Regional Plan includes a list of links to the web page where the plans for all eight consortia can be found.

III. Need for and Availability of Basic Skills Education: Information on the need for basic skills education services is principally available from two sources: demographic data and system stakeholders, including educators and those representing public agencies and community programs that work most closely with individuals needing basic skills training. Data available for the SJVAC RPU indicates that nearly one in five Central Valley residents speaks English "less than very well." In addition, the US Census Bureau's American Community Survey data for 2010 – 2014 indicates that 12.8% of the adult population has less than a 9th grade education with an additional 10.6% that have an education levels between 9th and 12th grade, but no diploma. Together these numbers suggest that there is substantial need for services. Those in the field provided mixed input. According to many, structural capacity exists among the network of providers to deliver all the basic education services needed, but financial resources were too few to meet a 100% of the need. Still others reported that some education programs had to publicize their programs to get enough student participation to spend their allocations. While no one would estimate the number of individuals receiving basic skills services in the region (due largely to definition issues), information suggests that programs in some communities have developed very strong reputations and are, therefore, able to attract learners to the basic skills training they need to participate effectively in career pathway training and in the workplace. The partners need to further examine this issue to determine what regional strategies could be developed to ensure programs and resources are aligned with need.

Demography and Languages Spoken in the RPU: The Central Valley is home to a variety of ethnic groups. Non-Hispanic whites accounted for just over half of the valley's population, and Latinos were the largest minority group. With regard to languages spoken in the Central Valley, although Spanish is the most common language after English, the Central Valley is host to dozens of languages such as Hmong, Romanian, Farsi and Punjabi.

IV. Contextualizing Basic Skills into Regional Sector Pathway Strategies: As indicated earlier, a number of models exist for building basic skills into vocational training programs, and some work-based learning models. One such strategy is Integrated Basic Education and Skills Training (I-BEST), which pairs Adult Basic Education and/or English Language Acquisition instructors with professional-technical instructors in the classroom to provide students with literacy education and workforce skills at the same time. I-BEST challenges the traditional notion that students must first complete all levels of basic education before they can begin workforce training. As new career pathway programs are developed and existing ones are assessed for improvement, the partners will evaluate options to effectively integrate basic skills training into pathway programs.

Strategies to Address Limited English Proficiency (LEP): In the same way that basic skills can be integrated into sector pathway programs, so can English language skills training. A September 2014 Brookings Institution report examined the effect of being non-English speaking on Central Valley residents and offered a number of suggestions for addressing a lack of English fluency. According to the report's author, English proficiency is the most essential means of opening doors to economic opportunity for immigrant workers. The report's recommendations for reducing limited English proficiency include:

- Employer-initiated English education programs, particularly in industries such as agriculture, accommodations and food service, and manufacturing, where the percentage of LEP workers is highest.
- Targeting outreach based on the LEP population size, growth and period of arrival, as well as knowledge of languages spoken.
- Instructional innovation enabling LEP adults to access educational tools online and by mobile device.
- The most effective classes and programs combine English education with community integration and vocational training

In working to develop and expand sector pathway programs, the partners will work to identify strategies and opportunities to test their effectiveness. As discussed, stakeholders participating in the planning process remarked

repeatedly on difficulties in recruiting many LEP individuals to English skills training. By implementing more accessible methods of training delivery, some of these obstacles can likely be overcome.

V. Streamlining Access to Foundational Skills: Making basic and foundational skills training easily accessible is a system priority in the San Joaquin Valley. Opportunity abounds and businesses, especially those in high growth sectors, are looking for employees ready to take on the challenges of the workplace. To meet such challenges, workers must have basic reading/communications, math and digital literacy skills. The local boards in the SJVAC RPU will develop a regional protocol to ensure expediency in making basic skills training referrals for those needing these services to accelerate their participation in vocational skills and work readiness training.

Intake and Assessment Process: WIOA is uniquely prescriptive concerning intake and assessment. Programs and funding streams governing system partner programs are much less so. The partners are committed to minimizing and, where possible, completely removing barriers to participation. The Central Valley WDBs will work with partners to identify and adopt strategies to promote rapid access to services for all job seekers, particularly those with barriers to employment.

VI. Ensuring System Accessibility for People with Disabilities: All major system partners providing training (local WDBs, the community colleges, AEBG institutions, etc.) are subject to federal requirements under the American's with Disabilities Act (ADA) and provisions of the California Civil code ensuring access for persons with disabilities. All surveyed reported no compliance issues with physical accessibility. Each of the eight local boards is required by WIOA to form a "disability accessibility" workgroup or committee. These workgroups will share concerns, "best practices" and solutions across the RPU.

Access to Training and Regional Sector Pathway Program: Program accessibility is governed by many of the same statutes protecting physical accessibility. However, the partners are committed to more than access. The goal is inclusiveness. WIOA defines career pathways to include counseling to support an individual in achieving his/her education and career goals and indicates that such programs should organize education, training and other services to meet the particular needs of the individual. Under the Regional Plan, this definition will serve the partners well to ensure that persons with disabilities have access to services, that partners will seek to expand programs and strategies such as the use of Disability Resource Coordinators (DRC) who coordinate training and education for staff, organize and facilitate collaborations with local, state, and federal agencies, as well as non-local areas and organizations. The DRC develop strategies to create systemic change to improve employment outcomes for people with disabilities. They are currently in place in Madera and Merced counties.

VII. Promoting Regional Sector Pathway Participation among CalWORKS Participants: Each of the local boards works closely with its corresponding county welfare agency(cies). CalWORKS participants are indeed an appropriate target group for regional sector pathway programs. As discussed throughout Section B, which describes both the regional economy and key characteristics of the labor force, the region's growth sectors need talent! No worker is disposable. CalWORKS participants are, almost by definition, reliable. They are parents, which suggests that many are accustomed to managing multiple priorities, operating with limited resources, and making quick decisions – all traits used every day in the workplace and coveted by employers. CalWORKS participants also typically lack extensive resumes. Therefore, they need to bring especially strong workforce preparation to the table in order to compete successfully for jobs. Regionally, the boards will develop and deploy uniform recruitment messaging to broadcast to county welfare agencies to promote the benefits of CalWORKS participants enrolling in sector pathway training. As applicable, local workforce boards will "flag" case files for these participants as being likely to benefit from assistance by a workforce system navigator (see Item IX, below).

VIII. Regional Collaboration to Ensure Support for System Customers: The regional partners are committed to ensuring that a full range of services are available to support every trainee's/participant's completion of his/her services plan, including regional sector pathway programs. In a geographic area as large as the San Joaquin Valley, support services are likely to be managed and delivered by local providers. But across the region, the partners can

agree to a protocol under which comprehensive support is provided to participants enrolled in sector pathway programs. The need for services is typically identified following assessment, when a service plan is developed. At this time, resources are identified to address comprehensive need, including significant barriers to employment. The partners have no expectation that all job seekers will progress at the same pace through services. Some, for instance, will need assistance with basic education services prior to training and others may require the use of assistive technology throughout participation. Under WIOA, participants enrolled in training are assigned a case manager to monitor their progress toward completion of services and to intervene with additional support as obstacles arise.

IX. Incorporating Community-Based Organizations into the Network of Regional Workforce System Providers: One of the major themes arising during over 30 hours of intensive engagement with nearly 400 stakeholders throughout the Central Valley was the belief that community-based organizations need to play a greater role in the overall workforce system. Several stakeholders have commented on the importance of CBOs to the communities they serve and have highlighted the fact that most community-based agencies were established to address unmet needs. Based on stakeholder input during the planning process, the RPU partners will explore opportunities to better integrate local and regional non-profits into the workforce development system. These opportunities may include:

- Expanding the role of CBOs as on-ramps to the workforce system by enabling individuals to access a full range of workforce information at their sites
- Holding orientations to workforce system services at CBO facilities
- Bringing classes (basic skills, ESL, employment readiness, etc.) to community locations
- Utilizing CBO representatives as workforce system navigators for the populations they represent

X. Creating Pathways to the Middle Class: The system is made up of partner organizations that provide services to respond to a wide range of needs, including basic skills education, demand-driven skills training, support services, referrals to jobs and much more. Most individuals seeking career preparation and employment assistance come to the system for one or more particular services that culminate in the best job opportunity that their new skills and work history can leverage. For some, this will be a middle skill job paying family supporting wages. For many more, including those who are entering the job market for the first time, it will be an entry-level job that will serve as a stepping stone to better opportunities that will become available with experience and the acquisition of more advanced skills. Job seekers will disengage with training programs to concentrate more on gaining or maintaining employment to fulfill short term economic needs Many people will carry more than one part time job to fulfill basic needs.

While a particular service may have a beginning and an end date, the availability of the system to those who need it is constant. The system's best tool for ensuring that individuals remain connected to the system as they progress from entry-level jobs to better jobs is to heavily promote the multiple on-and-off ramps to additional training and services. Some individuals will enter and exit services many times. The workforce system cannot expect to retain individuals in programs once they secure a job, but can work to ensure that participants are aware of services that are available to support their progress toward higher wages and career goals. A goal of this Regional Plan is for the system partners to develop a protocol for promoting career pathway opportunities for upskilling and stackable credentials.

F. Regional Focus on Job Quality

Job quality and quality jobs have dominated several discussions during the regional planning process. Of interest has been the universal decision by stakeholders not to define quality jobs more precisely than the State Plan and regional planning guidance. Based on California statute, this "definition" advises the workforce system to emphasize "placement in a job providing economic security or job placement in an entry-level job that has a well–articulated career pathway or career ladder to providing economic security." As described below, the partners embraced this notion and recognized that starter jobs must represent a means to an end rather than a dead end. The strategy of the

RPU's workforce system with respect to job quality is directly connected to the region's emphasis on high-demand sectors. These sectors have not only the greatest likelihood of offering career advancement leading to higher wages, companies in these sectors have the capability to grow and expand, enabling them to use revenues, in part, to offer good wages and benefits to employees. Following is a discussion of entry-level and middle skill wages associated with jobs in priority sectors, along with plans to target business where quality jobs are available. In addition, the regional partners have identified incumbent worker training strategies with great potential to be replicated throughout the SJVAC RPU, likely in partnership with the community colleges.

I. Employment and Earnings Potential Associated with Target Sectors and Regional Sector Pathways: As discussed in Section C of this plan, the partners have begun a process to work with system stakeholders on the development of career pathway programs that will be implemented regionally. With the next two years, partners expect to have one or more demand-driven sector pathway programs designed for each of the region's six target sectors. Some of these regional sector programs will be based on existing efforts, both regional and locally, such as advanced manufacturing training that is currently under design as part of the SlingShot initiative and the multi-craft core curriculum and pre-apprenticeship training currently in use within several local areas. Other regional sector pathway programs will be those for which planning is only conceptual at this point. Nevertheless, given industry input to date, the partners anticipate implementing training programs that will prepare completers for employment in a variety of entry-level and middle skill jobs including the following.

Earning for Occupations Directly Related to Regional Sector Pathway Programs

Advanced Manufacturing		
Entry Level Occupations		
Job Title	***Employed in 2016***	***Median Wage***
Team Assemblers	2,614	$ 13.07
Welders, Cutters, Solderers, and Brazers	2,078	$ 21.33
Middle Skill Occupations		
Job Title	***Employed in 2016***	***Median Wage***
Electrical and Electronics Engineering Technicians	220	$ 37.74
Bookkeeping, Accounting, and Auditing Clerks	503	$ 17.90

Agriculture (particularly, Value-Added Agriculture)		
Entry Level Occupations		
Job Title	***Employed in 2016***	***Median Wage***
Packaging and Filling Machine Operators and Tenders	6,495	$ 13.63
Farmworkers, Farm, Ranch, and Aquacultural Animals	5,087	$ 12.88
Middle Skill Occupations		
Job Title	***Employed in 2016***	***Median Wage***
Agricultural and Food Science Technicians	719	$ 17.33
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	71	$ 21.54

Construction (including Public Infrastructure)		
Entry Level Occupations		
Job Title	***Employed in 2016***	***Median Wage***
Construction Laborers	6,702	$ 16.39

Carpenters	4,698	$ 21.35
Middle Skill Occupations		
Job Title	***Employed in 2016***	***Median Wage***
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	1,719	$ 21.54
Telecommunications Equipment Installers and Repairers, Except Line Installers	387	$ 25.78

Healthcare		
Entry Level Occupations		
Job Title	***Employed in 2016***	***Median Wage***
Medical Secretaries	5,512	$ 15.81
Office Clerks, General	5,121	$ 14.52
Middle Skill Occupations		
Job Title	***Employed in 2016***	***Median Wage***
Nursing Assistants	10,291	$ 12.75
Licensed Practical and Licensed Vocational Nurses	5,134	$ 24.48

Transportation and Logistics		
Entry Level Occupations		
Job Title	***Employed in 2016***	***Median Wage***
Laborers and Freight, Stock, and Material Movers, Hand	8,101	$ 12.35
Industrial Truck and Tractor Operators	3,688	$ 15.87
Middle Skill Occupations		
Job Title	***Employed in 2016***	***Median Wage***
Heavy and Tractor-Trailer Truck Drivers	14,868	$ 18.85
Aircraft Mechanics and Service Technicians	535	$ 28.63

Energy (including Green Energy)		
Entry Level Occupations		
Job Title	***Employed in 2016***	***Median Wage***
Electrical Power-Line Installers and Repairers	279	$ 46.34
Control and Valve Installers and Repairers, Except Mechanical Door	225	$ 22.58
Middle Skill Occupations		
Job Title	***Employed in 2016***	***Median Wage***
Wind Turbine Service Technicians	144	$ 23.44
Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	61	$ 38.73

II. Regional Wages: EDD LMID's September 2016 Labor Market Data Summary does not provide aggregate median wage data for the RPU, but does provide the following "median household income" data for each of the ten associated counties.

Median Household Income by County	Median Household Income
Fresno	$45,201
Inyo	$45,625
Kern	$48,574
Kings	$47,341
Madera	$45,490
Merced	$43,066
Mono	$61,814
San Joaquin	$53,253
Stanislaus	$49,573
Tulare	$42,863

The data does not indicate the number of wage earners in a given household.

III. Emphasis on Quality Jobs: All boards within the region prioritize training and employment preparation activities leading to jobs in high-growth and other demand industries. This reflects a commitment to quality jobs, as the target industries each boast career paths to well-paid middle skill jobs, which have entry-level employment opportunities that serve as on-ramps. Plans to emphasize quality jobs are described below.

Reaching Regional Consensus on a Quality Jobs Focus: Stakeholders engaged in the planning process, including those representing individuals with barriers to employment, generally agreed with the language of the state statute pertaining to "good jobs." They did offer a number of suggestions that helped frame the issue toward the development of regional goals. As a baseline, there was broad agreement that jobs into which partners place participants should pay a self-sufficiency wage, even for first time workers. Generally, the job characteristics that stakeholders believe speak to quality are: good wages (family supporting); benefits; flexibility; stability; advancement potential; and fulfillment/likeability. Acknowledging that job quality is not a fixed concept, there was significant agreement that entry-level jobs demonstrate quality when there are discernable next steps for training and skills acquisition that enable workers to move up and earn better wages.

Current Efforts by Local Boards to Focus on Quality Jobs: The system partners, including local WDB's, community colleges and other workforce and training providers currently have relationships with business (including many large employers and business where workers are represented under collective bargaining agreements) that offer good wages and career opportunities. Jobs with such companies are the most competitive and workers with a combination of the best experience, most training, recognized credentials, and demonstrable skills are those who are hired. Specific actions the partner will take with regard to prioritizing jobs with good wages and benefits and increase opportunities for all job seekers include:

- Providing training that produces workers with high demand skills
- Working with organized labor, industry associations and others to identify companies that pay competitive wages, provide benefits and offer opportunities for career advancement.
- Building relationships with identified companies to promote their understanding of the value of training and credentials that the system's candidates possess. Also, work with these businesses to understand where entry-level on-ramps exist to position workers for advancement to higher paying jobs.

IV. Incumbent Worker and Career Pathway Strategies: Many of the partners have substantial experience in working with employed individuals to retrain in new skills or otherwise upgrade their skill sets. Expanded use of these strategies within the region will bolster the system's ability to move workers from entry positions to middle-skill jobs paying higher wages. Progress in this area and plans to increase incumbent worker training are described below.

Current Regional Initiatives: Several of the local boards are working with incumbent workers on a project-by-project basis. However, Tulare County has implemented an incumbent worker initiative that is gaining momentum and holds

promise for creating opportunities for new hires, as current workers upgrade skills and move to higher positions. UpSkill Tulare County builds upon the Aspen Institute's "UpSkill America" vision, encouraging businesses to invest in the existing workforce, which, in turn, is likely to improve internal career ladders and makes career pathways more visible. UpSkill represents a shift from the typical WIOA strategy of trying to fill higher skilled openings ("good jobs") with recently trained unemployed individuals to filling these positions with entry-level workers currently employed by the business. A benefit of this approach, as workers move up, is often the creation of entry-level openings that require little or no training for new workers. UpSkill is gaining traction with Tulare County businesses that have expressed that they prefer to hire from within for skilled positions, as current workers have generally demonstrated their value and are familiar with company culture.

Under the UpSkill initiative, Tulare County is currently focusing on 3 priority sectors: Health Care; Logistics; and Manufacturing. At present, training for incumbent workers is being provided in cohort format by the Training Resource Center at College of the Sequoias and includes: Essential Workplace Skills: First Line Supervisor Training, and Advanced Technical Skills (customized by industry need). Additional training options for incumbent workers, including work-based learning, may soon be offered to broaden the interest of businesses in the UpSkill initiative. Tulare County is using a combination of WIOA Incumbent Worker Training (IWT), ETP, and other specialized funding to pilot the UpSkill initiative.

Expanding Regional Capacity for Incumbent Worker Training: All other local boards have expressed interest in the UpSkill model. Working through the CCWC structure the boards are committed to developing a protocol for rolling out the initiative throughout the region, and to develop common processes that would enable the initiative to be marketed under a uniform message across the entire Central Valley.

G. Recording and Tracking Training-Related Employment

Within federally-funded workforce development programs, identifying, recording, tracking and reporting of training-related placements has long been a practice at the local level no matter the requirements of U.S. DOL performance measures or statewide reporting systems. Determining whether jobs secured by participants are within the field for which they trained, provides workforce administrators and staff critical information in several areas, including the value of training provided, true labor market demand and the effectiveness of career exploration/preparedness participants received prior to training. It also speaks to return on investment, indicating the relative worth of a particular program in terms of producing job ready candidates. As part of the RPU stakeholder's commitment to a demand-driven training system, the local WDBs will lead a process to examine how training-related employment can be determined for individuals trained by all education and workforce partners, including those not funded by WIOA.

Tracking Training-Related Placement under WIOA: The local boards with the SJVAC RPU currently track and record training-related placements. Within CalJOBS, when an individual enters employment at closure or follow-up, WDBs and their agents are able document employment within the Entered Employment Form. As job information is recorded, the system will confirm if the job is considered "Training Related Employment." This information is based on Occupation Codes.

Working with Stakeholders to Track Training-Related Placement throughout the Region: The State Plan requires regional partners to determine the extent to which individuals receiving sector-focused and demand-driven training are actually securing jobs in fields and sectors directly related to their programs of study. As stated, this is currently being identified and tracked for those receiving training funded by the Workforce Investment and Opportunity Act ("WIOA"). As a goal of this plan, the CCWC, in cooperation with the CPSJV, will convene representatives from training and education providers across the region (including 4-year institutions, community colleges, adult education, private vocational, institutions and others) to discuss options for establishing a "denominator" of trainees, the basis for determining training-relatedness and methods for tracking and recording training activities and placement outcomes. The CalJOBS system holds promise for scalability and application to this issue and will likely serve as a jumping off point for dialog among the partners.

H. Adherence to Federal Requirements for Regional Planning

The RPU's Regional Workforce Plan addresses WIOA's "regional coordination" requirements by adopting the goals of California's Strategic Workforce Development Plan and via the following approaches:

Development of a Regional Plan: The SJVAC RPU's Plan complies with WIOA Section 106(c)(2), by describing the partners' approach to the A-H activities and by incorporating the Local Plans developed by the eight local boards as of the Regional Plan.

Regional Service Strategies: Much of the regional planning process has focused on opportunities for implementing strategies across two or more local areas or throughout the entire region. Various regional strategies and approaches being piloted, in development, or under consideration are discussed throughout this plan. These include options for incumbent worker training, industry engagement, training for English language learners, courses for emerging skill areas and more. Goals pertaining to various regional service strategies are indicated in Section L, below.

Development and Implementation of Sector Initiatives: Sector initiatives are underway at the regional level for manufacturing under the RPU's SlingShot initiative. Various local construction, manufacturing and healthcare career pathway programs have crossed boundaries and are being scaled up among multiple boards. Local boards have focused training resources nearly exclusively on targeted demand sectors. New levels of collaboration with the community colleges (arising from SlingShot, long-term cooperation on numerous projects, and this planning process) will result in more demand-driven training for the RPU's six target sectors. The regional goals established in this plan will accelerate development and implementation of regional sector pathway programs and related initiatives.

Collection and Analysis of Regional Labor Market Data: While EDD's LMID has unrivaled capacity with regard to data about the labor market and the workforce, SJVAC's regional planning process serves as testimony to the ability of the regional partners to gather intelligence from the field, including information about industries, businesses, and workers and those seeking employment. As a goal of the Plan, we will explore opportunities to share information with LMID, with the hope that such information will help to inform the data collection and analysis it performs on behalf of the Central Valley. In addition, the RPU will request support from LMID with regard to defining the green energy sector.

Administrative Collaboration: At this stage of regional planning, local boards have agreed that opportunities may exist for collaboration on administrative functions, such as monitoring. Further review is planned.

Collaboration on Supportive Services: Given the vastness of the region and the fact that many support services providers (both public and private) are place-based, regional coordination of support activities and services is a daunting task. However, this matter will remain on the "regional radar" and will be included in on discussions among the partners.

Coordination with Regional Economic Development: Locally, the eight WBDs work closely with their economic development counterparts and, through county-level economic development agencies, connect to the California Central Valley Economic Development Corporation, which serves the RPU counties (absent Inyo and Mono). As the California Partnership for the Central Valley has responsibility for the Regional Industry Cluster Action Plan, it is situated as an ideal platform for furthering discussion on regional economic development. As the manager of a countywide Economic Development Corporation; the Kings County WDB Director serves as the local EDC President, and is the conduit for exchange between the regional EDC and the RPU.

Agreement on Performance Measures: The local boards have completed joint negotiations with the State on performance measures.

In addition, as expressed throughout this narrative, the Regional Plan meets State Plan requirements pertaining to the partners' development of regional sector pathways.

I. Regional Agreements Among RPU Partners

For nearly a decade, the boards that comprise the SJVAC have had a memorandum of understanding (MOU) in place that create a framework for collaboration among the local workforce areas and opportunities to coordinate, especially with regard to special projects and initiatives that cross the boundaries that define the local area. This agreement is currently being reviewed and updated, confirming the value that the boards place on cooperation and bringing greater capacity and resources to the region.

Central Valley Workforce Collaborative Regional Agreement: The purpose of the current MOU among the eight San Joaquin Valley WDBs is to maintain cooperative and mutually beneficial relationships. In 2007, an original MOU created the Central California Workforce Collaborative as "a confederation of equals," that operates under a general working structure, rather than as an entity. Both the current and prior MOUs stress the importance of collaboration with regard to securing regional funding and the leveraging of resources to strengthen the workforce system throughout the Central Valley. The MOU emphasizes the independence of the eight boards and the fact that all parties agree to respect one another's organizational practices and management structures in the execution of collaborative activities. The agreement empowers the boards to: develop and implement collaborative efforts at a regional level; conduct formal and informal meetings with members present under the CCWC name to discuss best practices; utilize the CCWC name in sponsorship materials for third party organizations; and, project by project, designate local workforce development boards as the "lead agency" for regional initiatives.

Furthermore, the CCWC MOU establishes a format for meetings, which may be held in person, via electronic media or through conference calls, and for keeping minutes of scheduled meetings. Responsibilities for organizing meetings rotate among the boards.

Having the CCWC MOU in place has not only resulted in the award of numerous special grants and cross-county collaborations in the Central Valley, it has provided a huge head start in the regional planning process.

Expansion of Existing MOU: The current CCWC MOU provides clear parameters under which the local boards collaborate, communicate and work in unison on particular projects and activities. As the WDBs and RPU partners work toward the system goals outlined under section L (below), it is possible that adoption of new procedures and strategies across the region, such as consolidating "Eligible Training Provider List" administration or the use of joint incumbent worker training protocols, could result in the development of one or more separate cooperative agreements among the eight boards.

Other Agreements among Local Workforce Development Boards and System Stakeholders: Each of the eight local boards within the RPU maintains various MOUs and agreements between partner organizations, including the one-stop MOUs prescribed by WIOA. As planning for regional coordination and system alignment continues across the Central Valley, the WDBs will consider the value of scaling up local partnership/collaborative agreements across the region. Discussions around such opportunities may be led by CCWC, CPSJV or other system partners that identify prospects for structured agreements to support enhanced regional coordination.

J. Related Plans and Analyses

The following items are included as exhibits to the SJVAC Regional Plan:

Community College Strong Workforce Program Plan for the Central Valley/Mother Lode Region: The Plan, completed on January 17, 2017 is included as Exhibit 1.

Adult Education Block Grant Consortium: The Plans for the eight AEBG consortia are too voluminous to attach to the plan. However, included as Exhibit 2, is a list of links to the web page where AB 86 Plans, Consortium 3-Year Plans and Annual Plans can be located.

K. Attachments

In addition to the above mentioned reports from education partners, the following materials are included as attachments to supplement information provided within the narrative.

I. Principal Resources for Economic Analysis

a. Regional Economic Sector and Skills Gap Analysis: CCWC Region, Applied Development Economics, Inc. (ADE), October 10, 2016 (Attachment 1)
b. Supplemental Information and Analysis, ADE Memorandum, December 5, 2016 (Attachment 2)
c. *Regional Planning Unit Summary: San Joaquin Valley and Associated Counties*, California Employment Development Department, Labor Market Information Division (EDD LMID), September 1, 2016 – Revised (Attachment 3)
d. Regional Economic Analysis Profile, EDD LMID, April 2015 (Attachment 4)
e. *Labor Market Overview: Central Valley/Mother Lode Region,* California Community Colleges' Center of Excellence Mother Lode Region, May 2016 (Attachment 5)
f. San Joaquin Valley Regional Industry Cluster Analysis and Action Plan, Applied Development Economics, September 2012 (Attachment 6)

II. Workforce System Stakeholder Forums

a. List of Forums – Dates, Topics, Locations (Attachment 7)
b. List of Individuals/Organizations Invited to Forums (Attachment 8)
c. List of Individuals/Organizations that Attended Forums (Attachment 9)

III. Regional Agreements

Central California Workforce Collaborative Memorandum of Understanding (MOU) (Attachment 10)

L. Regional Collaboration: Goals and Associated Action Steps

Throughout the foregoing narrative, numerous strategies, approaches and processes are described as "aspirational" or are represented as planned or "in progress." On behalf of the myriad of regional stakeholders that have contributed to the Plan by providing recommendation and sharing both resources and insights, the eight LWDBs comprising the SJVAC RPU have established the following 2017–2020 goals for the regional workforce system.

I. Economic Analysis

a. Collaborate with EDD LMID to develop a clear industry cluster description for the energy sector, including green energy
b. Establish a protocol for to share "intelligence" about demand industries and other high growth sectors with EDD LMID for the purpose of data analysis to support regional sector pathway programs.

II. Engagement with Economic Development

a. Revisit Regional Industry Cluster Action Plan
b. Explore opportunities for stronger regional coordination with economic development

III. Regional Sector Pathway Programs

a. Implement intensive industry engagement processes to: discuss industry needs for skills in various classifications, including middle skills jobs and entry-level employment that provides a path to these jobs; identify new classifications or skills sets for which training is needed and provide direction on content requirements; review new and existing career pathway programs (including the one's under Item III, below), which have been developed throughout the region, and provide input on the relevance of content and what changes are necessary to reflect current skill needs of business; and determine the frequency with which regional sector pathway program content should be reviewed to ensure it remains relevant
b. Following intensive engagement processes, update the Regional Plan to include priority regional sector pathway programs.

IV. Industry-Valued Credential Attainment

a. Implement intensive industry engagement processes to: review and recommend metrics for determining the value of credentials; review existing credentials awarded in the region and determine their value; identify credentials that would be desirable for each target industry; and develop a process for re-confirming the value of credentials.
b. Following the intensive engagement process, update the Regional Plan to include industry-valued credentials linked to regional sector pathway programs
c. Credential attainment: Form a workgroup to address the apportionment of goals among local areas and, within each area, the various partners.

V. System Accessibility and Inclusiveness

a. English language skills training: convene a workgroup to develop strategies around the following challenges and issues: communicating the value of English language skills acquisition in terms of employment opportunities; making services accessible in terms of location, schedule and instructional methods; broadcasting the availability of programs and services; linking language skills to work requirements, and; offering various on-ramps to beginning, intermediate and advanced English skills training.
b. Develop a regional protocol: Expand use of work experience, internships, job shadowing and other forms of work-based learning.
c. Develop a regional protocol: Promote early career education and exploration via K-12 system.
d. Develop a regional protocol: Treat digital literacy as a foundational skill for employment on par with numeracy and literacy.
e. Survey workforce system partners regarding the availability of resources to support needed levels of basic skills training.
f. Work with education partners to evaluate options for integrating basic skills training (including ESL) into regional sector pathway programs.
g. Develop a regional protocol: Ensure expediency on referrals to basic skills training.
h. Develop a regional protocol: Ensure rapid access to services.
i. Examine opportunities to enhance the role of CBOs in the workforce development system.

VI. Focus on Job Quality

a. Provide training that produces workers with high demand skills.
b. Work with organized labor, industry associations and others to identify companies that pay competitive wages, provide benefits and offer opportunities for career advancement.
c. Build relationships with identified companies to promote their understanding of the value of training and credentials that the system's candidates possess.

d. Work with these businesses to understand where entry-level on-ramps exist to position workers for advancement to higher paying jobs.
e. Develop a regional protocol for the roll-out of the UpSkill model throughout the region.

VII. Tracking Training-Related Placements: Convene representatives from training and education providers across the region (including 4-year institutions, community colleges, adult education, private vocational, institutions and others) to discuss options for establishing a "denominator" of trainees, the basis for determining training-relatedness and methods for tracking and recording training activities and placement outcomes.

VIII. Administrative and Operational Coordination
a. Hold periodic regional convening across disciplines, perhaps using a neutral convener.
b. Explore opportunities for coordination of functions.

IX. Workforce System Development and Collaboration with System Partners: Work with education partners to identify strategies to improve: capacity to receive on-going input from industry; turn-around time to implement new and updated courses; consistency of training content from institution to institution; collaboration with system stakeholders in engaging industry; and, on-ramps for individuals with barriers to employment.

ATTACHMENT 1

July 6, 2016

Regional Economic Sector and Skills Gap Analysis: Merced County

Prepared for:

Merced County Workforce Investment Board

Prepared by:

Applied Development Economics, Inc.
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APPLIED DEVELOPMENT ECONOMICS

GREEN BUSINESS

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INTRODUCTION

Prepared under the auspices of the Central California Workforce Collaborative (CCWC), this report provides trend information and projections for jobs in Merced County by industry sector, industry clusters, and occupational openings. The analysis also provides a description of key labor force characteristics in the County and discusses the match between education and occupational background for the unemployed and part time workforce in relation to projected job openings.

SUMMARY OF FINDINGS

JOB GROWTH

- The County unemployment rate has declined to 11.1% in 2015, down from the peak of 18.0% in 2010, but still well above the low point before the recession of 9.4% in 2006.
- Before the recession, total jobs in the County peaked at 70,629 in 2007 and managed to regain that level in 2012. Jobs have grown to 75,282 (annual average) in 2015.
- Health Care is projected to see the highest growth in jobs between 2015 and 2025 (2,620 new jobs), followed by Education (1,727 new jobs), Retail (1,524 new jobs), and Food Service (781 new jobs).
- Merced County is also expected to see relatively strong growth in the logistics sectors, including Wholesale (469 new jobs), Warehousing (489 new jobs), and Transportation (136 new jobs).
- The manufacturing sector is projected to add 454 net new jobs, led by fruit and vegetable canning, fluid milk and cheese production and wine.
- In terms of industry clusters, the Agriculture cluster is projected to have the highest employment growth between 2015 and 2025. Much of the growth in this cluster is in distribution and farm labor, although the food processing sector has a number of growing industries as indicated above for manufacturing. In addition, there are nearly 250 new jobs projected in a number of more technical agriculture related fields such as scientific, operations and other technical consulting, testing labs, and surveying.
- The Health and Wellness cluster projects the second highest job growth (2,778 new jobs), with about half of the new jobs focused on care for the elderly and disabled.
- Retail, Accommodations and Food Services are the other major industry groups or clusters with job growth potential, reflecting both local serving commercial growth as well as expansion of the tourism sector.

- The projections of job openings show a concentration in food services and sales (672 combined annual openings), but also transportation and materials handling (237 annual openings), and office and administrative support (314 annual openings).

LABOR FORCE CHARACTERISTICS

- The labor force in Merced County is generally concentrated in the younger age groups, with 18 percent in the 16-24 age group and nearly 25 percent of the 25-34 age group. The prime working age group of 35-54 has 42 percent of the workforce, which is less concentrated on a year to year basis than the younger age groups. Workers over 55 constitute about 15 percent of the workforce and a number of employers report that impending retirements are a significant issue for them in terms of anticipated openings in the future.

- Non-citizen workers constitute 23.9 percent of the workforce in Merced County, though the rate varies with age (Figure 4). At 27.6 percent of the millennial labor force (25-34) and 29.4 percent of the prime working age (35 to 54) labor force, non-citizens are more concentrated in these two age cohorts relative to their overall concentration level, i.e. 23.9 percent.

- Non-citizens 25 and over exhibit high rates of less than high school attainment level: 68 percent of the non-citizens in the labor force have not obtained a high school diploma or a GED. Seventeen-percent of non-citizens in the labor force have earned a high school diploma or equivalent, although this rate is almost ten percentage points lower than the rate for citizens (i.e. 27 percent). This accounts in part for the differences in educational attainment between Latino workers and other workers in the labor force (Figure 6), as the non-citizen group is 86 percent Latino. It is also important to note that Latinos have earned high school diplomas and GEDs at rates similar to all other races, at 23.9 percent versus 25.0 percent.

- Veterans in Merced County tend to have high levels of overall educational attainment, with slightly over two percent not achieving a high school diploma. For the workforce as a whole, 27.4 percent do not have a high school diploma or equivalent degree. Among disabled workers, however, nearly 35 percent do not have a high school diploma.

CONCLUSION

At 1.4 percent a year, Merced County is expected to grow modestly from now to 2025, although analysts project a number of sectors including Health and Logistics, to exhibit steady growth at rates that double the overall annual growth rate of 1.4 percent. However, qualified workers are in short supply for certain key job categories. Based on the analysis presented in this report and discussions with key employers and workforce training organizations, the following can be identified as potential priorities for additional training efforts.

- Medical Technicians
- Electricians
- Maintenance Mechanics
- Ability to use computer operated processing controls and instruments (and related English competency)
- Workers with supervisory, management and business skills

ECONOMIC TRENDS

POPULATION AND EMPLOYMENT TRENDS

The County unemployment rate has declined to 11.1 percent in 2015, down from the peak of 18.0 percent in 2010, but still well above the low point before the recession of 9.4% in 2006 (Table 1). While employment levels have been increasing since 2010, the size of the labor force has oscillated somewhat, from 113,300 in 2010 to 115,100 in 2012, slightly down the following year to 115,000 in 2013, and finally to 114,990 in 2015.

Table 1 — Annual Labor Force Trends, 2000-2015: Merced County

Period	Labor Force Trends	Employed Labor Force	Unemploy -ment Rate
08-15 Ann. Growth Rate	1.7%	2.0%	15.3%
00-08 Ann. Growth Rate	1.5%	1.1%	10.7%
2015	114,992	102,300	11.1%
2014	115,400	100,600	12.8%
2013	115,000	98,300	14.5%
2012	115,100	96,300	16.4%
2011	114,500	94,300	17.7%
2010	113,300	92,900	18.0%
2009	105,400	87,900	16.6%
2008	102,200	89,200	12.6%
2007	99,800	89,800	10.1%
2006	97,900	88,700	9.4%
2005	98,700	88,900	10.0%
2004	97,600	87,000	10.9%
2003	96,800	85,800	11.4%
2002	95,700	85,300	10.9%
2001	91,700	82,400	10.2%
2000	90,400	81,700	9.6%

Source: Applied Development Economics, based on CA EDD LMID. Note: Unemployment rates for 2000-2008 and 2008-2015 in the table above are annual averages, not annual growth rate.

The household population has increased by 0.9 percent between 2010 and 2015 – a rate on par with the annual growth rate for the multi-county CCWC region as a whole (Table 2). In addition, group quarters population increased by 1,600 since 2010 due in part to students at University of California at Merced. Household population growth in the San Joaquin Valley exceeded statewide growth rates between 2011 and 2013, but has slowed in the past two years. As shown in Figure 1, Merced County

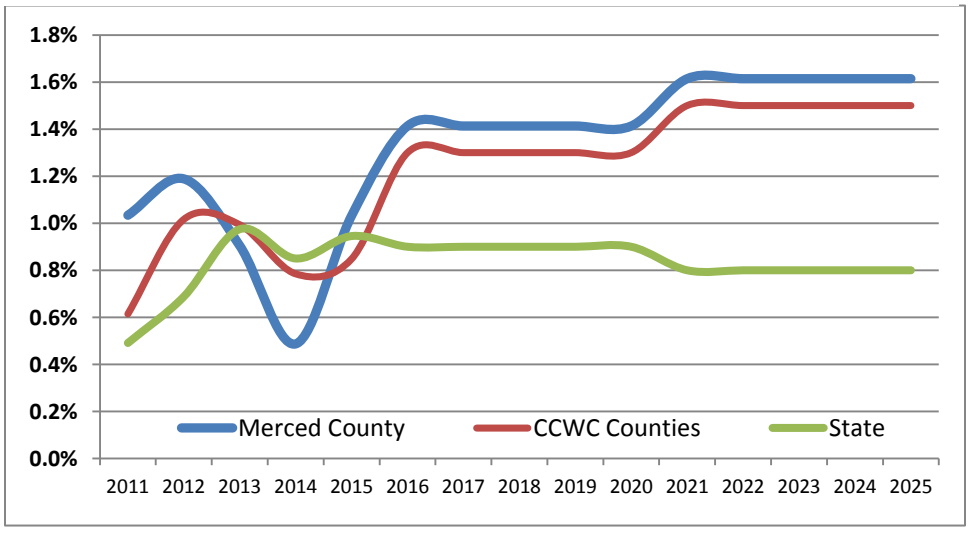
is projected to grow slightly faster than the CCWC region as a whole over the next five years (2015-2020), which will have implications for some employment sectors, as discussed below.

Table 2 – Total and Household Population Trends: Merced County, CCWC Region, and California

Year	Household Population					
	Merced County	Growth Rate	CCWC Counties	Growth Rate	State ('000)	Growth Rate
2010	250,897		3,888,941		36,412	
2011	253,491	1.0%	3,912,829	0.6%	36,591	0.5%
2012	256,504	1.2%	3,952,595	1.0%	36,843	0.7%
2013	258,824	0.9%	3,991,868	1.0%	37,202	1.0%
2014	260,085	0.5%	4,023,198	0.8%	37,518	0.9%
2015	262,770	1.0%	4,057,322	0.8%	37,873	0.9%
10-15	11,873	0.9%	168,381	0.9%	1,461	0.8%

Year	Total Population					
	Merced County	Annual Growth Rates	CCWC Counties	Growth Rate	State ('000)	Growth Rate
2010	255,793		4,004,407		37,254	
2011	258,852	1.2%	4,025,282	0.5%	37,428	0.5%
2012	262,147	1.3%	4,058,833	0.8%	37,681	0.7%
2013	264,502	0.9%	4,094,785	0.9%	38,031	0.9%
2014	266,592	0.8%	4,129,749	0.9%	38,357	0.9%
2015	269,280	1.0%	4,165,560	0.9%	38,715	0.9%
10-15	13,487	1.0%	161,153	0.8%	1,461	0.8%

Figure 1 – Household Population Annual Growth Rates



Before the recession, total jobs in the County peaked at 70,629 in 2007 and reached that level again as early as 2012. The annual average number of jobs in 2015 is estimated at 75,282 (Table 3). Through 2008, total jobs in the County were growing at a 1.1 annual percentage rate.

Table 3– Trends in Total Number of Jobs: 2000-2015: Merced County

Period	Total Employment
08-15 Ann. Growth Rate	1.1%
00-08 Ann.l Growth Rate	1.0%
2015	75,282
2014	74,370
2013	72,432
2012	70,776
2011	68,843
2010	67,995
2009	68,827
2008	69,893
2007	70,629
2006	69,783
2005	68,625
2004	67,700
2003	66,250
2002	66,352
2001	64,170
2000	64,611

Source: Applied Development Economics, based on CA EDD LMID

Farm employment grew at a 5.1 percent annual rate between 2010 and 2015 but is projected to increase at a more tepid rate of 0.9 percent over the next ten years (Table 4). Despite these overall trends, some job growth is projected in farm support (NAICS 115), especially within farm labor contracting (NAICS 115115) (Table 5). A number of factors affect farm employment including availability of water and continued mechanization of farming operations. In addition, employers interviewed for this study indicated that the new state minimum wage law will affect employment opportunities in both farming and food processing and related industries. In addition, current efforts in the State Assembly to limit the agricultural work day are seen as a threat to employment growth.

Manufacturing industries in Merced County are mainly in food processing. Manufacturing jobs increased by more than 1,200 jobs between 2010 and 2015, from 7,988 in 2010 to 9,205 in 2015. While this sector grew by 2.9 percent a year between 2010 and 2015, it is expected to grow at a slower rate of 0.9 percent per year over the ten years. Within manufacturing, food processing (NAICS 311-312) is expected to grow annually by 0.4 percent between 2015 and 2025. Manufacturing industries such as fruit and vegetable canning (NAICS 311421), fluid milk manufacturing (NAICS 311511), and wineries (NAICS 312130) are expected to increase by 150 new jobs respectively between 2015 and 2025 (Table 5).

The construction industry continued to grow coming out of the recession over the past five years, but is projected to decline slightly over the next ten years (Table 4). However, residential construction (NAICS 236116) and water and sewer line construction (NAICS 237110) are expected to grow during this period, which is consistent with expected population growth for the county over the next ten years (Table 5).

Table 4 - Employment Trends and Projections by Sectors: Merced County: 2010, 2015 and 2025 (proj.)

		Employment			Change	Ann. Growth Rate	
		2010	2015	2025 proj.	15-25	10-15	15-25
		70,029	**77,329**	**88,430**	**11,101**	**2.0%**	**1.4%**
11	Agriculture	11,070	14,166	15,453	1,287	5.1%	0.9%
21	Mining	17	3	10	7	-29.3%	13.3%
22	Utilities	369	292	230	-62	-4.5%	-2.4%
23	Construction	1,654	2,014	1,888	-127	4.0%	-0.6%
31-33	Manufacturing	7,988	9,205	9,658	454	2.9%	0.5%
42	Wholesale	2,004	1,894	2,363	469	-1.1%	2.2%
44-45	Retail	7,145	8,056	9,579	1,524	2.4%	1.7%
48	Warehousing	1,540	1,427	1,917	489	-1.5%	3.0%
49	Transportation	559	841	977	136	8.5%	1.5%
51	Information	1,225	271	250	-21	-26.1%	-0.8%
52	Finance and Insurance	1,047	1,064	1,220	156	0.3%	1.4%
53	Real Estate and Leasing	603	526	536	10	-2.7%	0.2%
54	Prof., Scientific, Technical	1,375	1,357	1,772	415	-0.3%	2.7%
55	Mgt.of Companies	773	862	857	-5	2.2%	-0.1%
561	Admin Support	1,384	1,428	1,895	467	0.6%	2.9%
562	Waste Mgt.	106	123	207	84	3.1%	5.3%
61	Education[1]	11,226	12,590	14,318	1,727	2.3%	1.3%
62	Health[2,3]	7,413	8,333	10,953	2,620	2.4%	2.8%
71	Arts, Rec., and Enter.	425	558	711	152	5.6%	2.4%
721	Accommodations	230	303	404	101	5.7%	2.9%
722	Food and Drinking Services	4,366	4,689	5,470	781	1.4%	1.6%
81	Other Services[2]	1,460	1,603	1,586	-18	1.9%	-0.1%
92	Public Admin (excl. Military)	5,543	5,098	5,567	469	-1.7%	0.9%
98	Military	415	418	369	-48	0.1%	-1.2%
99	Misc.	95	207	241	34	16.8%	1.6%

Source: ADE, Inc., based on EMSI Industry Employment trends 2010, 2015, 2025 QCEW and non-QCEW Q4 Data Series. Note 1: Public education moved out of NAICS 92 and placed in NAICS 61. Note 2: Public sector health care moved out of NAICS 92 and placed in NAICS 62. Note 3: NAICS 814110 [Private households] and NAICS 624120 [Service for elderly and others] were adjusted, which are reflected in sector-level employment data for NAICS 62 [Health] and NAICS 81 [Other Services] accordingly. Prior to 2013, persons assisting the elderly were categorized under NAICS 814110 [Private households] – starting in 2013, these jobs were re-categorized under NAICS 624120 [Service for elderly and others].

The Health Services sector is projected to see strong employment growth over the next ten years. This is a consistent finding throughout the San Joaquin Valley as well as nationally and reflects both demographic trends with the aging Baby Boomer population as well as industry trends to institute managed care with more outpatient and home health care. Employment in Health Services is projected to grow to 10,953 in 2025 from 8,333 in 2015, for an annual rate of growth of 2.8 percent (Table 4). In an effort to accurately characterize the state of employment in the sector in Merced County, employment in Health Services includes employed persons in the public sector, who for purposes of analysis were moved out of NAICS 92 (Public Administration) and into NAICS 62 (Health Services). Another population based trend is the increase in retail and food services jobs. Both these sectors have been recovering from the recession over the past five years, and are projected to see more moderate growth over the next ten years.

Table 5 provides more detail on projected fast growing industries in Merced County.

Table 5 — Employment Projections for Industries Expected to grow by 50 or more Jobs between 2015 and 2025: Merced County

NAICS	Industry	2015	2015 proj.	Change	Ann.Per. Chg.	RANK
		29,724	**40,293**	**10,569**	**2.2%**	
115113	Crop Harvesting, Primarily by Machine	475	632	157	2.9%	22
115115	Farm Labor Contractors and Crew Leaders	3,912	5,271	1,359	3.0%	2
	11 Agric.	4,386	5,903	1,516	3.0%	
236116	New Multifamily Housing Construction (except For-Sale Builders)	53	106	53	7.1%	54
237110	Water and Sewer Line and Related Structures Construction	242	361	119	4.1%	30
	23 Const.	295	467	171	4.7%	
311421	Fruit and Vegetable Canning	1,233	1,387	155	1.2%	25
311511	Fluid Milk Manufacturing	417	616	198	4.0%	13
311513	Cheese Manufacturing	811	880	69	0.8%	48
312130	Wineries	414	580	166	3.4%	17
325314	Fertilizer (Mixing Only) Manufacturing	90	157	68	5.8%	50
326111	Plastics Bag and Pouch Manufacturing	83	181	98	8.1%	33
327320	Ready-Mix Concrete Manufacturing	206	300	94	3.8%	36
332311	Prefabricated Metal Building and Component Manufacturing	165	288	122	5.7%	28
332323	Ornamental and Architectural Metal Work Manufacturing	78	149	71	6.7%	44
333111	Farm Machinery and Equipment Manufacturing	184	251	68	3.2%	47
	31-33 Man.	3,680	4,788	1,108	2.7%	
424410	General Line Grocery Merchant Wholesalers	425	508	83	1.8%	42
424480	Fresh Fruit and Vegetable Merchant Wholesalers	476	662	187	3.4%	14
424910	Farm Supplies Merchant Wholesalers	198	277	80	3.5%	43
	42 Wholesale	1,098	1,448	349	2.8%	
443142	Electronics Stores	199	301	102	4.2%	32

NAICS	Industry	2015	2015 proj.	Change	Ann.Per. Chg.	RANK
446110	Pharmacies and Drug Stores	386	500	115	2.6%	29
447190	Other Gasoline Stations	329	390	61	1.7%	53
448140	Family Clothing Stores	226	384	159	5.5%	19
452112	Discount Department Stores	1,244	1,880	636	4.2%	5
452910	Warehouse Clubs and Supercenters	644	990	346	4.4%	8
452990	All Other General Merchandise Stores	351	506	156	3.7%	20
	44-45 Retail	3,378	4,952	1,575	3.9%	
484110	General Freight Trucking, Local	319	463	144	3.8%	24
484220	Specialized Freight (except Used Goods) Trucking, Local	614	858	243	3.4%	10
485113	Bus and Other Motor Vehicle Transit Systems	48	99	51	7.5%	57
485410	School and Employee Bus Transportation	212	288	77	3.1%	40
	48 Trans.	1,192	1,707	515	3.7%	
493110	General Warehousing and Storage	503	666	163	2.9%	18
	49 Warehousing	503	666	163	2.9%	
522130	Credit Unions	222	313	90	3.5%	35
	52 Fin. And Insr.	222	313	90	3.5%	
531311	Residential Property Managers	113	174	61	4.4%	51
	53 R.E. and Leasing	113	174	61	4.4%	
541380	Testing Laboratories	83	151	67	6.1%	45
541690	Other Scientific and Technical Consulting Services	176	322	146	6.2%	23
541720	Research and Development in the Social Sciences and Humanities	334	491	157	3.9%	21
	54 Prof.,Sci., Tech.	593	964	370	5.0%	
561311	Employment Placement Agencies	332	509	177	4.4%	16
561421	Telephone Answering Services	71	140	68	7.0%	55
561422	Telemarketing Bureaus and Other Contact Centers	123	346	223	10.9%	11
	56 Admin,Support,Waste	526	994	468	6.6%	
621111	Offices of Physicians (except Mental Health Specialists)	1,172	1,378	206	1.6%	12
621340	Offices of Physical, Occupational and Speech Therapists, and Audiologists	153	220	67	3.7%	46
621492	Kidney Dialysis Centers	142	223	81	4.6%	37
621498	All Other Outpatient Care Centers	170	293	123	5.6%	27
621910	Ambulance Services	159	219	59	3.2%	52
623110	Nursing Care Facilities (Skilled Nursing Facilities)	831	1,094	264	2.8%	9
623220	Residential Mental Health and Substance Abuse Facilities	304	433	130	3.6%	26
623311	Continuing Care Retirement Communities	133	215	81	4.9%	38
623990	Other Residential Care Facilities	282	453	172	4.9%	15
624110	Child and Youth Services	75	126	51	5.4%	56
624120	Services for the Elderly and Persons with Disabilities	2,107	3,576	1,469	5.4%	1
	62 Health	5,527	8,231	2,703	4.1%	

NAICS	Industry	2015	2015 proj.	Change	Ann.Per. Chg.	RANK
713990	All Other Amusement and Recreation Industries	105	169	64	4.9%	49
	71 Arts, Enter., Rec.	105	169	64	4.9%	
721110	Hotels (except Casino Hotels) and Motels	294	386	92	2.8%	34
722513	Limited-Service Restaurants	2,851	3,567	716	2.3%	4
722515	Snack and Nonalcoholic Beverage Bars	377	455	78	1.9%	39
	72 Accomodations and Food	3,522	4,408	886	2.3%	
902999	State Government, Excluding Education and Hospitals	472	576	104	2.0%	6
903999	Local Government, Excluding Education and Hospitals	4,109	4,533	424	1.0%	31
	90 Public	**4,582**	**5,110**	**528**	**1.1%**	**3**

INDUSTRY CLUSTERS

The San Joaquin Valley has defined a number of regional industry clusters that are significant components of the regional economic base, which are listed in Table 6 below. Industry clusters represent traded sectors in the regional economy and typically are the source of most of the income and wealth for the region as well as the areas where innovation occurs most frequently. In Merced County, Agriculture and Health Care are the two largest industry clusters. For this study, we have also included the retail sector and the accommodations and food services sector to reflect job opportunities in the local-serving and tourism industries.

The Agriculture cluster includes not only farm production, but also food processing, related distribution and logistics, and a variety of agricultural services that include fertilizers, irrigation, soil testing, veterinary services, and marketing among others (Detailed cluster and sub-cluster employment data are in the Appendix at "Detailed Industry Cluster Employment Projections"). This cluster cuts across several of the major industry groups shown in Table 4 above. In addition, several agricultural support industries closely related to field operations are also projected to reduce jobs, as shown in Table 7 below. However, within the broader Agricultural cluster, several food processing industries are projected to increase employment, including fruit and vegetable canning, fluid milk manufacturing, and wineries. In addition, the agriculture related distribution (logistics) sector is projected to add about 1,000 jobs over the next ten years.

The Health and Wellness cluster is projected to add almost 2,800 jobs by 2025 (Table 6). About 53 percent of the new jobs in this cluster are projected for services to elderly and disabled persons. Some of the new jobs will occur in hospital settings but many will be in outpatient facilities and various types of nursing and residential care facilities. (see Appendix Table A-6 and A-7 for detail on industries with lower job projections).

Table 6 — Employment Projections by Industry Clusters: Merced County: 2015 - 2025

	Employment		Change	
	2015	2025 proj.	15-25	Ann.Per. Chg.
	56,391	**65,869**	**9,478**	**1.6%**
Energy	2,597	2,926	330	1.2%
Manufacturing	1,759	1,820	61	0.3%
Health and Wellness	9,124	11,902	2,778	2.7%
Agriculture	28,776	31,919	3,143	1.0%
Water Flow Technology	391	532	140	3.1%
Logistics	2,226	2,768	541	2.2%
Retail	8,056	9,579	1,524	1.7%
Accommodations and Food Services	3,154	3,970	816	2.3%
Heavy Construction	308	453	144	3.9%

Source: Applied Development Economics, based on EMSI Q4 2015 QCEW and Non-QCEW. Note: Energy Cluster excludes employment data for NAICS 541 (Professional, Scientific and Technical), Health and Wellness Cluster excludes employment data for NAICS 9012(Military); Manufacturing Cluster is only for "manufacturing – other" industries (i.e., not included in other clusters such as Agriculture).

In addition to tracking growing industries, our analysis also identifies industries that expected to decline. Below are industries within various clusters expected to decline by 50 or more workers between 2015 and 2025. While food processing generally exhibits strong growth over the next ten years, there are several food processing industries within the Ag Cluster that expected to decline, such as Poultry processing (NAICS 311615) and Dried and dehydrated food manufacturing (NAICS 311423). Jobs in the Ag Cluster industry of Animal production (NAICS 112000) are also expected to drop significantly. These same industries are projected to grow in other countries of the San Joaquin Valley, so these job losses may reflect shifts in production location if they occur at all.

PROJECTED JOB OPENINGS

Labor force demand is not only affected by new jobs growth but also by changes in the labor force. As discussed in the next chapter, as the Baby Boomer generation ages out of the labor force, there will be an increasing need for replacement workers. In addition, job turnover occurs for a number of other reasons. As shown in Table 8, nearly 26,300 openings are projected between 2015 and 2025, of which approximately 11,100 would be due to new job growth.

Table 7 — Industries within Various Clusters that are Expected to Decline Significantly Between 2015 and 2025: Merced County

			Employment		Change	Ann. Growth Rate
Cluster	NAICS	Industry	2015	2025 proj.	15-25	
Ag and Food -- Processing	311422	Specialty Canning	55	0	-55	-100%
Ag and Food -- Processing	311911	Roasted Nuts and Peanut Butter Manufacturing	196	128	-68	-4%
Ag and Food -- Processing	311615	Poultry Processing	2209	2111	-98	-0.5%
Ag and Food -- Processing	311423	Dried and Dehydrated Food Manufacturing	195	21	-174	-20%
Ag and Food -- Production	111000	Crop Production	5112	5048	-64	0%
Ag and Food -- Production	112000	Animal Production and Aquaculture	3261	3100	-161	-1%
Energy Cluster and Sub-Clusters	221210	Natural Gas Distribution	142	77	-65	-6%
Energy Cluster and Sub-Clusters	238310	Drywall and Insulation Contractors	77	6	-71	-23%
Health and Wellness -- Health Care - Delivery	623312	Assisted Living Facilities for the Elderly	108	21	-87	-15%
Health and Wellness -- Health Care - Delivery	622110	General Medical and Surgical Hospitals	1288	1190	-97	-1%
Logistics --	336612	Boat Building	173	3	-170	-33%
Manufacturing -- Other	323111	Commercial Printing (except Screen and Books)	629	357	-272	-5%

The Agricultural cluster will see a large number of these job openings in occupations related to transportation, production, installation, maintenance, repair, and farming. The retail and food services sectors are also expected to see a high rate of job availability. For the Health and Wellness cluster, direct health care occupations reflect only a portion of the labor force demand. Health practitioners and support, including personal care services, represent about 1,300 total opening over the ten years to 2025.[1] Other occupational categories will also be needed by this industry, including community and social services, office and administrative support, business and financial operations and management.

Based on our analysis of the labor force in Merced County, ADE has estimated the numbers of unemployed and part time employed workers who meet the minimum educational requirements for the projected job openings (Table 8). We include part time employed workers as an expression of the potentially under-employed workforce in the County, although some workers seek part time work out of choice.

[1] 1,300 = (68 annual openings$_{\text{31 Healthcare Support}}$ + 63 annual openings$_{\text{29 Healthcare Practitioners and Technical}}$) * 10 years

Table 8 — Annual Opening to Number of Unemployed and Part-Time Workers Who Satisfy Minimum Educational Requirements by Occupation (Persons 25 and Over): Merced County

Occupation	Annual Openings	Unemployed Whose Credentials Match Occupational Requirement	Part-Time Labor Force Whose Credentials Match Occupational Requirement
Total	**2,634**	**5,333**	**9,345**
53 Transportation and Material Moving	237	1,042	1,553
51 Production	157	628	203
49 Installation, Maintenance, and Repair	75	56	70
47 Construction and Extraction	28	477	523
45 Farming, Fishing, and Forestry	453	1,281	486
43 Office and Administrative Support	314	480	1,407
41 Sales and Related	347	269	550
39 Personal Care and Service	91	129	444
37 Building and Grounds Cleaning and Maintenance	49	317	628
35 Food Preparation and Serving Related	325	278	1,031
33 Protective Service	45	0	0
31 Healthcare Support	68	66	165
29 Healthcare Practitioners and Technical	63	19	309
27 Arts, Design, Entertainment, Sports, and Media	0	0	0
25 Education, Training, and Library	239	128	1,680
23 Legal	0	0	0
21 Community and Social Services	30	83	62
19 Life, Physical, and Social Science	13	19	0
17 Architecture and Engineering	0	0	0
15 Computer and Mathematical	0	0	0
13 Business and Financial Operations	27	22	74
11 Management	72	40	159

LABOR FORCE CHARACTERISTICS

The analysis of labor force characteristics includes details about the following groups:[2]

- Race and Ethnicity: White, Latino, Other
- Gender
- Veteran Status
- Disability Status
- Citizenship

The characteristics include:

- Age
- Educational Attainment
- Employment status: full time, part time, unemployed
- Occupation

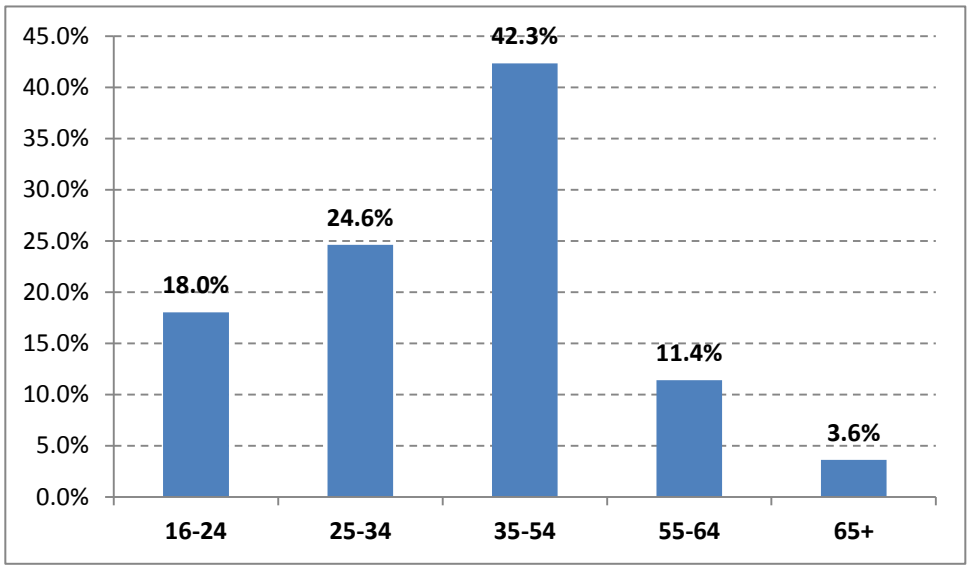
The discussion is organized around a number of graphical charts that summarize the information; however, Tables 9-24 at the end of the Chapter provide more detail for these groups and demographic characteristics.

AGE DEMOGRAPHICS

The labor force in Merced County is generally concentrated in the younger age groups, with 18 percent in the 16-24 age group, nearly 25 percent of the 25-34 age group (Figure 2). The prime working age group of 35-54 has 42 percent of the workforce, which is less concentrated on a year to year basis than the younger age groups. Workers over 55 constitute about 15 percent of the workforce and a number of employers report that impending retirements are a significant issue for them in terms of anticipated openings in the future.

[2] The analysis of labor force characteristics is based on census data for the 2012 to 2014 period, reflecting a three year average.

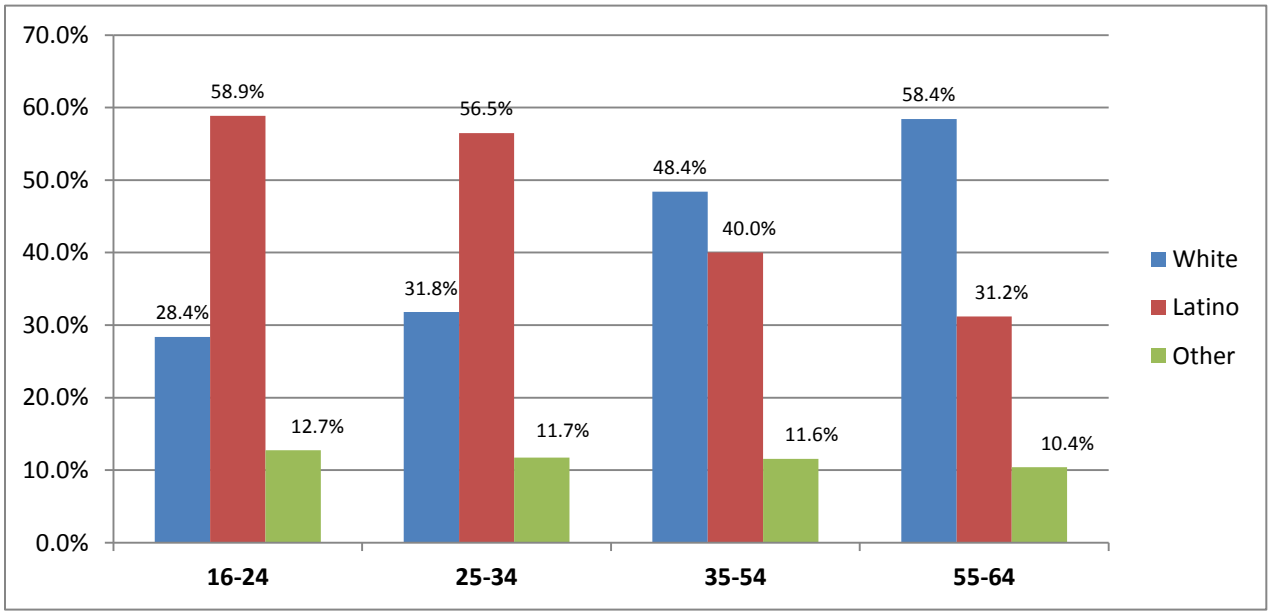
Figure 2 – Labor Force Age Distribution (Persons 16 and Over)



Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

As shown in Figure 3, younger age groups tend to have a higher proportion of Latino workers while older age groups have higher percentages of white workers. Of the labor force between 16 and 24, almost 59 percent are Latino, while slightly over 28 percent White. Similarly for the 25-34 age cohort, 57 percent are Latino and 32 percent are White. At 48 percent of the 35 to 54 workforce, White comprise the largest segment of prime working-age adults in the labor force, though Latinos are close behind at 40 percent.

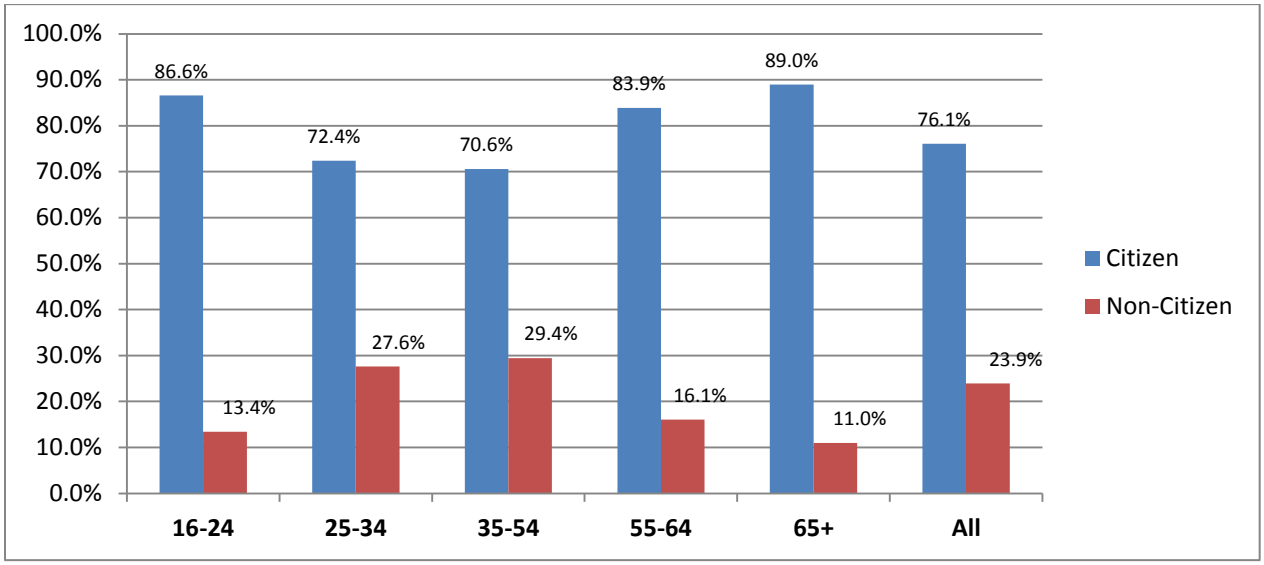
Figure 3 – Age Distribution by Race/Ethnicity (Persons 16 and Over)



Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Non-citizen workers constitute 23.9 percent of the workforce in Merced County, though the rate varies with age (Figure 4). At 27.6 percent of the millennial labor force (25-34) and 29.4 percent of the prime working age (35 to 54) labor force, non-citizens are more concentrated in these two sub-populations relative to their overall concentration level, i.e. 23.9 percent. In contrast, non-citizens comprise only 13.4 percent of the labor force between 16 and 24.

Figure 4 – Labor Force By Age and By Citizenship Status (16 and over)



Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

UNEMPLOYMENT

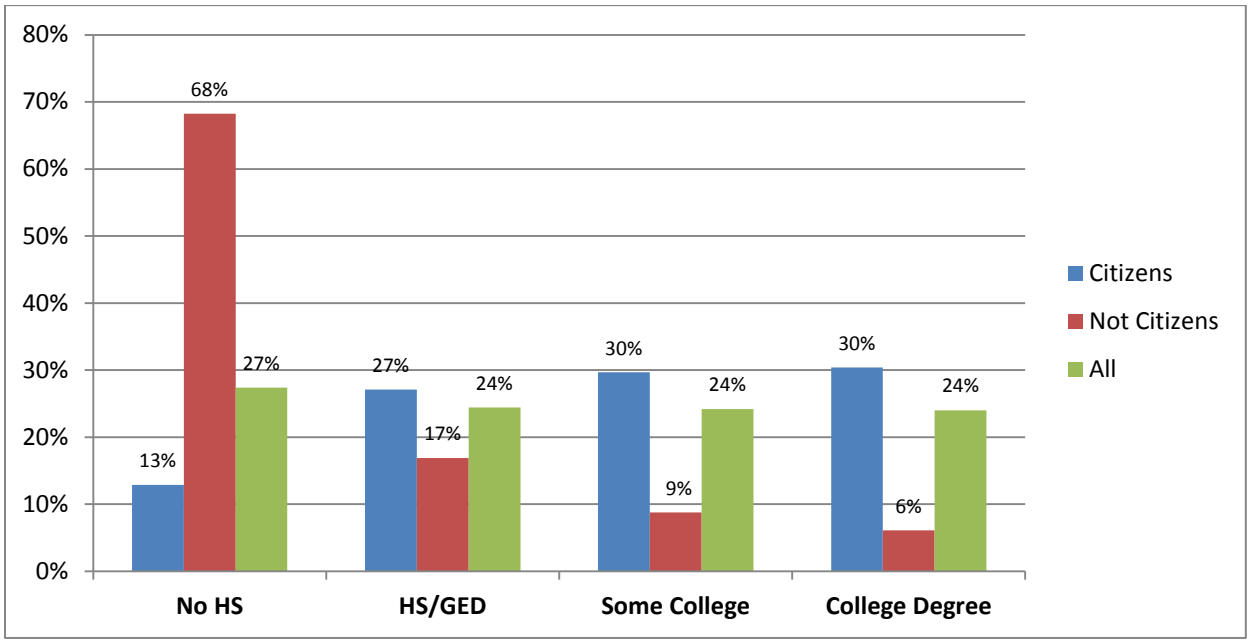
In Merced County, almost 56 percent of the labor force is Latino, at 63,970 persons out of a labor force of 114,650 (see Table 9 at the end of the Chapter). Thirty-two percent is White. Unemployment for Latino workers is 19.2 percent compared to 11.4 percent for Whites. However, unemployment is 21.8 percent for workers in other racial and ethnic groups. Unemployment affects workers with no college degree much more, at 14.9 percent, than those with a college degree (7.5 percent). Veterans' unemployment level is at 8.7 percent. Disabled workers have relatively high unemployment, at nearly 23.9 percent.

EDUCATIONAL ATTAINMENT

The Merced County workforce exhibits comparable educational attainment to the rest of the San Joaquin Valley region. Among US citizens in the workforce, only 13 percent do not have a high school diploma or GED and 60 percent have some college experience or an AA degree or higher. However, it is important to recognize that many non-citizens have not had the same educational opportunities in their home countries and many have not achieved the equivalent of a high school diploma. As shown in Figure 5, 68 percent of the non-citizens 25 and over in the labor force have not obtained a high school diploma or a GED. Seventeen-percent of non-citizens in the labor force have earned a high school diploma or equivalent, although this rate is almost ten percentage points lower than the rate for citizens (i.e. 27 percent). This accounts in part for the differences in educational attainment

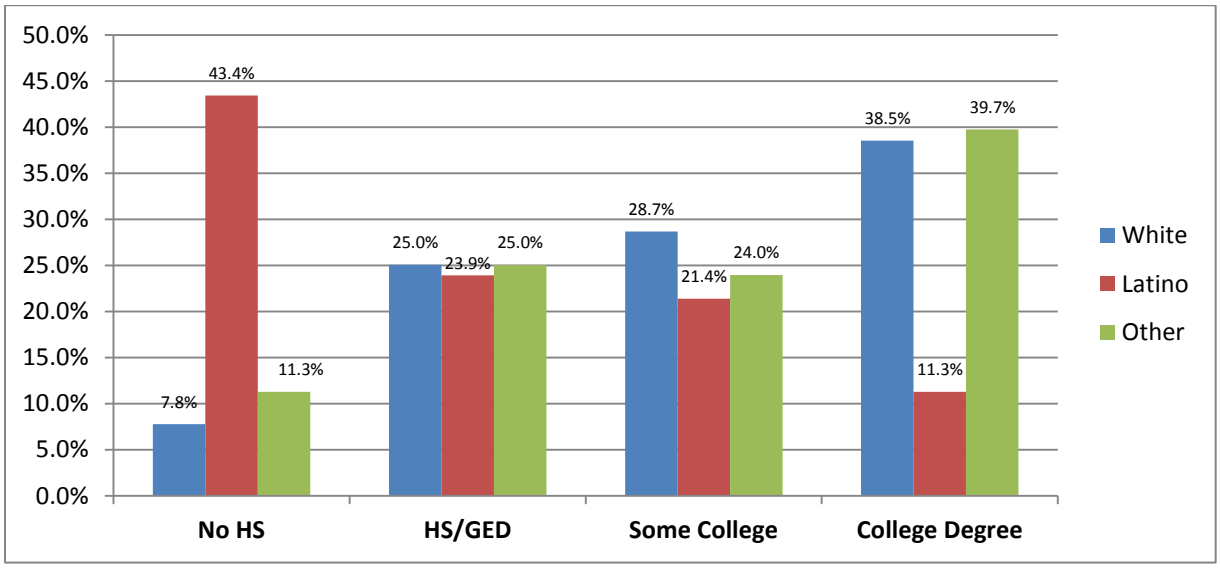
between Latino workers and other workers in the labor force (Figure 6), as the non-citizen group is 86 percent Latino. It is also important to note that Latinos have earned high school diplomas and GEDs at rates similar to all other races, at 23.9 percent versus 25.0 percent. However, those of other races are over three times more likely than Latinos to have earned a college degree: 11.3 percent of the Latinos in the labor force have earned a college degree versus 39 percent for Whites and Others (Figure 6).

Figure 5 – Labor Force Educational Attainment by Citizenship Status (25 and over)



Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

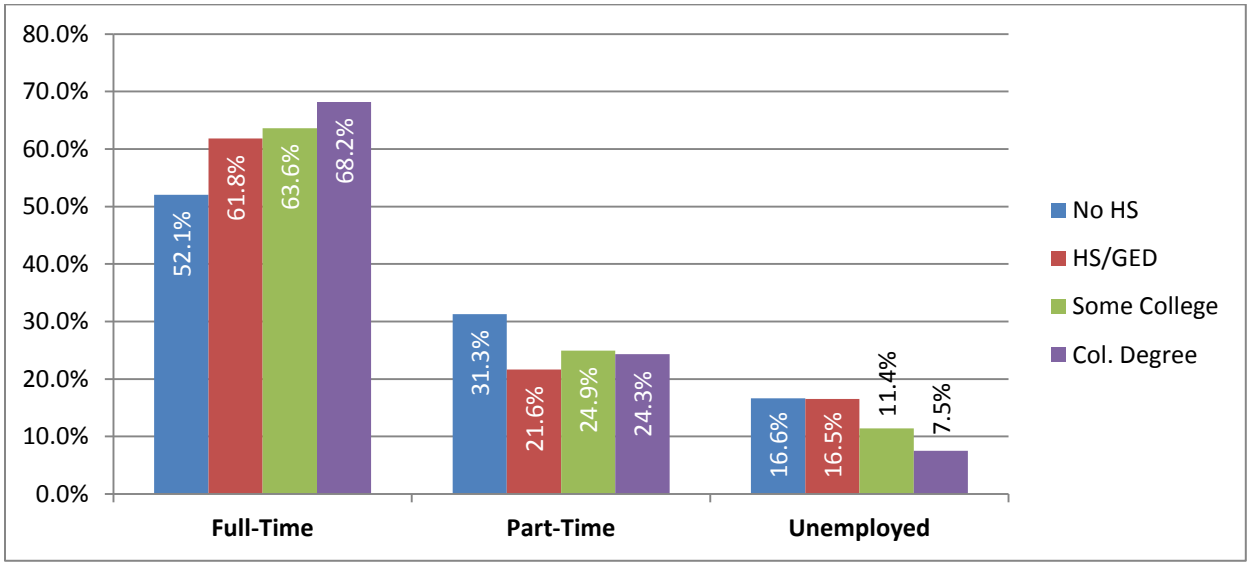
Figure 6 – Educational Attainment by Race/Ethnicity



Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Educational attainment also affects employment status. Persons with no high school diploma exhibit rates of unemployment that more than double unemployment levels for persons with a college degree, or 16.6 percent versus 7.5 percent. Of the persons with a college degree, over 68 percent work full-time, resulting in a full-time employment rate that is 16 percentage points greater than the rate for persons without a high school diploma (i.e. 68.2 percent versus 52.1 percent).

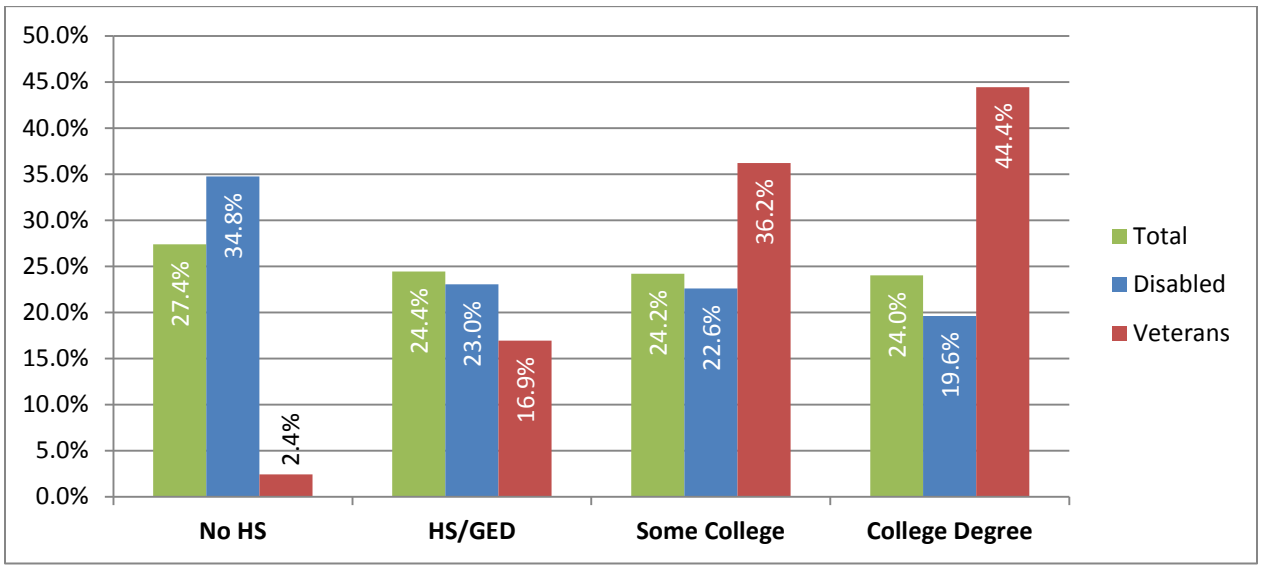
Figure 7 – Employment Status By Educational Attainment



Source: ADE, Inc. based on US Census ACS PUMS 2012-2014 from iPUMS

Veterans in Merced County tend to have high levels of overall educational attainment, with slightly over two percent not achieving a high school diploma (Figure 8). For the workforce as a whole, 27.4 percent do not have a high school diploma or equivalent degree. Among disabled workers, however, nearly 35 percent do not have a high school diploma.

Figure 8 – Educational Attainment for Disabled Workers and Veterans

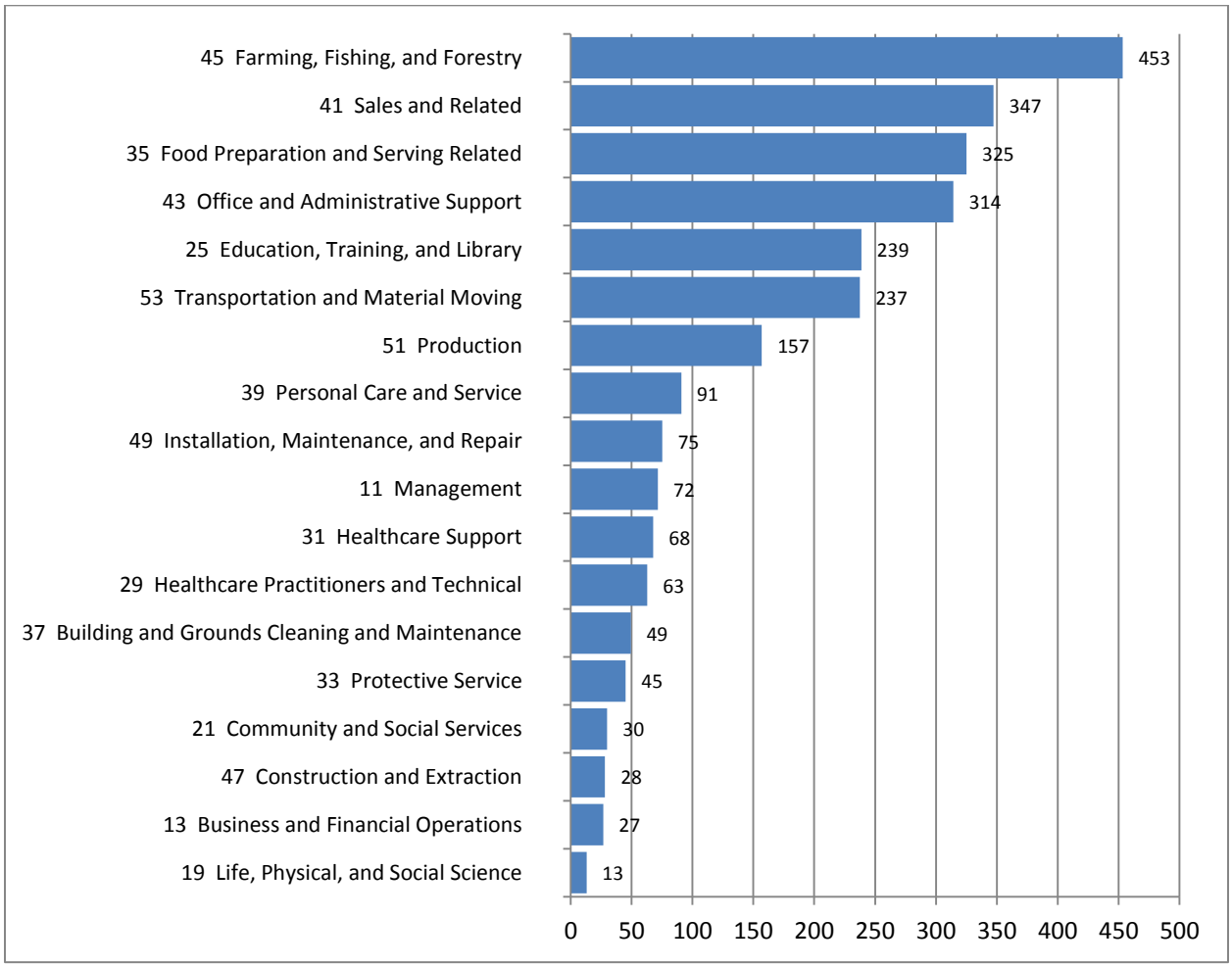


Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

UNDERUTILIZED WORKFORCE

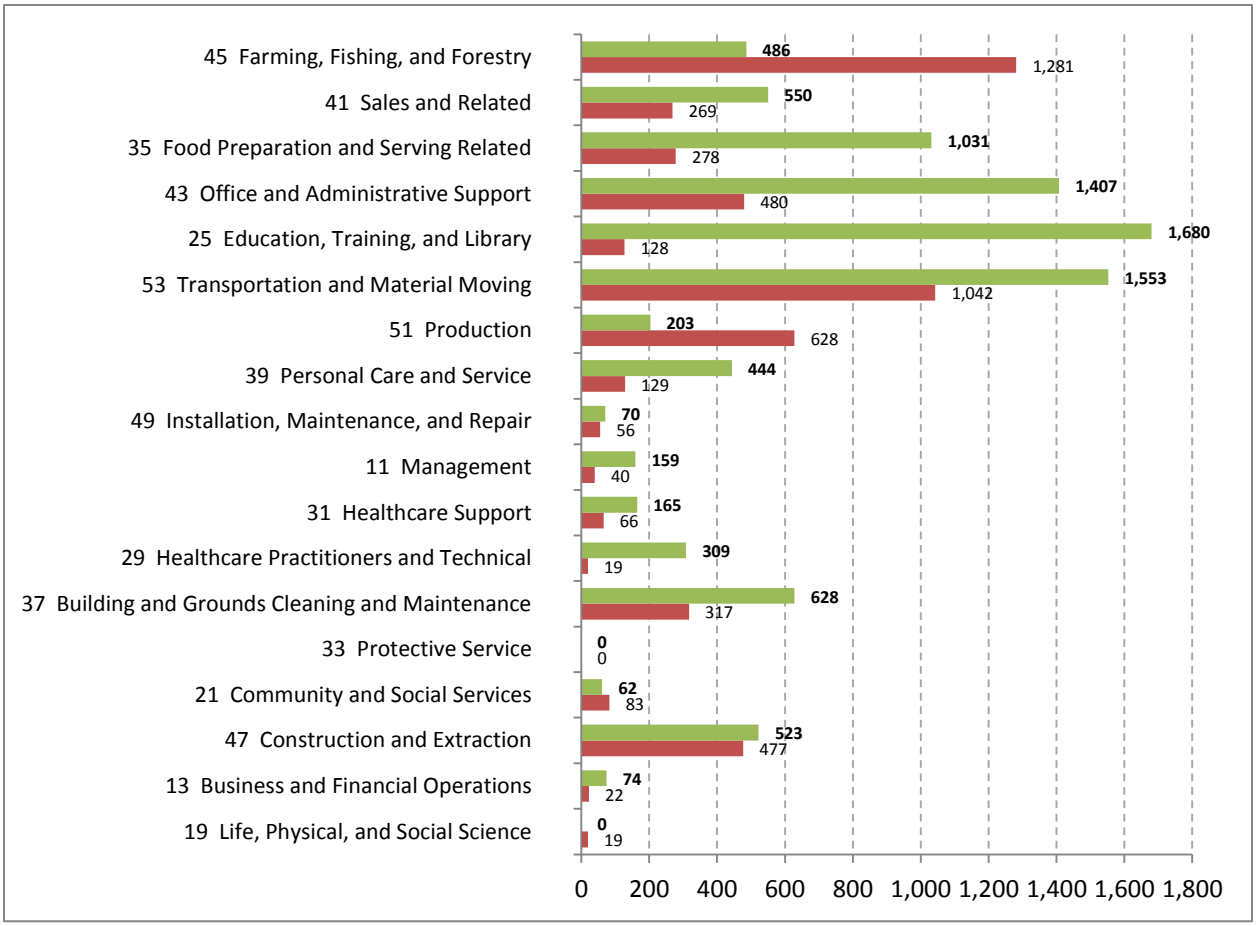
The report provides a focus on part time and unemployment workers in terms of how their educational attainment and prior occupational background matches projected annual job openings. This part of the analysis addresses the underutilized segments of the Merced County workforce. Figure 9 reproduces the major categories of job openings listed earlier in Table 8. The largest numbers of openings are in lower skilled occupations such as farming, food service, sales and administrative office occupations. However, significant number so openings are also projected in education, production, and installation and maintenance mechanics, which followed closely by management and healthcare positions. Comparing these categories to the availability of currently unemployed and part time workers in Figure 10, there are substantial numbers of workers who would seemingly be available to fill these positions. However, they may need training to help upgrade their sill sets or they may need other services to help them be available for full time employment.

Figure 9 – Annual Openings By Major Occupational Groups



Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Figure 10 - Number of Unemployed and Part-Time Labor Force by Major Occupational Group

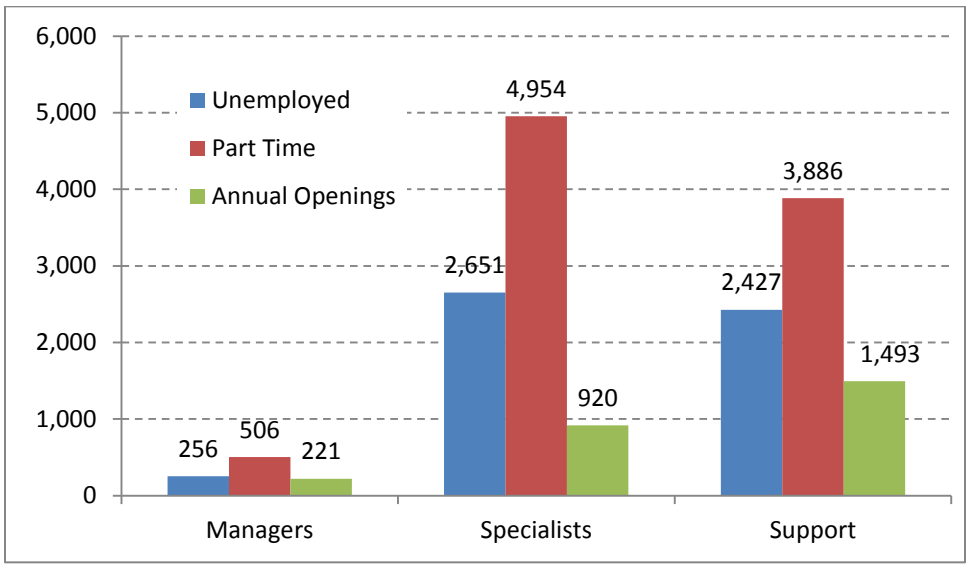


Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Figure 11 groups job openings by three main categories of occupational level: managers and supervisory personnel; workers with specialty or higher level skills; and support positions that are more entry level or have a lower required skill set.[3] At this level, the unemployed and part time workforce exceeds the available openings (shown in green) for each category, reinforcing the notion that retraining and skills transfer may help improve the availability of workers for positions in demand by employers.

[3]In Figure 11, we match unemployed and part-time workers by their respective occupations with openings positions whose 6-digit occupational code corresponds to the unemployed and part-time workers. Moreover, we further narrow the available labor force by matching persons whose educational attainment levels are commensurate with minimum educational level required for each opening position.

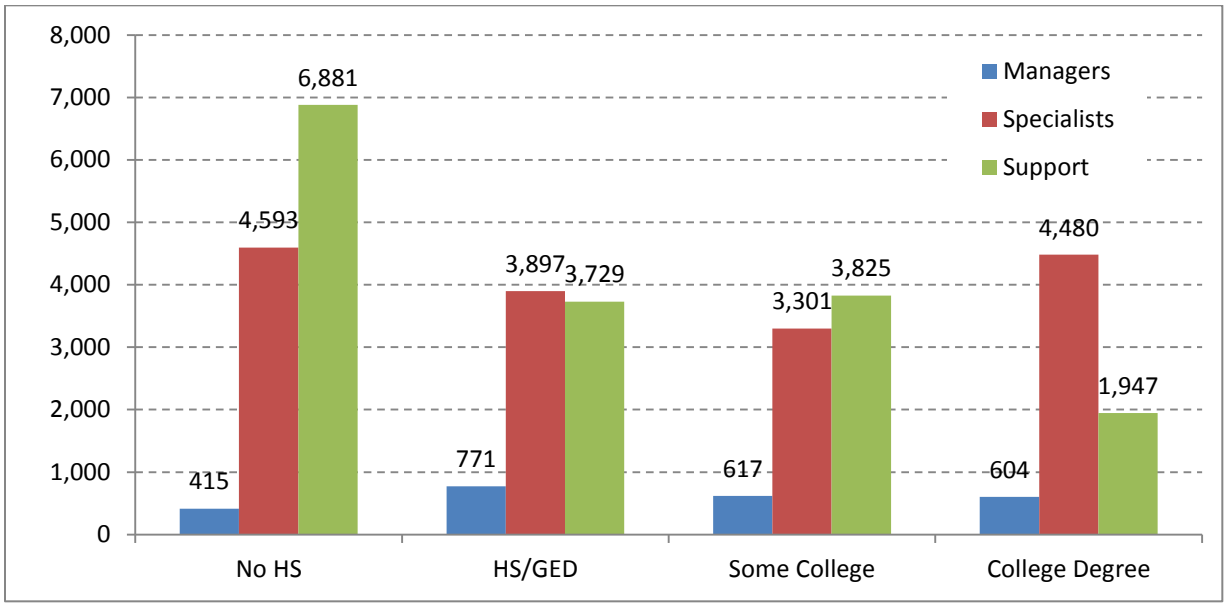
Figure 11 – Part Time and Unemployment Workers By Occupational Class Compared To Annual Openings (Persons 25 and Over): Only Persons Whose Educational Attainment Commensurate With Opening Position: Merced County



Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Figure 12 shows the educational level for the unemployed and part time workforce, categorized by occupational background. This figure tracks all unemployed and part-time workers, not just those who minimally qualify for the annually open positions. There are relatively few managers who have not achieved a high school diploma and the greatest number do have a high school diploma (771), followed closely by those with some college education (617) and with a college degree (604). Among mid-level workers with some special skills, most have either a high school diploma (3,897) or a college degree (4,480). Almost 2,000 workers who most recently worked in support positions also have a college degree.

Figure 12 – Part Time and Unemployed Workers By Educational Attainment and Occupational Class (Persons 25 and Over): Merced County



Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

The following tables provide more detail for the population and labor force for the groups described in this chapter.

Table 9 —Summary of Overall Labor Force Trends For Select Demographic Categories Merced County

	Labor Force Trends By Race and Ethnicity (Persons 16 and Over)	Labor Force Trends By Gender (Persons 16 and Over)	Labor Force Trends By Citizenship Status (Persons 16 and Over)	Labor Force Trends By Educational Attainment (Persons 25 and Over)	Labor Force Trends By Veteran Status (Persons 16 and Over)	Labor Force Trends By Disability Status (Persons 16 and Over)
	White	***Women***	***Citizens***	***Persons with College Degree***	***Veterans***	***Persons with at least One Disability***
Labor Force	36,631	49,485	87,247	22,565	4,951	13,352
Unemployed	4,171	8,627	14,689	1,700	430	3,187
Unemployment Rate	11.4%	17.4%	16.8%	7.5%	8.7%	23.9%
	Latino	***Men***	***Not Citizens***	***Persons with No College Degree***	***Not Veterans***	***Persons with No Reported Disability***
Labor Force	63,970	65,165	27,403	71,425	109,424	101,298
Unemployed	12,283	10,887	4,824	10,678	18,906	16,326
Unemployment Rate	19.2%	16.7%	17.6%	14.9%	17.3%	16.1%
	Other					
Labor Force	14,049					
Unemployed	3,060					
Unemployment Rate	21.8%					
	Total	**Total**	**Total**	**Total**	**Total**	**Total**
Labor Force	114,650	114,650	114,650	93,991	114,650	114,650
Unemployed	19,513	19,513	19,513	12,378	19,513	19,513
Unemployment Rate	17.0%	17.0%	17.0%	13.2%	17.0%	17.0%

Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Table 10 — Population By Age, Race\Ethnicity, and Educational Attainment Merced County

	0-15	16-19	20-24	25-29	30-34	35-54	55-64	65+	Total
Total	**71,334**	**18,773**	**21,597**	**18,483**	**17,871**	**63,944**	**24,992**	**27,169**	**264,162**
White	**13,232**	**3,956**	**4,816**	**4,693**	**4,678**	**20,407**	**11,961**	**15,300**	**79,043**
Did not earn HSD\GED	10,899	2,160	438	277	487	2,145	1,597	2,636	**20,640**
HSD\GED		861	1,418	1,440	669	6,051	3,356	4,857	**18,651**
Some college -- not attending		8	890	979	1,338	5,821	3,220	3,797	**16,053**
Some college -- attending		926	1,747	383	376	353	31	45	**3,862**
AA			104	208	739	1,790	1,444	1,004	**5,288**
BA+			220	1,406	1,068	4,247	2,314	2,962	**12,217**
NA	2,332								**2,332**
Latino	**49,390**	**11,468**	**13,583**	**11,517**	**10,657**	**35,280**	**9,759**	**8,226**	**149,879**
Did not earn HSD\GED	40,631	6,858	1,380	3,293	4,754	18,277	5,715	5,234	**86,143**
HSD\GED		1,392	4,073	4,145	2,333	7,451	1,557	1,221	**22,172**
Some college -- not attending		353	2,653	2,343	1,691	6,082	1,475	1,200	**15,798**
Some college -- attending		2,865	4,311	529	827	185	38		**8,755**
AA			696	549	357	1,577	505	394	**4,078**
BA+			469	658	694	1,708	468	178	**4,176**
NA	8,759								**8,759**
Other	**8,713**	**3,349**	**3,198**	**2,273**	**2,536**	**8,257**	**3,272**	**3,643**	**35,240**
Did not earn HSD\GED	7,567	1,358	326	147	244	1,352	680	1,415	**13,089**
HSD\GED		568	760	627	869	2,048	925	664	**6,460**
Some college -- not attending		176	366	248	444	2,172	571	631	**4,608**
Some college -- attending		1,128	1,462	103	98	201	17	14	**3,023**
AA		119	134	176	349	718	522	264	**2,281**
BA+			151	971	532	1,766	557	656	**4,632**
NA	1,146								**1,146**

Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS (Note: "NA" refers to infants not yet enrolled in school or pre-school)

Table 11 — Labor Force by Age, Race\Ethnicity, and Educational Attainment (Persons 16 and Over): Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Labor Force (25+)	Total Labor Force
Total	**5,293**	**15,366**	**14,183**	**14,046**	**48,530**	**13,077**	**4,154**	**93,991**	**114,650**
White	**1,244**	**3,191**	**3,993**	**4,017**	**15,427**	**6,332**	**2,427**	**32,196**	**36,631**
Did not earn HSD\GED	NA	NA	121	426	1,145	685	124	**2,502**	NA
HSD\GED	NA	NA	1,053	545	4,341	1,603	521	**8,063**	NA
Some college -- not attending	NA	NA	884	1,046	4,267	1,588	538	**8,323**	NA
Some college -- attending	NA	NA	365	329	181	31	0	**906**	NA
AA	NA	NA	174	645	1,481	811	332	**3,443**	NA
BA+	NA	NA	1,397	1,025	4,012	1,613	912	**8,959**	NA
Latino	**3,035**	**10,367**	**8,329**	**8,291**	**27,418**	**5,234**	**1,295**	**50,567**	**63,970**
Did not earn HSD\GED	NA	NA	2,030	3,493	12,871	2,790	779	**21,964**	NA
HSD\GED	NA	NA	2,851	1,938	6,169	896	232	**12,086**	NA
Some college -- not attending	NA	NA	2,043	1,290	5,292	807	146	**9,578**	NA
Some college -- attending	NA	NA	478	608	153	0	0	**1,239**	NA
AA	NA	NA	269	268	1,353	322	109	**2,321**	NA
BA+	NA	NA	658	694	1,581	418	29	**3,380**	NA
Other	**1,014**	**1,808**	**1,860**	**1,738**	**5,685**	**1,512**	**432**	**11,227**	**14,049**
Did not earn HSD\GED	NA	NA	83	45	706	204	227	**1,265**	NA
HSD\GED	NA	NA	515	383	1,343	537	32	**2,810**	NA
Some college -- not attending	NA	NA	135	368	1,459	279	46	**2,287**	NA
Some college -- attending	NA	NA	103	98	201	0	0	**402**	NA
AA	NA	NA	150	349	504	163	32	**1,197**	NA
BA+	NA	NA	874	494	1,472	329	95	**3,265**	NA

Source: ADE, Inc. based on US Census ACS PUMS 2012-2014 from iPUMS

Table 12 — Part-Time Employed Labor Force by Age, Race\Ethnicity, and Educational Attainment (Persons 16 and Over): Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Labor Force (25+)	Total Labor Force
Total	**2,405**	**6,866**	**3,256**	**2,996**	**12,463**	**3,257**	**1,685**	**24,175**	**33,446**
White	**565**	**1,766**	**876**	**1,007**	**3,241**	**1,417**	**1,074**	**7,616**	**9,947**
Did not earn HSD\GED	NA	NA	0	0	242	157	71	**470**	NA
HSD\GED	NA	NA	117	81	705	456	291	**1,650**	NA
Some college -- not attending	NA	NA	257	321	888	221	214	**1,902**	NA
Some college -- attending	NA	NA	98	220	137	0	0	**455**	NA
AA	NA	NA	120	47	309	141	128	**744**	NA
BA+	NA	NA	284	338	960	442	370	**2,394**	NA
Latino	**1,460**	**4,344**	**2,380**	**1,678**	**7,771**	**1,344**	**413**	**13,586**	**19,390**
Did not earn HSD\GED	NA	NA	509	869	4,727	901	139	**7,144**	NA
HSD\GED	NA	NA	650	302	1,300	261	107	**2,620**	NA
Some college -- not attending	NA	NA	634	261	1,161	87	66	**2,210**	NA
Some college -- attending	NA	NA	209	100	98	0	0	**407**	NA
AA	NA	NA	67	43	210	38	101	**458**	NA
BA+	NA	NA	310	104	275	56	0	**745**	NA
Other	**380**	**756**	**0**	**311**	**1,451**	**496**	**198**	**2,973**	**4,109**
Did not earn HSD\GED	NA	NA	0	0	216	97	126	**439**	NA
HSD\GED	NA	NA	236	95	140	197	32	**699**	NA
Some college -- not attending	NA	NA	26	0	467	141	10	**644**	NA
Some college -- attending	NA	NA	0	51	0	0	0	**51**	NA
AA	NA	NA	64	0	260	5	0	**328**	NA
BA+	NA	NA	192	165	368	57	30	**813**	NA

Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Table 13 — Unemployed Labor Force by Age, Race\Ethnicity, and Educational Attainment (Persons 16 and Over): Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Labor Force (25+)	Total Labor Force
Total	**2,517**	**4,619**	**2,197**	**2,404**	**5,656**	**1,134**	**590**	**12,378**	**19,513**
White	**614**	**792**	**649**	**563**	**1,170**	**248**	**135**	**2,765**	**4,171**
Did not earn HSD\GED	NA	NA	0	81	142	0	28	**251**	NA
HSD\GED	NA	NA	312	49	541	0	0	**902**	NA
Some college -- not attending	NA	NA	52	229	283	95	10	**670**	NA
Some college -- attending	NA	NA	123	87	33	0	0	**244**	NA
AA	NA	NA	9	26	115	35	54	**239**	NA
BA+	NA	NA	153	91	54	119	42	**458**	NA
Latino	**1,387**	**3,155**	**1,548**	**1,489**	**3,666**	**627**	**410**	**7,740**	**12,283**
Did not earn HSD\GED	NA	NA	401	657	2,036	344	380	**3,818**	NA
HSD\GED	NA	NA	866	284	924	248	0	**2,322**	NA
Some college -- not attending	NA	NA	138	136	428	35	22	**760**	NA
Some college -- attending	NA	NA	21	228	55	0	0	**304**	NA
AA	NA	NA	98	79	41	0	8	**226**	NA
BA+	NA	NA	24	104	183	0	0	**311**	NA
Other	**516**	**671**	**0**	**352**	**820**	**259**	**45**	**1,873**	**3,060**
Did not earn HSD\GED	NA	NA	83	0	100	31	0	**214**	NA
HSD\GED	NA	NA	57	159	267	88	0	**571**	NA
Some college -- not attending	NA	NA	70	118	87	108	27	**411**	NA
Some college -- attending	NA	NA	103	31	77	0	0	**211**	NA
AA	NA	NA	0	25	27	15	0	**68**	NA
BA+	NA	NA	83	19	263	16	18	**398**	NA

Source: ADE, Inc. based on US Census ACS PUMS 2012-2014 from iPUMS

Table 14 — Unemployment Rates by Age, Race\Ethnicity, and Educational Attainment (Persons 16 and Over): Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Labor Force (25+)	Total Labor Force
Total	**47.6%**	**30.1%**	**18.3%**	**17.1%**	**11.7%**	**8.7%**	**14.2%**	**13.2%**	**17.0%**
White	**49.4%**	**24.8%**	**16.3%**	**14.0%**	**7.6%**	**3.9%**	**5.5%**	**8.6%**	**11.4%**
Did not earn HSD\GED	NA	NA	0.0%	18.9%	12.4%	0.0%	22.8%	**10.0%**	NA
HSD\GED	NA	NA	29.6%	9.0%	12.5%	0.0%	0.0%	**11.2%**	NA
Some college -- not attending	NA	NA	5.9%	21.9%	6.6%	6.0%	1.9%	**8.0%**	NA
Some college -- attending	NA	NA	33.8%	26.5%	18.4%	0.0%	NA	**26.9%**	NA
AA	NA	NA	5.2%	4.0%	7.8%	4.3%	16.3%	**6.9%**	NA
BA+	NA	NA	10.9%	8.9%	1.4%	7.4%	4.6%	**5.1%**	NA
Latino	**45.7%**	**30.4%**	**18.6%**	**18.0%**	**13.4%**	**12.0%**	**31.7%**	**15.3%**	**19.2%**
Did not earn HSD\GED	NA	NA	19.8%	18.8%	15.8%	12.3%	48.8%	**17.4%**	NA
HSD\GED	NA	NA	30.4%	14.7%	15.0%	27.6%	0.0%	**19.2%**	NA
Some college -- not attending	NA	NA	6.8%	10.6%	8.1%	4.4%	15.3%	**7.9%**	NA
Some college -- attending	NA	NA	4.3%	37.5%	35.8%	NA	NA	**24.5%**	NA
AA	NA	NA	36.5%	29.5%	3.0%	0.0%	7.3%	**9.7%**	NA
BA+	NA	NA	3.6%	15.0%	11.6%	0.0%	0.0%	**9.2%**	NA
Other	**50.9%**	**37.1%**	**21.3%**	**20.3%**	**14.4%**	**17.1%**	**10.3%**	**16.7%**	**21.8%**
Did not earn HSD\GED	NA	NA	100.0%	0.0%	14.1%	15.2%	0.0%	**16.9%**	NA
HSD\GED	NA	NA	11.1%	41.5%	19.9%	16.4%	0.0%	**20.3%**	NA
Some college -- not attending	NA	NA	52.2%	32.1%	6.0%	38.8%	58.3%	**18.0%**	NA
Some college -- attending	NA	NA	100.0%	31.3%	38.3%	NA	NA	**52.4%**	NA
AA	NA	NA	0.0%	7.3%	5.4%	9.4%	0.0%	**5.7%**	NA
BA+	NA	NA	9.5%	3.8%	17.8%	4.8%	18.5%	**12.2%**	NA

Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Table 15 — Labor Force By Age, Citizenship Status, and Educational Attainment (Persons 16 and Over): Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Labor Force (25+)	Total
Total	**5,293**	**15,366**	**14,183**	**14,046**	**48,530**	**13,077**	**4,154**	**93,991**	**114,650**
Citizen	**4,493**	**13,401**	**10,819**	**9,616**	**34,249**	**10,973**	**3,697**	**69,353**	**87,247**
Did not earn HSD\GED	NA	NA	802	905	4,518	2,008	686	**8,919**	NA
HSD\GED	NA	NA	3,311	1,988	9,841	2,873	785	**18,797**	NA
Some college -- not attending	NA	NA	2,528	2,502	9,826	2,506	730	**18,093**	NA
Some college -- attending	NA	NA	931	981	535	31	0	**2,478**	NA
AA	NA	NA	500	1,242	3,116	1,270	465	**6,593**	NA
BA+	NA	NA	2,747	1,998	6,411	2,286	1,030	**14,473**	NA
Not Citizen	**800**	**1,965**	**3,364**	**4,430**	**14,282**	**2,105**	**457**	**24,638**	**27,403**
Did not earn HSD\GED	NA	NA	1,433	3,059	10,204	1,671	444	**16,812**	NA
HSD\GED	NA	NA	1,108	878	2,011	164	0	**4,162**	NA
Some college -- not attending	NA	NA	534	202	1,191	168	0	**2,095**	NA
Some college -- attending	NA	NA	15	55	0	0	0	**69**	NA
AA	NA	NA	92	19	222	26	8	**368**	NA
BA+	NA	NA	181	216	654	75	5	**1,132**	NA

Source: ADE Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Table 16 — Unemployed Labor Force By Age, Citizenship Status, and Educational Attainment (Persons 16 and Over): Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Labor Force (25+)	Total Labor Force
Total	**2,517**	**24,619**	**2,594**	**2,404**	**5,656**	**1,134**	**590**	**12,378**	**19,513**
Citizen	**2,010**	**3,993**	**2,274**	**1,802**	**3,529**	**742**	**341**	**8,686**	**14,689**
Did not earn HSD\GED	NA	NA	430	353	576	107	167	**1,634**	NA
HSD\GED	NA	NA	1,111	293	1,444	263	0	**3,111**	NA
Some college -- not attending	NA	NA	119	484	776	203	60	**1,642**	NA
Some college -- attending	NA	NA	247	346	165	0	0	**758**	NA
AA	NA	NA	107	111	183	50	54	**506**	NA
BA+	NA	NA	260	214	384	119	59	**1,036**	NA
Not Citizen	**507**	**626**	**320**	**602**	**2,127**	**393**	**249**	**3,691**	**4,824**
Did not earn HSD\GED	NA	NA	54	384	1,702	268	241	**2,650**	NA
HSD\GED	NA	NA	124	199	288	73	0	**684**	NA
Some college -- not attending	NA	NA	141	0	22	35	0	**199**	NA
Some college -- attending	NA	NA	0	0	0	0	0	**0**	NA
AA	NA	NA	0	19	0	0	8	**27**	NA
BA+	NA	NA	0	0	115	16	0	**131**	NA

Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Table 17 — Unemployment Rates By Age, Citizenship Status, and Educational Attainment (Persons 16 and Over): Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Labor Force (25+)	Total Labor Force
Total	**47.6%**	**30.1%**	**18.3%**	**17.1%**	**11.7%**	**8.7%**	**14.2%**	**13.2%**	**17.0%**
Citizen	44.7%	29.8%	21.0%	18.7%	10.3%	6.8%	9.2%	**12.5%**	**16.8%**
Did not earn HSD\GED	NA	NA	53.6%	39.0%	12.7%	5.3%	24.4%	**18.3%**	NA
HSD\GED	NA	NA	33.6%	14.7%	14.7%	9.1%	0.0%	**16.6%**	NA
Some college -- not attending	NA	NA	4.7%	19.3%	7.9%	8.1%	8.2%	**9.1%**	NA
Some college -- attending	NA	NA	26.5%	35.3%	30.8%	0.0%	NA	**30.6%**	NA
AA	NA	NA	21.4%	8.9%	5.9%	3.9%	11.7%	**7.7%**	NA
BA+	NA	NA	9.5%	10.7%	6.0%	5.2%	5.8%	**7.2%**	NA
Not Citizen	63.4%	31.8%	9.5%	13.6%	14.9%	18.7%	54.4%	**15.0%**	**17.6%**
Did not earn HSD\GED	NA	NA	3.8%	12.6%	16.7%	16.1%	54.3%	**15.8%**	NA
HSD\GED	NA	NA	11.2%	22.7%	14.3%	44.6%	NA	**16.4%**	NA
Some college -- not attending	NA	NA	26.5%	0.0%	1.9%	21.0%	NA	**9.5%**	NA
Some college -- attending	NA	NA	0.0%	0.0%	NA	NA	NA	**0.0%**	NA
AA	NA	NA	0.0%	100.0%	0.0%	0.0%	100.0%	**7.3%**	NA
BA+	NA	NA	0.0%	0.0%		17.6%	21.0%	**0.0%**	NA

Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Table 18 — Labor Force By Age, Disability Status, and Educational Attainment (Persons 16 and Over): Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Labor Force (25+)	Total Labor Force
Total	**5,293**	**15,366**	**14,183**	**14,046**	**48,530**	**13,077**	**4,154**	**93,991**	**114,650**
Persons W\ No Reported Disability	**4,876**	**13,619**	**13,253**	**12,743**	**42,159**	**11,415**	**3,233**	**82,803**	**101,298**
Did not earn HSD\GED	NA	NA	2,047	3,378	12,408	3,066	943	**21,842**	NA
HSD\GED	NA	NA	3,974	2,746	10,224	2,847	591	**20,383**	NA
Some college -- not attending	NA	NA	2,959	2,430	9,483	2,406	508	**17,785**	NA
Some college -- attending	NA	NA	898	958	535	31	0	**2,422**	NA
AA	NA	NA	538	1,142	3,039	1,046	376	**6,141**	NA
BA+	NA	NA	2,838	2,089	6,470	2,020	814	**14,231**	NA
Persons W\At Least One Disability	**417**	**1,748**	**930**	**1,303**	**6,372**	**1,662**	**921**	**11,187**	**13,352**
Did not earn HSD\GED	NA	NA	188	586	2,314	613	187	**3,888**	NA
HSD\GED	NA	NA	445	120	1,628	190	193	**2,577**	NA
Some college -- not attending	NA	NA	103	275	1,534	268	223	**2,403**	NA
Some college -- attending	NA	NA	48	77	0	0	0	**125**	NA
AA	NA	NA	54	120	300	250	97	**820**	NA
BA+	NA	NA	91	125	596	341	221	**1,374**	NA

Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Table 19 — Unemployed Labor Force By Age, Disability Status, and Educational Attainment (Persons 16 and Over): Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Labor Force (25+)	Total Labor Force
Total	**2,517**	**4,619**	**2,594**	**2,404**	**5,656**	**1,134**	**590**	**12,378**	**19,513**
Persons W\ No Reported Disability	**2,185**	**3,750**	**2,421**	**2,071**	**4,491**	**903**	**504**	**10,391**	**16,326**
Did not earn HSD\GED	NA	NA	484	613	1,777	253	380	**3,507**	NA
HSD\GED	NA	NA	1,111	427	1,327	319	0	**3,184**	NA
Some college -- not attending	NA	NA	260	458	547	225	33	**1,523**	NA
Some college -- attending	NA	NA	199	286	165	0	0	**650**	NA
AA	NA	NA	107	117	176	31	32	**463**	NA
BA+	NA	NA	260	170	500	76	59	**1,065**	NA
Persons W\At Least One Disability	**332**	**869**	**172**	**333**	**1,165**	**231**	**85**	**1,986**	**3,187**
Did not earn HSD\GED	NA	NA	0	125	501	122	28	**777**	NA
HSD\GED	NA	NA	124	65	405	17	0	**611**	NA
Some college -- not attending	NA	NA	0	26	251	14	27	**318**	NA
Some college -- attending	NA	NA	48	60	0	0	0	**108**	NA
AA	NA	NA	0	13	7	19	30	**70**	NA
BA+	NA	NA	0	44	0	58	0	**102**	NA

Source: ADE, Inc., based US Census ACS PUMS 2012-2014 from iPUMS

Table 20 — Unemployment rates By Age, Disability Status, and Educational Attainment (Persons 16 and Over): Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Labor Force (25+)	Total Labor Force
Total	**47.6%**	**30.1%**	**18.3%**	**17.1%**	**11.7%**	**8.7%**	**14.2%**	**13.2%**	**17.0%**
Persons W\ No Reported Disability	**44.8%**	**27.5%**	**18.3%**	**16.3%**	**10.7%**	**7.9%**	**15.6%**	**12.5%**	**16.1%**
Did not earn HSD\GED	NA	NA	23.7%	18.1%	14.3%	8.3%	40.3%	**16.1%**	NA
HSD\GED	NA	NA	28.0%	15.5%	13.0%	11.2%	0.0%	**15.6%**	NA
Some college -- not attending	NA	NA	8.8%	18.9%	5.8%	9.3%	6.4%	**8.6%**	NA
Some college -- attending	NA	NA	22.2%	29.8%	30.8%	0.0%	NA	**26.8%**	NA
AA	NA	NA	19.9%	10.2%	5.8%	2.9%	8.6%	**7.5%**	NA
BA+	NA	NA	9.2%	8.1%	7.7%	3.8%	7.3%	**7.5%**	NA
Persons W\At Least One Disability	**79.6%**	**49.7%**	**18.5%**	**25.6%**	**18.3%**	**13.9%**	**9.3%**	**17.8%**	**23.9%**
Did not earn HSD\GED	NA	NA	0.0%	21.3%	21.7%	19.9%	15.2%	**20.0%**	NA
HSD\GED	NA	NA	27.9%	54.3%	24.9%	8.9%	0.0%	**23.7%**	NA
Some college -- not attending	NA	NA	0.0%	9.3%	16.4%	5.2%	12.1%	**13.2%**	NA
Some college -- attending	NA	NA	100.0%	78.0%	NA	NA	NA	**86.4%**	NA
AA	NA	NA	0.0%	10.9%	2.4%	7.7%	30.9%	**8.5%**	NA
BA+	NA	NA	0.0%	35.3%	0.0%	17.1%	0.0%	**7.4%**	NA

Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Table 21 — Labor Force By Age, Veteran Status, and Educational Attainment (Persons 16 and Over): Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Labor Force (25+)	Total Labor Force
Total	**5,293**	**15,366**	**14,183**	**14,046**	**48,530**	**13,077**	**4,154**	**93,991**	**114,650**
Not Veterans	**5,274**	**15,285**	**13,986**	**13,614**	**46,555**	**11,499**	**3,485**	**89,139**	**109,699**
Did not earn HSD\GED	NA	NA	2,235	3,964	14,682	3,679	1,052	**25,613**	NA
HSD\GED	NA	NA	4,359	2,825	11,571	2,635	747	**22,137**	NA
Some college -- not attending	NA	NA	2,994	2,589	10,080	2,280	554	**18,496**	NA
Some college -- attending	NA	NA	931	1,017	535	0	0	**2,483**	NA
AA	NA	NA	538	1,080	3,116	826	382	**5,942**	NA
BA+	NA	NA	2,929	2,139	6,570	2,079	750	**14,467**	NA
Veterans	**19**	**81**	**197**	**432**	**1,976**	**1,578**	**669**	**4,852**	**4,951**
Did not earn HSD\GED	NA	NA	0	0	40	0	78	**117**	NA
HSD\GED	NA	NA	60	41	282	402	38	**822**	NA
Some college -- not attending	NA	NA	68	116	937	394	177	**1,692**	NA
Some college -- attending	NA	NA	15	19	0	31	0	**64**	NA
AA	NA	NA	54	182	222	470	91	**1,019**	NA
BA+	NA	NA	0	75	495	282	286	**1,137**	NA

Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Table 22 — Unemployed Labor Force By Age, Veteran Status, and Educational Attainment (Persons 16 and Over): Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Labor Force (25+)	Total Labor Force
Total	**2,517**	**4,619**	**2,594**	**2,404**	**5,656**	**1,134**	**590**	**12,378**	**19,513**
Not Veterans	**2,517**	**4,619**	**2,513**	**2,325**	**5,562**	**1,035**	**513**	**11,948**	**19,083**
Did not earn HSD\GED	NA	NA	484	738	2,278	375	408	**4,284**	NA
HSD\GED	NA	NA	1,182	492	1,712	305	0	**3,691**	NA
Some college -- not attending	NA	NA	233	484	767	196	10	**1,690**	NA
Some college -- attending	NA	NA	247	327	165	0	0	**739**	NA
AA	NA	NA	107	130	140	46	47	**471**	NA
BA+	NA	NA	260	154	500	113	47	**1,073**	NA
Veterans	**0**	**0**	**81**	**79**	**94**	**99**	**77**	**430**	**430**
Did not earn HSD\GED	NA	NA	0	0	0	0	0	**0**	NA
HSD\GED	NA	NA	53	0	20	31	0	**104**	NA
Some college -- not attending	NA	NA	28	0	31	43	49	**151**	NA
Some college -- attending	NA	NA	0	19	0	0	0	**19**	NA
AA	NA	NA	0	0	43	4	15	**62**	NA
BA+	NA	NA	0	60	0	21	13	**94**	NA

Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Table 23 — Unemployment Rates By Age, Veteran Status, and Educational Attainment (Persons 16 and Over): Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Labor Force (25+)	Total Labor Force
Total	**47.6%**	**30.1%**	**18.3%**	**17.1%**	**11.7%**	**8.7%**	**14.2%**	**13.2%**	**17.0%**
Not Veterans	**47.7%**	**30.2%**	**18.0%**	**17.1%**	**11.9%**	**9.0%**	**14.7%**	**13.4%**	**17.4%**
Did not earn HSD\GED	NA	NA	21.7%	18.6%	15.5%	10.2%	38.8%	**16.7%**	NA
HSD\GED	NA	NA	27.1%	17.4%	14.8%	11.6%	0.0%	**16.7%**	NA
Some college -- not attending	NA	NA	7.8%	18.7%	7.6%	8.6%	1.9%	**9.1%**	NA
Some college -- attending	NA	NA	26.5%	32.2%	30.8%	NA	NA	**29.8%**	NA
AA	NA	NA	19.9%	12.0%	4.5%	5.6%	12.4%	**7.9%**	NA
BA+	NA	NA	8.9%	7.2%	7.6%	5.4%	6.2%	**7.4%**	NA
Veterans	**0%**	**0%**	**40.9%**	**18.4%**	**4.8%**	**6.3%**	**11.5%**	**8.9%**	**8.7%**
Did not earn HSD\GED	NA	NA	NA	NA	0.0%	NA	0.0%	**0.0%**	NA
HSD\GED	NA	NA	88.3%	0.0%	7.1%	7.8%	0.0%	**12.7%**	NA
Some college -- not attending	NA	NA	40.5%	0.0%	3.3%	10.8%	27.9%	**8.9%**	NA
Some college -- attending	NA	NA	0.0%	100.0%	NA	0.0%	NA	**29.5%**	NA
AA	NA	NA	0.0%	0.0%	19.4%	0.8%	16.5%	**6.1%**	NA
BA+	NA	NA	NA	80.4%	0.0%	7.6%	4.4%	**8.3%**	NA

Source: ADE, Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Table 24 — Employed and Unemployed Labor Force by College Degree Status and Economic Sector (Persons 25 and Over): Merced County

	College Degree				No College Degree			
	Full-Time	Part-Time	Unemp	UER	Full-Time	Part-Time	Unem	UER
Total	**15,383**	**5,483**	**1,700**	**7.5%**	**42,055**	**18,692**	**10,678**	**14.9%**
11 Agriculture	250	84	39	10.5%	7,089	4,246	2,211	16.3%
21 Mining	0	0	0	NA	54	13	79	54.2%
22 Utilities	147	15	0	0.0%	614	62	0	0.0%
23 Construction	582	92	204	23.3%	2,856	1,786	886	16.0%
31 Manufacturing	1,008	224	149	10.8%	7,668	1,590	1,893	17.0%
42 Wholesale	129	31	13	7.4%	1,352	267	437	21.2%
43 Retail	994	611	68	4.1%	4,179	1,917	1,226	16.7%
48 Transportation	207	16	0	0.0%	2,396	619	350	10.4%
49 Warehousing	83	0	0	0.0%	539	384	117	11.2%
51 Information	233	97	26	7.4%	544	147	61	8.1%
52 Finance	534	328	75	8.0%	1,118	282	78	5.3%
53 Real Estate	173	39	80	27.3%	848	132	50	4.9%
54 Prof., Technical	839	191	69	6.3%	823	150	95	8.9%
55 MCE	0	0	0	NA	0	0	0	NA
56 Admin Support	137	74	64	23.2%	1,740	811	627	19.7%
56 Waste Mgt	0	0	0	NA	171	0	24	12.3%
61 Education	4,568	2,139	264	3.8%	1,828	1,648	132	3.7%
62 Health	3,032	1,214	89	2.0%	3,372	1,445	387	7.4%
71 Arts, Entertain.	56	5	13	17.3%	184	74	139	35.1%
72 Accommodations	42	0	0	0.0%	186	58	9	3.4%
72 Food Services	544	72	170	21.6%	1,492	1,883	326	8.8%
81 Other Services	611	89	122	14.8%	1,345	777	118	5.3%
92 Public Sector	1,213	145	105	7.2%	1,604	401	73	3.5%
98 Military	0	16	0	0.0%	56	0	19	25.3%
99 Long Term Unemp.			151	100.0%			1,341	100.0%

Source: Applied Development Economics, based on US Census ACS Public Use Microdata 2012-2014 from iPUMS

CONCLUSION

At 1.4 percent a year, Merced County is expected to grow modestly from now to 2025, although analysts project a number of sectors (Health [NAICS 61], Logistics [NAICS 42, NAICS 48, and NAICs 49]) to exhibit steady growth at rates that double the overall annual growth rate of 1.4 percent. However, qualified workers are in short supply for certain key job categories. Based on the analysis presented in this report and discussions with key employers and workforce training organizations, the following can be identified as potential priorities for additional training efforts.

- Medical Technicians
- Electricians
- Maintenance Mechanics
- Ability to use computer operated processing controls and instruments (and related English competency)
- Workers with supervisory and management skills
- Business skills

APPENDIX

DETAILED INDUSTRY CLUSTER EMPLOYMENT PROJECTIONS

Appendix Table 1 Employment Projections By Industry Clusters: Agriculture: Distribution

Merced County					
Ag and Food -- Distribution		Employment		Change	Ann. Growth Rate
NAICS	Industry	2015	2025 proj.	2015-2025	
		4,534	5,514	980	2.0%
484220	Specialized Freight (except Used Goods) Trucking, Local	614	858	243	3.4%
424480	Fresh Fruit and Vegetable Merchant Wholesalers	476	662	187	3.4%
493110	General Warehousing and Storage	503	666	163	2.9%
484110	General Freight Trucking, Local	319	463	144	3.8%
424410	General Line Grocery Merchant Wholesalers	425	508	83	1.8%
424910	Farm Supplies Merchant Wholesalers	198	277	80	3.5%
445120	Convenience Stores	124	174	50	3.4%
424470	Meat and Meat Product Merchant Wholesalers	98	135	37	3.3%
424590	Other Farm Product Raw Material Merchant Wholesalers	32	62	30	7.0%
445110	Supermarkets and Other Grocery (except Convenience)	1,325	1,346	21	0.2%
445210	Meat Markets	29	47	18	4.8%
424430	Dairy Product (except Dried or Canned) Merch. Wholesalers	24	40	16	5.4%
445310	Beer, Wine, and Liquor Stores	36	46	10	2.6%
445291	Baked Goods Stores	3	11	8	14.3%
482110	Rail transportation	55	60	5	0.9%
488190	Other Support Activities for Air Transportation	17	21	4	2.0%
424510	Grain and Field Bean Merchant Wholesalers	3	3	0	0.0%
424820	Wine and Distilled Alcoholic Beverage Merchant Wholesalers	3	3	0	0.0%
424930	Flower, Nursery Stock, and Florists' Supplies Wholesalers	3	3	0	0.0%
445292	Confectionery and Nut Stores	3	3	0	0.0%
481211	Nonscheduled Chartered Passenger Air Transportation	3	3	0	0.0%
484230	Specialized Freight Trucking, Long-Distance	3	3	0	0.0%
493190	Other Warehousing and Storage	3	3	0	0.0%
424450	Confectionery Merchant Wholesalers	83	79	-4	0.0%
424490	Other Grocery and Related Products Merchant Wholesalers	39	27	-12	0.0%
445299	All Other Specialty Food Stores	16	3	-13	0.0%
424520	Livestock Merchant Wholesalers	24	3	-21	-18.8%
484122	General Freight Trucking, Long-Distance, Less Than Truckload	29	3	-26	-20.2%
484121	General Freight Trucking, Long-Distance, Truckload	47	3	-44	-24.1%
Source: ADE, Inc., based on EMSI QCEW and Non-QCEW 2015 Q4					

Appendix Table 2 Employment Projections By Industry Clusters: Agriculture: Processing

Merced County					
Ag and Food -- Processing		**Employment**		**Change**	**Ann. Growth Rate**
NAICS	Industry	2015	2025 proj.	2015-2025	
		7,079	7,379	300	0.4%
311511	Fluid Milk Manufacturing	417	616	198	4.0%
312130	Wineries	414	580	166	3.4%
311421	Fruit and Vegetable Canning	1,233	1,387	155	1.2%
326111	Plastics Bag and Pouch Manufacturing	83	181	98	8.1%
311513	Cheese Manufacturing	811	880	69	0.8%
311411	Frozen Fruit, Juice, and Vegetable Manufacturing	869	909	39	0.4%
311119	Other Animal Food Manufacturing	94	123	29	2.7%
311612	Meat Processed from Carcasses	190	218	28	1.4%
311830	Tortilla Manufacturing	28	46	19	5.3%
311212	Rice Milling	3	3	0	unknown
311811	Retail Bakeries	3	3	0	unknown
311812	Commercial Bakeries	3	3	0	unknown
311813	Frozen Cakes, Pies, and Other Pastries Manufacturing	3	3	0	unknown
311941	Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing	3	3	0	unknown
311942	Spice and Extract Manufacturing	3	3	0	unknown
321113	Sawmills	3	3	0	unknown
322211	Corrugated and Solid Fiber Box Manufacturing	111	109	-3	-0.2%
311611	Animal (except Poultry) Slaughtering	56	37	-19	-4.0%
311999	All Other Miscellaneous Food Manufacturing	49	11	-38	-13.9%
332439	Other Metal Container Manufacturing	49	3	-46	-24.4%
311422	Specialty Canning	55	0	-55	-100.0%
311911	Roasted Nuts and Peanut Butter Manufacturing	196	128	-68	-4.1%
311615	Poultry Processing	2,209	2,111	-98	-0.5%
311423	Dried and Dehydrated Food Manufacturing	195	21	-174	-20.1%
Source: ADE, Inc., based on EMSI QCEW and Non-QCEW 2015 Q4					

Appendix Table 3 Employment Projections By Industry Clusters: Agriculture: Production

Merced County					
Ag and Food – Production		**Employment**		**Change**	**Ann. Growth Rate**
NAICS	Industry	2015	2025 proj.	2015-2025	
		8,376	8,150	-226	-0.3%
113210	Forest Nurseries and Gathering of Forest Products	3	3	0	0.0%
111000	Crop Production	5,112	5,048	-64	-0.1%
112000	Animal Production and Aquaculture	3,261	3,100	-161	-0.5%
Source: Applied Development Economics, based on EMSI					

Appendix Table 4 Employment Projections By Industry Clusters: Agriculture: Support Merced County

Ag and Food -- Support		**Employment**		**Change**	**Ann. Growth Rate**
NAICS	Industry	2015	2025 proj.	2015-2025	
		8,787	10,875	2,088	2.2%
115115	Farm Labor Contractors and Crew Leaders	3,912	5,271	1,359	3.0%
115113	Crop Harvesting, Primarily by Machine	475	632	157	2.9%
541690	Other Scientific and Technical Consulting Services	176	322	146	6.2%
332311	Prefabricated Metal Building and Component Manufacturing	165	288	122	5.7%
237110	Water and Sewer Line and Related Structures Construction	242	361	119	4.1%
325314	Fertilizer (Mixing Only) Manufacturing	90	157	68	5.8%
333111	Farm Machinery and Equipment Manufacturing	184	251	68	3.2%
541380	Testing Laboratories	83	151	67	6.1%
115112	Soil Preparation, Planting, and Cultivating	285	312	27	0.9%
541810	Advertising Agencies	58	81	23	3.4%
541614	Process, Physical Distribution, and Logistics Consulting	16	38	23	9.3%
561110	Office Administrative Services	89	107	17	1.8%
423840	Industrial Supplies Merchant Wholesalers	30	47	17	4.7%
221310	Water Supply and Irrigation Systems	30	41	11	3.1%
333993	Packaging Machinery Manufacturing	23	32	9	3.5%
541370	Surveying and Mapping (except Geophysical) Services	3	10	7	12.9%
562920	Materials Recovery Facilities	3	10	7	12.9%
115116	Farm Management Services	104	110	6	0.6%
811310	Commercial and Industrial Machinery Repair and Maintenance	76	82	6	0.7%

Ag and Food -- Support		Employment		Change	Ann. Growth Rate
561730	Landscaping Services	199	202	3	0.2%
541890	Other Services Related to Advertising	3	6	3	7.2%
541940	Veterinary Services	137	140	3	0.2%
541613	Marketing Consulting Services	3	3	0	0.0%
551112	Offices of Other Holding Companies	3	3	0	0.0%
522292	Real Estate Credit	50	48	-2	-0.5%
115111	Cotton Ginning	3	0	-3	-100.0%
115210	Support Activities for Animal Production	59	56	-4	-0.6%
444220	Nursery, Garden Center, and Farm Supply Stores	162	158	-4	-0.3%
551114	Corporate, Subsidiary, and Regional Managing Offices	859	854	-5	-0.1%
532490	Other Commercial, Industrial Machinery Rental and Leasing	28	21	-7	-2.7%
423830	Industrial Machinery and Equipment Merchant Wholesalers	10	3	-7	-11.4%
561710	Exterminating and Pest Control Services	64	53	-11	-1.9%
444210	Outdoor Power Equipment Stores	21	3	-18	-17.6%
561320	Temporary Help Services	22	3	-19	-18.2%
423820	Farm and Garden Machinery and Equipment Wholesalers	124	98	-26	-2.3%
115114	Postharvest Crop Activities (except Cotton Ginning)	949	919	-30	-0.3%
541870	Advertising Material Distribution Services	47	3	-44	-24.0%
Source: ADE, Inc., based on EMSI QCEW and Non-QCEW 2015 Q4					

Appendix Table 5 Employment Projections By Industry Clusters: Energy

Merced County			Employment		Change	Ann. Growth Rate
Energy Cluster and Sub-Clusters	NAICS	Industry	2015	2025 proj.	2015-2025	
			2,597	2,926	330	1.2%
01 Energy Core--02 Petroelum Distribution	424710	Petroleum Bulk Stations and Terminals	25	38	14	4.6%
01 Energy Core--02 Petroelum Distribution	424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	24	3	-21	-18.7%
01 Energy Core--03 Power Generation	221210	Natural Gas Distribution	142	77	-65	-6.0%
01 Energy Core--04 Alt Energy Production	237110	Water and Sewer Line and Related Structures Construction	242	361	119	4.1%
01 Energy Core--04 Alt Energy Production	238160	Roofing Contractors	28	21	-7	-3.0%
01 Energy Core--05 Alt Energy Distribution	423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	18	24	6	2.9%
01 Energy Core--05 Alt Energy Distribution	423720	Plumbing and Heating Equipment and Supplies (Hydronics) Merchant Wholesalers	13	11	-2	-1.7%
01 Energy Core--06 Energy Efficiency	238220	Plumbing, Heating, and Air-Conditioning Contractors	401	421	21	0.5%
01 Energy Core--06 Energy Efficiency	238210	Electrical Contractors and Other Wiring Installation Contractors	143	96	-46	-3.8%
01 Energy Core--06 Energy Efficiency	238310	Drywall and Insulation Contractors	77	6	-71	-22.6%
01 Energy Core--07 Energy Equipment Mfg	335122	Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing	48	3	-45	-24.2%
02 Energy related--01 Manufacturing	335312	Motor and Generator Manufacturing	3	11	8	13.4%
02 Energy related--02 Services	811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	76	82	6	0.7%
02 Energy related--03 Research	541	Prof., Tech., and Sci.	1,357	1,772	415	2.7%
Source: ADE, Inc., based on EMSI QCEW and Non-QCEW 2015 Q4						

Appendix Table 6 Employment Projections By Industry Clusters: Health and Wellness: Delivery

Merced County					
Health and Wellness -- Health Care - Delivery		**Employment**		**Change**	**Ann. Growth Rate**
NAICS	**Industry**	**2015**	**2025 proj.**	**2015-2025**	
		6,320	7,407	1,087	1.6%
623110	Nursing Care Facilities (Skilled Nursing Facilities)	831	1,094	264	2.8%
621111	Offices of Physicians (except Mental Health Specialists)	1,172	1,378	206	1.6%
623990	Other Residential Care Facilities	282	453	172	4.9%
623220	Residential Mental Health and Substance Abuse Facilities	304	433	130	3.6%
621498	All Other Outpatient Care Centers	170	293	123	5.6%
623311	Continuing Care Retirement Communities	133	215	81	4.9%
621492	Kidney Dialysis Centers	142	223	81	4.6%
621340	Offices of Physical, Occupational and Speech Therapists, and Audiologists	153	220	67	3.7%
621910	Ambulance Services	159	219	59	3.2%
621512	Diagnostic Imaging Centers	51	89	38	5.8%
621210	Offices of Dentists	402	437	34	0.8%
621420	Outpatient Mental Health and Substance Abuse Centers	48	79	31	5.0%
621410	Family Planning Centers	51	77	26	4.2%
621511	Medical Laboratories	60	86	25	3.5%
621493	Freestanding Ambulatory Surgical and Emergency Centers	52	66	14	2.4%
621112	Offices of Physicians, Mental Health Specialists	16	30	13	6.2%
621610	Home Health Care Services	102	113	11	1.0%
621491	HMO Medical Centers	11	18	7	5.2%
621991	Blood and Organ Banks	11	14	3	2.2%
621320	Offices of Optometrists	68	70	2	0.3%
621330	Offices of Mental Health Practitioners (except Physicians)	3	3	0	0.0%
621391	Offices of Podiatrists	3	3	0	0.0%
621310	Offices of Chiropractors	58	48	-10	-1.8%
623210	Residential Intellectual and Developmental Disability Facilities	22	3	-19	-18.0%
624310	Vocational Rehabilitation Services	203	163	-40	-2.2%
901200	Federal Government, Military	418	369	-48	-1.2%
623312	Assisted Living Facilities for the Elderly	108	21	-87	-15.1%
622110	General Medical and Surgical Hospitals	1,288	1,190	-97	-0.8%
Source: ADE, Inc., based on EMSI QCEW and Non-QCEW 2015 Q4					

Appendix Table 7 Employment Projections By Industry Clusters: Health and Wellness: All Others

Merced County			Employment		Change	Ann. Growth Rate
Health and Wellness: All Others	NAICS	Industry	2015	2025 proj.	2015-2025	
			2,804	4,495	1,691	4.8%
Health Care--03 Wellness and Fitness	446110	Pharmacies and Drug Stores	386	500	115	2.6%
Health Care--03 Wellness and Fitness	446191	Food (Health) Supplement Stores	16	30	13	6.1%
Health Care--03 Wellness and Fitness	446199	All Other Health and Personal Care Stores	21	31	10	3.9%
Health Care--03 Wellness and Fitness	812191	Diet and Weight Reducing Centers	18	21	4	2.0%
Health Care--03 Wellness and Fitness	446130	Optical Goods Stores	3	3	0	0.0%
Health Care--03 Wellness and Fitness	532291	Home Health Equipment Rental	3	3	0	0.0%
Health Care--03 Wellness and Fitness	621399	Offices of All Other Miscellaneous Health Practitioners	3	3	0	0.0%
Health Care--04 Medical devices manufact.	339112	Surgical and Medical Instrument Manufacturing	18	27	8	3.9%
Health Care--04 Medical devices manufact.	339116	Dental Laboratories	3	3	0	0.0%
Health Care--05 Supplies and Services	423450	Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers	16	31	15	6.9%
Health Care--05 Supplies and Services	423490	Other Professional Equipment and Supplies Merchant Wholesalers	13	13	0	0.1%
Health Care--05 Supplies and Services	424210	Drugs and Druggists' Sundries Merchant Wholesalers	3	3	0	0.0%
Health Care--06 Other Services	624120	Services for the Elderly and Persons with Disabilities	2,107	3,576	1,469	5.4%
Health Care--06 Other Services	624110	Child and Youth Services	75	126	51	5.4%
Health Care--06 Other Services	624190	Other Individual and Family Services	74	87	13	1.6%
Health Care--06 Other Services	624210	Community Food Services	24	26	2	1.0%
Health Care--06 Other Services	624221	Temporary Shelters	6	6	0	0.0%
Health Care--06 Other Services	624229	Other Community Housing Services	16	6	-10	-9.3%
Health Care--06 Other Services	624410	Child Day Care Services	126	85	-41	-3.9%
Source: ADE, Inc., based on EMSI QCEW and Non-QCEW 2015 Q4						

Appendix Table 8 Employment Projections By Industry Clusters: Logistics

Logistics --		Employment		Change	Ann. Growth Rate
NAICS	Industry	2015	2025 proj.	2015-2025	
		2,226	2,768	541	2.2%
484220	Specialized Freight (except Used Goods) Trucking, Local	614	858	243	3.4%
493110	General Warehousing and Storage	503	666	163	2.9%
484110	General Freight Trucking, Local	319	463	144	3.8%
485410	School and Employee Bus Transportation	212	288	77	3.1%
485113	Bus and Other Motor Vehicle Transit Systems	48	99	51	7.5%
488410	Motor Vehicle Towing	49	79	31	5.0%
541614	Process, Physical Distribution, and Logistics Consulting Services	16	38	23	9.3%
492110	Couriers and Express Delivery Services	91	110	19	1.9%
488999	All Other Support Activities for Transportation	3	22	19	22.1%
561910	Packaging and Labeling Services	15	31	16	7.8%
482110	Rail transportation	55	60	5	0.9%
488190	Other Support Activities for Air Transportation	17	21	4	2.0%
481211	Nonscheduled Chartered Passenger Air Transportation	3	3	0	0.0%
484210	Used Household and Office Goods Moving	3	3	0	0.0%
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance	3	3	0	0.0%
485310	Taxi Service	3	3	0	0.0%
485991	Special Needs Transportation	3	3	0	0.0%
493130	Farm Product Warehousing and Storage	3	3	0	0.0%
493190	Other Warehousing and Storage	3	3	0	0.0%
485510	Charter Bus Industry	17	3	-14	-15.9%
484122	General Freight Trucking, Long-Distance, Less Than Truckload	29	3	-26	-20.2%
484121	General Freight Trucking, Long-Distance, Truckload	47	3	-44	-24.1%
336612	Boat Building	173	3	-170	-33.3%
Source: ADE, Inc., based on EMSI QCEW and Non-QCEW 2015 Q4					

Appendix Table 9 Employment Projections By Industry Clusters: Manufacturing: All Others

Manufacturing -- Other		Employment		Change	Ann. Growth Rate
NAICS	Industry	2015	2025 proj.	2015-2025	
		1,759	1,820	61	0.3%
332311	Prefabricated Metal Building and Component Manufacturing	165	288	122	5.7%
327320	Ready-Mix Concrete Manufacturing	206	300	94	3.8%
332323	Ornamental and Architectural Metal Work Manufacturing	78	149	71	6.7%
325314	Fertilizer (Mixing Only) Manufacturing	90	157	68	5.8%
332312	Fabricated Structural Metal Manufacturing	67	113	46	5.4%
336212	Truck Trailer Manufacturing	126	170	44	3.1%
336211	Motor Vehicle Body Manufacturing	23	54	30	8.7%
323113	Commercial Screen Printing	3	19	16	20.5%
339999	All Other Miscellaneous Manufacturing	3	18	15	19.6%
332710	Machine Shops	38	49	11	2.5%
333993	Packaging Machinery Manufacturing	23	32	9	3.5%
325611	Soap and Other Detergent Manufacturing	15	24	9	4.9%
314999	All Other Miscellaneous Textile Product Mills	14	15	1	0.9%
337215	Showcase, Partition, Shelving, and Locker Manufacturing	41	42	1	0.2%
339950	Sign Manufacturing	3	3	0	0.0%
337110	Wood Kitchen Cabinet and Countertop Manufacturing	3	3	0	0.0%
336412	Aircraft Engine and Engine Parts Manufacturing	3	3	0	0.0%
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing	3	3	0	0.0%
327215	Glass Product Manufacturing Made of Purchased Glass	3	3	0	0.0%
326220	Rubber and Plastics Hoses and Belting Manufacturing	3	3	0	0.0%
326199	All Other Plastics Product Manufacturing	3	3	0	0.0%
321214	Truss Manufacturing	3	3	0	0.0%
333995	Fluid Power Cylinder and Actuator Manufacturing	3	0	-3	-100.0%
321999	All Other Miscellaneous Wood Product Manufacturing	3	0	-3	-100.0%
332721	Precision Turned Product Manufacturing	17	3	-14	-16.1%
336214	Travel Trailer and Camper Manufacturing	19	3	-16	-16.7%
336612	Boat Building	173	3	-170	-33.3%
323111	Commercial Printing (except Screen and Books)	629	357	-272	-5.5%
Source: ADE, Inc., based on EMSI QCEW and Non-QCEW 2015 Q4					

Appendix Table 10 Employment Projections By Industry Clusters: Water Technology

Water Flow Technology --		Employment		Change	Ann. Growth Rate
NAICS	Industry	2015	2025 proj.	2015-2025	
		391	532	140	3.1%
424910	Farm Supplies Merchant Wholesalers	198	277	72	3.5%
333111	Farm Machinery and Equipment Manufacturing	184	251	68	3.2%
423830	Industrial Machinery and Equipment Merchant Wholesalers	10	3	0	-11.4%
Source: Applied Development Economics, based on EMSI					

Appendix Table 11 Employment Projections By Industry Clusters: Heavy Construction

Heavy Construction		Employment		Change	Ann. Growth Rate
NAICS	Industry	2015	2025 proj.	2015-2025	
		308	453	144	3.9%
237110	Water and Sewer Line and Related Structures Construction	242	361	119	4.1%
237990	Other Heavy and Civil Engineering Construction	33	62	29	6.5%
237000	Public sector heavy cons.	6	7	1	1.6%
237210	Land Subdivision	27	23	-5	-1.9%
Source: Applied Development Economics, based on EMSI					

Appendix Table 12 Employment Projections By Industry Clusters: Accommodations and Food Services, and Retail

Accommodations, Food and Retail		Employment		Change	Ann. Growth Rate
NAICS	Industries	2015	2025 proj.	2015-2025	
44-45	Retail	8,056	9,579	1,524	1.7%
721	Accommodations	303	404	101	2.9%
722	Food services	2,851	3,567	716	2.3%
Source: Applied Development Economics, based on EMSI					

OCCUPATIONAL PROJECTIONS BY EDUCATION AND TRAINING REQUIREMENTS:

Appendix Table 13 Occupational Projections By Education and Training Requirement: New Jobs (Jobs Expected to Grow By At Least 50)

OCCCSOC	Occupation	Total	01 Less than high school	02 High school diploma or equivalent	03 Some college, no degree	04 Postsecondary non-degree award	05 Associate's degree	06 Bachelor's degree or higher
		7,296	**3,873**	**1,740**	**119**	**630**	**127**	**807**
11-1021	General and Operations Managers	121	0	0	0	0	0	121
21-1093	Social and Human Service Assistants	86	0	86	0	0	0	0
25-1099	Postsecondary Teachers	286	0	0	0	0	0	286
25-2021	Elementary School Teachers, Except Special Education	184	0	0	0	0	0	184
25-2022	Middle School Teachers, Except Special and Career/Technical Education	87	0	0	0	0	0	87
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	74	0	0	0	0	0	74
25-3098	Substitute Teachers	55	0	0	0	0	0	55
25-9041	Teacher Assistants	119	0	0	119	0	0	0
29-1141	Registered Nurses	127	0	0	0	0	127	0
29-2052	Pharmacy Technicians	50	0	50	0	0	0	0
29-2061	Licensed Practical and Licensed Vocational Nurses	84	0	0	0	84	0	0
31-1011	Home Health Aides	179	179	0	0	0	0	0
31-1014	Nursing Assistants	145	0	0	0	145	0	0
31-9092	Medical Assistants	72	0	0	0	72	0	0
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	109	0	109	0	0	0	0
35-2011	Cooks, Fast Food	66	66	0	0	0	0	0
35-2012	Cooks, Institution and Cafeteria	53	53	0	0	0	0	0
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	558	558	0	0	0	0	0
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	68	68	0	0	0	0	0
37-2012	Maids and Housekeeping Cleaners	55	55	0	0	0	0	0
39-9011	Childcare Workers	61	0	61	0	0	0	0
39-9021	Personal Care Aides	585	585	0	0	0	0	0
41-1011	First-Line Supervisors of Retail Sales Workers	129	0	129	0	0	0	0

OCCCSOC	Occupation	Total	01 Less than high school	02 High school diploma or equivalent	03 Some college, no degree	04 Postsecondary non-degree award	05 Associate's degree	06 Bachelor's degree or higher
41-2011	Cashiers	336	336	0	0	0	0	0
41-2031	Retail Salespersons	512	512	0	0	0	0	0
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	66	0	66	0	0	0	0
43-1011	First-Line Supervisors of Office and Administrative Support Workers	110	0	110	0	0	0	0
43-3031	Bookkeeping, Accounting, and Auditing Clerks	81	0	81	0	0	0	0
43-4051	Customer Service Representatives	244	0	244	0	0	0	0
43-5081	Stock Clerks and Order Fillers	178	178	0	0	0	0	0
43-6013	Medical Secretaries	60	0	60	0	0	0	0
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	130	0	130	0	0	0	0
43-9061	Office Clerks, General	112	0	112	0	0	0	0
45-2041	Graders and Sorters, Agricultural Products	70	70	0	0	0	0	0
45-2091	Agricultural Equipment Operators	140	140	0	0	0	0	0
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	725	725	0	0	0	0	0
49-9041	Industrial Machinery Mechanics	78	0	78	0	0	0	0
49-9071	Maintenance and Repair Workers, General	82	0	82	0	0	0	0
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	57	0	57	0	0	0	0
51-9111	Packaging and Filling Machine Operators and Tenders	85	0	85	0	0	0	0
53-3022	Bus Drivers, School or Special Client	81	0	81	0	0	0	0
53-3031	Driver/Sales Workers	58	0	58	0	0	0	0
53-3032	Heavy and Tractor-Trailer Truck Drivers	330	0	0	0	330	0	0
53-3033	Light Truck or Delivery Services Drivers	59	0	59	0	0	0	0
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	222	222	0	0	0	0	0
53-7064	Packers and Packagers, Hand	125	125	0	0	0	0	0

Source: Applied Development Economics, based on EMSI

Appendix Table 14 Occupational Projections By Education and Training Requirement: Annual and Cumulative Projected Openings (At Least 50)

Occupation	Occupation	Annual Opening	Projected Annual Opening Over Ten Years (2015-2025)	Rank
		2,634	**26,340**	
53-7064	Packers and Packagers, Hand	49	491	11
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	56	562	7
53-7061	Cleaners of Vehicles and Equipment	7	67	88
53-7051	Industrial Truck and Tractor Operators	18	179	37
53-3030	Light Truck or Delivery Services Drivers	13	133	53
53-3030	Heavy and Tractor-Trailer Truck Drivers	56	561	8
53-3030	Driver/Sales Workers	10	105	63
53-3020	Bus Drivers, School or Special Client	16	162	41
53-3020	Bus Drivers, Transit and Intercity	5	50	112
53-1000	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	7	65	90
51-9198	Helpers--Production Workers	6	60	96
51-9111	Packaging and Filling Machine Operators and Tenders	36	360	15
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	16	162	41
51-9010	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	7	70	85
51-8031	Water and Wastewater Treatment Plant and System Operators	5	54	103
51-4120	Welders, Cutters, Solderers, and Brazers	7	71	84
51-3092	Food Batchmakers	12	118	58
51-3020	Slaughterers and Meat Packers	32	320	18
51-3020	Meat, Poultry, and Fish Cutters and Trimmers	9	85	74
51-3020	Butchers and Meat Cutters	9	85	74
51-2090	Team Assemblers	9	88	72
51-1011	First-Line Supervisors of Production and Operating Workers	10	96	69
49-9071	Maintenance and Repair Workers, General	25	249	27
49-904X	Industrial Machinery Mechanics	23	233	32

49-3090	Tire Repairers and Changers	5	51	108
Occupation	**Occupation**	**Annual Opening**	**Projected Annual Opening Over Ten Years (2015-2025)**	**Rank**
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	6	59	97
49-3023	Automotive Service Technicians and Mechanics	8	78	81
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	8	81	78
47-2150	Plumbers, Pipefitters, and Steamfitters	5	50	112
47-207X	Operating Engineers and Other Construction Equipment Operators	6	57	98
47-2061	Construction Laborers	12	120	57
47-2031	Carpenters	5	55	99
45-20XX	Farmworkers, Farm, Ranch, and Aquacultural Animals	20	196	34
45-20XX	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	350	3,505	1
45-20XX	Agricultural Equipment Operators	46	461	13
45-2041	Graders and Sorters, Agricultural Products	25	252	26
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	12	121	56
43-9XXX	Office and Administrative Support Workers, All Other	11	110	61
43-9061	Office Clerks, General	36	360	15
43-6010	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	25	245	28
43-6010	Medical Secretaries	10	98	65
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	6	64	93
43-5081	Stock Clerks and Order Fillers	57	574	6
43-5071	Shipping, Receiving, and Traffic Clerks	16	159	44
43-5052	Postal Service Mail Carriers	5	50	112
43-4171	Receptionists and Information Clerks	16	162	41
43-4111	Interviewers, Except Eligibility and Loan	8	82	77
43-4051	Customer Service Representatives	51	515	9
43-3071	Tellers	17	170	39
43-3051	Payroll and Timekeeping Clerks	5	51	108
43-3031	Bookkeeping, Accounting, and Auditing Clerks	16	155	45
43-3021	Billing and Posting Clerks	8	81	78

43-1011	First-Line Supervisors of Office and Administrative Support Workers	27	268	25
41-9041	Telemarketers	5	55	99
Occupation	**Occupation**	**Annual Opening**	**Projected Annual Opening Over Ten Years (2015-2025)**	**Rank**
41-4010	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	13	127	55
41-3099	Sales Representatives, Services, All Other	10	98	65
41-2031	Retail Salespersons	121	1,214	4
41-2021	Counter and Rental Clerks	8	78	81
41-2010	Cashiers	162	1,621	2
41-1011	First-Line Supervisors of Retail Sales Workers	28	281	24
39-9021	Personal Care Aides	59	592	5
39-9011	Childcare Workers	19	187	36
39-5012	Hairdressers, Hairstylists, and Cosmetologists	5	51	108
39-3090	Amusement and Recreation Attendants	8	78	81
37-3010	Landscaping and Grounds keeping Workers	14	140	51
37-2012	Maids and Housekeeping Cleaners	12	118	58
37-1012	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	24	236	31
35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	10	97	67
35-9021	Dishwashers	11	108	62
35-3031	Waiters and Waitresses	33	333	17
35-3022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	9	91	71
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	157	1,566	3
35-3011	Bartenders	7	66	89
35-2021	Food Preparation Workers	15	145	48
35-2010	Cooks, Restaurant	12	118	58
35-2010	Cooks, Institution and Cafeteria	14	143	50
35-2010	Cooks, Fast Food	29	286	22
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	30	295	20
33-909X	Protective Service Workers, All Other	10	99	64
33-3050	Police and Sheriff's Patrol Officers	18	177	38

33-3010	Correctional Officers and Jailers	10	95	70
33-2011	Firefighters	8	80	80
31-9092	Medical Assistants	17	169	40
Occupation	**Occupation**	**Annual Opening**	**Projected Annual Opening Over Ten Years (2015-2025)**	**Rank**
31-9091	Dental Assistants	5	53	106
31-1010	Nursing Assistants	24	243	29
31-1010	Home Health Aides	21	213	33
29-2061	Licensed Practical and Licensed Vocational Nurses	15	155	46
29-2050	Pharmacy Technicians	6	65	91
29-2041	Emergency Medical Technicians and Paramedics	6	64	93
29-1141	Registered Nurses	29	292	21
29-1051	Pharmacists	5	55	99
25-9041	Teacher Assistants	46	455	14
25-3000	Teachers and Instructors, All Other	5	54	103
25-3000	Substitute Teachers	19	189	35
25-2030	Secondary School Teachers, Except Special and Career/Technical Education	30	299	19
25-2020	Middle School Teachers, Except Special and Career/Technical Education	24	238	30
25-2020	Elementary School Teachers, Except Special Education	50	502	10
25-2010	Kindergarten Teachers, Except Special Education	10	97	67
25-2010	Preschool Teachers, Except Special Education	9	86	73
25-1000	Postsecondary Teachers	47	466	12
21-1093	Social and Human Service Assistants	14	145	49
21-1020	Child, Family, and School Social Workers	7	70	85
21-1010	Educational, Guidance, School, and Vocational Counselors	8	85	76
19-40YY	Life, Physical, and Social Science Technicians, All Other	13	131	54
13-2011	Accountants and Auditors	14	140	51
13-1199	Business Operations Specialists, All Other	6	65	91
13-1111	Management Analysts	6	63	95
11-9111	Medical and Health Services Managers	5	55	99
11-9051	Food Service Managers	5	52	107

11-9030	Education Administrators, Elementary and Secondary School	7	70	85
11-9013	Farmers, Ranchers, and Other Agricultural Managers	15	151	47
11-3031	Financial Managers	5	54	103
11-2020	Sales Managers	5	51	108
11-1021	General and Operations Managers	28	284	23

Appendix Table 15 Unemployed Labor Force-to-Job Openings Skills Match (Labor Force: Persons 16 and Over)

OCCSOC	Occupation	Annual Openings	Required Education for Openings	Unemployed in Target Occupations	Unemployed Whose Credentials Match Occupational Requirement	01 < HS\ GED	02 HS\GED	03 Some College-OUT	04 Some College-Attending	05 AA	06 BA or up
		2,634		**11,928**	**6,725**	**3,877**	**3,421**	**1,668**	**1,614**	**385**	**962**
53-7064	Packers and Packagers, Hand	49	Less than high school	262	**262**	198	65	0	0	0	0
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	56	Less than high school	645	**465**	260	205	107	0	73	0
53-7061	Cleaners of Vehicles and Equipment	7	Less than high school	0	**0**	0	0	0	0	0	0
53-7051	Industrial Truck and Tractor Operators	18	Less than high school	175	**86**	63	23	89	0	0	0
53-3030	Driver/Sales Workers and Truck Drivers	80	High school diploma or equivalent	492	**304**	34	187	116	91	20	44
53-3020	Bus Drivers	21	High school diploma or equivalent	44	**44**	0	0	44	0	0	0
53-1000	Supervisors of Transportation and Material Moving Workers	7	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
51-9198	Helpers--	6	Less than high	0	**0**	0	0	0	0	0	0

	Production Workers		school								
51-9111	Packaging and Filling Machine Operators and Tenders	36	High school diploma or equivalent	271	**224**	47	154	70	0	0	0

OCCSOC	Occupation	Annual Openings	Required Education for Openings	Unemployed in Target Occupations	Unemployed Whose Credentials Match Occupational Requirement	01 < HS\ GED	02 HS\GED	03 Some College-OUT	04 Some College-Attending	05 AA	06 BA or up
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	16	High school diploma or equivalent	254	**200**	54	148	52	0	0	0
51-9010	Chemical Processing Machine Setters, Operators, and Tenders	7	High school diploma or equivalent	26	**26**	0	26	0	0	0	0
51-8031	Water and Wastewater Treatment Plant and System Operators	5	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
51-4120	Welding, Soldering, and Brazing Workers	7	High school diploma or equivalent	20	**20**	0	20	0	0	0	0
51-3092	Food Batchmakers	12	High school diploma or equivalent	38	**0**	0	0	0	38	0	0
51-3020	Butchers and Other Meat, Poultry, and Fish Processing Workers	49	Less than high school	80	**69**	69	0	12	0	0	0
51-2090	Miscellaneous Assemblers and Fabricators	9	High school diploma or equivalent	98	**98**	0	61	37	0	0	0
51-1011	First-Line Supervisors of Production and Operating Workers	10	Postsecondary non-degree award	0	**0**	0	0	0	0	0	0

OCCSOC	Occupation	Annual Openings	Required Education for Openings	Unemployed in Target Occupations	Unemployed Whose Credentials Match Occupational Requirement	01 < HS\ GED	02 HS\GED	03 Some College -OUT	04 Some College-Attending	05 AA	06 BA or up
49-9071	Maintenance and Repair Workers, General	25	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
49-904X	Industrial and Refractory Machinery Mechanic	23	High school diploma or equivalent	56	**56**	0	56	0	0	0	0
49-3090	Miscellaneous Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	5	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	6	High school diploma or equivalent	31	**0**	31	0	0	0	0	0
49-3023	Automotive Service Technicians and Mechanics	8	High school diploma or equivalent	45	**0**	45	0	0	0	0	0
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	8	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
47-2150	Pipelayers, Plumbers, Pipefitters, and Steamfitters	5	Less than high school	75	**75**	75	0	0	0	0	0

OCCSOC	Occupation	Annual Openings	Required Education for Openings	Unemployed in Target Occupations	Unemployed Whose Credentials Match Occupational Requirement	01 < HS\ GED	02 HS\GED	03 Some College -OUT	04 Some College-Attending	05 AA	06 BA or up
47-207X	Construction equipment operators except paving, surfacing, and tamping equipment operators	6	High school diploma or equivalent	18	**0**	18	0	0	0	0	0
47-2061	Construction Laborers	12	Less than high school	544	**394**	343	51	52	0	98	0
47-2031	Carpenters	5	High school diploma or equivalent	220	**33**	147	0	33	0	0	40
45-20XX	Miscellaneous agricultural workers including animal breeders	416	High school diploma or equivalent	1,874	**535**	1,188	481	54	151	0	0
45-2041	Graders and Sorters, Agricultural Products	25	Less than high school	1,117	**1,093**	543	551	0	0	0	24
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	12	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
43-9XXX	Miscellaneous office and administrative support workers including desktop publishers	11	High school diploma or equivalent	37	**7**	0	0	7	0	0	30

OCCSOC	Occupation	Annual Openings	Required Education for Openings	Unemployed in Target Occupations	Unemployed Whose Credentials Match Occupational Requirement	01 < HS\ GED	02 HS\GED	03 Some College -OUT	04 Some College-Attending	05 AA	06 BA or up
43-9061	Office Clerks, General	36	High school diploma or equivalent	104	**24**	22	24	0	0	0	58
43-6010	Secretaries and Administrative Assistants	34	High school diploma or equivalent	61	**31**	0	0	31	0	30	0
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	6	High school diploma or equivalent	70	**45**	24	45	0	0	0	0
43-5081	Stock Clerks and Order Fillers	57	Less than high school	291	**133**	55	79	91	67	0	0
43-5071	Shipping, Receiving, and Traffic Clerks	16	High school diploma or equivalent	97	**33**	64	27	6	0	0	0
43-5052	Postal Service Mail Carriers	5	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
43-4171	Receptionists and Information Clerks	16	High school diploma or equivalent	64	**0**	0	0	0	0	0	64
43-4111	Interviewers, Except Eligibility and Loan	8	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
43-4051	Customer Service Representatives	51	High school diploma or equivalent	311	**190**	0	84	106	72	0	49
43-3071	Tellers	17	High school diploma or equivalent	33	**0**	33	0	0	0	0	0

OCCSOC	Occupation	Annual Openings	Required Education for Openings	Unemployed in Target Occupations	Unemployed Whose Credentials Match Occupational Requirement	01 < HS\ GED	02 HS\GED	03 Some College -OUT	04 Some College-Attending	05 AA	06 BA or up
43-3051	Payroll and Timekeeping Clerks	5	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
43-3031	Bookkeeping, Accounting, and Auditing Clerks	16	High school diploma or equivalent	28	**28**	0	0	28	0	0	0
43-3021	Billing and Posting Clerks	8	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
43-1011	First-Line Supervisors of Office and Administrative Support Workers	27	High school diploma or equivalent	171	**111**	0	88	22	0	0	60
41-9041	Telemarketers	5	Less than high school	7	**0**	0	0	0	0	7	0
41-4010	Sales Representatives, Wholesale and Manufacturing	13	Bachelor's degree	57	**0**	0	44	0	0	13	0
41-3099	Sales Representatives, Services, All Other	10	High school diploma or equivalent	30	**30**	0	0	30	0	0	0
41-2031	Retail Salespersons	121	Less than high school	443	**257**	45	212	35	110	0	42
41-2021	Counter and Rental Clerks	8	Less than high school	0	**0**	0	0	0	0	0	0
41-2010	Cashiers	162	Less than high school	834	**118**	0	118	128	505	0	83
41-1011	First-Line Supervisors of Retail Sales Workers	28	High school diploma or equivalent	113	**79**	0	0	79	0	0	34

OCCSOC	Occupation	Annual Openings	Required Education for Openings	Unemployed in Target Occupations	Unemployed Whose Credentials Match Occupational Requirement	01 < HS\ GED	02 HS\GED	03 Some College -OUT	04 Some College-Attending	05 AA	06 BA or up
39-9021	Personal Care Aides	59	Less than high school	182	**129**	21	108	26	0	4	24
39-9011	Childcare Workers	19	High school diploma or equivalent	202	**128**	40	17	112	0	0	34
39-5012	Hairdressers, Hairstylists, and Cosmetologists	5	Postsecondary non-degree award	0	**0**	0	0	0	0	0	0
39-3090	Miscellaneous Entertainment Attendants and Related Workers	8	Less than high school	13	**0**	0	0	0	0	0	13
37-3010	Grounds Maintenance Workers	14	Less than high school	304	**263**	186	78	17	24	0	0
37-2012	Maids and Housekeeping Cleaners	12	Less than high school	212	**208**	208	0	3	0	0	0
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Grounds keeping Workers	24	Less than high school	0	**0**	0	0	0	0	0	0
35-9031	Host and Hostesses, Restaurant, Lounge, and Coffee Shop	10	Less than high school	43	**43**	0	43	0	0	0	0
35-9021	Dishwashers	11	Less than high school	0	**0**	0	0	0	0	0	0
35-3031	Waiters and Waitresses	33	Less than high school	76	**76**	0	76	0	0	0	0

OCCSOC	Occupation	Annual Openings	Required Education for Openings	Unemployed in Target Occupations	Unemployed Whose Credentials Match Occupational Requirement	01 < HS\ GED	02 HS\GED	03 Some College -OUT	04 Some College-Attending	05 AA	06 BA or up
35-3022	Counter Attendant, Cafeteria, Food Concession, and Coffee Shop	9	Less than high school	210	**0**	0	0	0	210	0	0
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	157	Less than high school	30	**0**	0	0	0	30	0	0
35-3011	Bartenders	7	Less than high school	55	**0**	0	0	0	55	0	0
35-2021	Food Preparation Workers	15	Less than high school	237	**26**	0	26	26	98	19	68
35-2010	Cooks	55	Less than high school	272	**272**	31	240	0	0	0	0
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	30	High school diploma or equivalent	26	**26**	0	0	26	0	0	0
33-909X	Lifeguards and Other Protective Service Workers	10	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
33-3050	Police Officers	18	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
33-3010	Bailiffs, Correctional Officers, and Jailers	10	High school diploma or equivalent	0	**0**	0	0	0	0	0	0

OCCSOC	Occupation	Annual Openings	Required Education for Openings	Unemployed in Target Occupations	Unemployed Whose Credentials Match Occupational Requirement	01 < HS\ GED	02 HS\GED	03 Some College -OUT	04 Some College-Attending	05 AA	06 BA or up
33-2011	Firefighters	8	Postsecondary non-degree award	0	**0**	0	0	0	0	0	0
31-9092	Medical Assistants	17	Postsecondary non-degree award	42	**0**	0	0	0	19	23	0
31-9091	Dental Assistants	5	Postsecondary non-degree award	75	**75**	0	0	75	0	0	0
31-1010	Nursing, Psychiatric, and Home Health Aides	46	Less than high school	54	**54**	19	35	0	0	0	0
29-2061	Licensed Practical and Licensed Vocational Nurses	15	Postsecondary non-degree award	13	**0**	0	0	0	0	13	0
29-2050	Health Diagnosing and Treating Practitioner Support Technicians	6	Associate's degree	55	**0**	0	0	17	38	0	0
29-2041	Emergency Medical Technicians and Paramedics	6	Postsecondary non-degree award	19	**19**	0	0	19	0	0	0
29-1141	Nurse Practitioners, and Nurse Midwives	29	Associate's degree	89	**0**	0	0	0	0	0	89
29-1051	Pharmacists	5	Doctoral or professional degree	0	**0**	0	0	0	0	0	0

OCCSOC	Occupation	Annual Openings	Required Education for Openings	Unemployed in Target Occupations	Unemployed Whose Credentials Match Occupational Requirement	01 < HS\ GED	02 HS\GED	03 Some College -OUT	04 Some College-Attending	05 AA	06 BA or up
25-9041	Teacher Assistants	46	Some college, no degree	101	**41**	0	19	0	41	41	0
25-3000	Other Teachers and Instructors	24	Bachelor's degree	44	**19**	0	0	0	25	0	19
25-2030	Secondary School Teachers	30	Bachelor's degree	0	**0**	0	0	0	0	0	0
25-2020	Elementary and Middle School Teachers	74	Bachelor's degree	43	**0**	0	0	0	43	0	0
25-2010	Preschool and Kindergarten Teachers	18	Associate's degree	26	**0**	0	0	12	0	0	14
25-1000	Postsecondary Teachers	47	Doctoral or professional degree	109	**109**	0	0	0	0	0	109
21-1093	Social and Human Service Assistants	14	High school diploma or equivalent	46	**38**	0	0	38	0	0	8
21-1020	Social Workers	7	Bachelor's degree	29	**0**	0	29	0	0	0	0
21-1010	Counselors	8	High school diploma or equivalent	103	**45**	16	0	45	0	25	17
19-40YY	Miscellaneous Life, Physical, and Social Science Technicians, Including Social Science Research Assistants	13	Associate's degree	19	**19**	0	0	0	0	19	0
13-2011	Accountants and Auditors	14	Bachelor's degree	0	**0**	0	0	0	0	0	0

OCCSOC	Occupation	Annual Openings	Required Education for Openings	Unemployed in Target Occupations	Unemployed Whose Credentials Match Occupational Requirement	01 < HS\ GED	02 HS\GED	03 Some College -OUT	04 Some College-Attending	05 AA	06 BA or up
13-1199	Business Operations Specialists, All Other	6	High school diploma or equivalent	22	**22**	0	0	22	0	0	0
13-1111	Management Analysts	6	Bachelor's degree	0	**0**	0	0	0	0	0	0
11-9111	Medical and Health Services Managers	5	Bachelor's degree	0	**0**	0	0	0	0	0	0
11-9051	Food Service Managers	5	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
11-9030	Education Administrators	7	Bachelor's degree	0	**0**	0	0	0	0	0	0
11-9013	Farmers, Ranchers, and Other Agricultural Managers	15	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
11-3031	Financial Managers	5	Bachelor's degree	40	**40**	0	0	0	0	0	40
11-2020	Marketing and Sales Managers	5	Bachelor's degree	0	**0**	0	0	0	0	0	0
11-1021	General and Operations Managers	28	Bachelor's degree	0	**0**	0	0	0	0	0	0

Source: Applied Development Economics, based on US Census ACS Public Use Microdata 2012-2014 from iPUMS and EMSI

Appendix Table 16 Part Time Labor Force-to-Job Openings Skills Match (Labor Force: Persons 16 and Over)

OCCSOC	Occupation	Annual Openings	Required Education for Openings	Part-Time in Target Occupa-tions	Part-Time LF Whose Credentials Match Occupational Requirement	01 < HS\ GED	02 HS\GED	03 Some College-OUT	04 Some College-Attending	05 AA	06 BA or up
		2,634		**26,581**	**13,002**	**7,546**	**6,112**	**5,227**	**3,364**	**1,375**	**2,956**
53-7064	Packers and Packagers, Hand	49	Less than high school	435	**142**	128	15	183	110	0	0
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	56	Less than high school	918	**683**	229	454	110	42	33	50
53-7061	Cleaners of Vehicles and Equipment	7	Less than high school	289	**244**	86	158	34	0	0	11
53-7051	Industrial Truck and Tractor Operators	18	Less than high school	376	**324**	171	153	51	0	0	0
53-3030	Driver/Sales Workers and Truck Drivers	80	High school diploma or equivalent	875	**505**	358	335	171	0	0	12
53-3020	Bus Drivers	21	High school diploma or equivalent	176	**119**	40	0	119	0	17	0
53-1000	Supervisors of Transportation and Material Moving Workers	7	High school diploma or equivalent	103	**103**	0	103	0	0	0	0
51-9198	Helpers--Production Workers	6	Less than high school	0	**0**	0	0	0	0	0	0
51-9111	Packaging and Filling Machine Operators and Tenders	36	High school diploma or equivalent	357	**126**	231	126	0	0	0	0
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	16	High school diploma or equivalent	71	**0**	47	0	0	0	25	0
51-9010	Chemical Processing Machine Setters, Operators, and Tenders	7	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
51-8031	Water and Wastewater Treatment Plant and System Operators	5	High school diploma or equivalent	0	**0**	0	0	0	0	0	0

OCCSOC	Occupation	Annual Openings	Required Education for Openings	Part-Time in Target Occupa-tions	Part-Time LF Whose Credentials Match Occupational Requirement	01 < HS\ GED	02 HS\GED	03 Some College-OUT	04 Some College-Attending	05 AA	06 BA or up
51-4120	Welding, Soldering, and Brazing Workers	7	High school diploma or equivalent	64	**48**	0	48	0	0	0	16
51-3092	Food Batchmakers	12	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
51-3020	Butchers and Other Meat, Poultry, and Fish Processing Workers	49	Less than high school	87	**87**	87	0	0	0	0	0
51-2090	Miscellaneous Assemblers and Fabricators	9	High school diploma or equivalent	65	**17**	48	0	17	0	0	0
51-1011	First-Line Supervisors of Production and Operating Workers	10	Postsecondary non-degree award	31	**0**	0	31	0	0	0	0
49-9071	Maintenance and Repair Workers, General	25	High school diploma or equivalent	31	**0**	0	0	0	31	0	0
49-904X	Industrial and Refractory Machinery Mechanic	23	High school diploma or equivalent	41	**25**	0	25	0	16	0	0
49-3090	Miscellaneous Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	5	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	6	High school diploma or equivalent	19	**19**	0	19	0	0	0	0
49-3023	Automotive Service Technicians and Mechanics	8	High school diploma or equivalent	115	**104**	0	78	27	0	11	0
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	8	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
47-2150	Pipelayers, Plumbers, Pipefitters, and Steamfitters	5	Less than high school	201	**135**	18	117	66	0	0	0

OCCSOC	Occupation	Annual Openings	Required Education for Openings	Part-Time in Target Occupa-tions	Part-Time LF Whose Credentials Match Occupational Requirement	01 < HS\ GED	02 HS\GED	03 Some College-OUT	04 Some College-Attending	05 AA	06 BA or up
47-207X	Construction equipment operators except paving, surfacing, and tamping equipment operators	6	High school diploma or equivalent	50	**11**	39	11	0	0	0	0
47-2061	Construction Laborers	12	Less than high school	612	**525**	203	322	87	0	0	0
47-2031	Carpenters	5	High school diploma or equivalent	318	**84**	217	14	70	0	17	0
45-20XX	Miscellaneous agricultural workers including animal breeders	416	High school diploma or equivalent	3,836	**513**	3,265	216	297	22	36	0
45-2041	Graders and Sorters, Agricultural Products	25	Less than high school	299	**238**	189	49	61	0	0	0
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	12	High school diploma or equivalent	9	**0**	9	0	0	0	0	0
43-9XXX	Miscellaneous office and administrative support workers including desktop publishers	11	High school diploma or equivalent	90	**69**	0	42	27	0	0	21
43-9061	Office Clerks, General	36	High school diploma or equivalent	440	**137**	26	64	73	55	21	201
43-6010	Secretaries and Administrative Assistants	34	High school diploma or equivalent	617	**345**	23	107	238	82	78	89
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	6	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
43-5081	Stock Clerks and Order Fillers	57	Less than high school	531	**329**	94	235	171	0	0	31
43-5071	Shipping, Receiving, and Traffic Clerks	16	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
43-5052	Postal Service Mail Carriers	5	High school diploma or	63	**63**	0	0	63	0	0	0

			equivalent								
OCCSOC	**Occupation**	**Annual Openings**	**Required Education for Openings**	**Part-Time in Target Occupa-tions**	**Part-Time LF Whose Credentials Match Occupational Requirement**	**01 < HS\ GED**	**02 HS\GED**	**03 Some College-OUT**	**04 Some College-Attending**	**05 AA**	**06 BA or up**
43-4171	Receptionists and Information Clerks	16	High school diploma or equivalent	192	**146**	0	69	77	46	0	0
43-4111	Interviewers, Except Eligibility and Loan	8	High school diploma or equivalent	34	**34**	0	34	0	0	0	0
43-4051	Customer Service Representatives	51	High school diploma or equivalent	1,080	**873**	64	506	367	127	16	0
43-3071	Tellers	17	High school diploma or equivalent	111	**99**	0	53	46	0	11	0
43-3051	Payroll and Timekeeping Clerks	5	High school diploma or equivalent	4	**4**	0	0	4	0	0	0
43-3031	Bookkeeping, Accounting, and Auditing Clerks	16	High school diploma or equivalent	45	**28**	0	22	6	4	13	0
43-3021	Billing and Posting Clerks	8	High school diploma or equivalent	38	**0**	0	0	0	38	0	0
43-1011	First-Line Supervisors of Office and Administrative Support Workers	27	High school diploma or equivalent	37	**19**	0	0	19	0	18	0
41-9041	Telemarketers	5	Less than high school	50	**50**	50	0	0	0	0	0
41-4010	Sales Representatives, Wholesale and Manufacturing	13	Bachelor's degree	0	**0**	0	0	0	0	0	0
41-3099	Sales Representatives, Services, All Other	10	High school diploma or equivalent	22	**0**	0	0	0	0	0	22
41-2031	Retail Salespersons	121	Less than high school	1,174	**197**	25	172	431	480	23	44
41-2021	Counter and Rental	8	Less than	0	**0**	0	0	0	0	0	0

	Clerks		high school								
41-2010	Cashiers	162	Less than high school	1,557	**331**	84	247	212	601	162	251
OCCSOC	**Occupation**	**Annual Openings**	**Required Education for Openings**	**Part-Time in Target Occupa-tions**	**Part-Time LF Whose Credentials Match Occupational Requirement**	**01 < HS\ GED**	**02 HS\GED**	**03 Some College-OUT**	**04 Some College-Attending**	**05 AA**	**06 BA or up**
41-1011	First-Line Supervisors of Retail Sales Workers	28	High school diploma or equivalent	359	**297**	0	84	213	0	7	56
39-9021	Personal Care Aides	59	Less than high school	735	**362**	197	165	192	59	83	38
39-9011	Childcare Workers	19	High school diploma or equivalent	428	**136**	140	88	48	113	21	18
39-5012	Hairdressers, Hairstylists, and Cosmetologists	5	Postsecondary non-degree award	13	**0**	13	0	0	0	0	0
39-3090	Miscellaneous Entertainment Attendants and Related Workers	8	Less than high school	101	**0**	0	0	0	101	0	0
37-3010	Grounds Maintenance Workers	14	Less than high school	412	**323**	323	0	67	22	0	0
37-2012	Maids and Housekeeping Cleaners	12	Less than high school	477	**410**	290	121	67	0	0	0
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Grounds keeping Workers	24	Less than high school	0	**0**	0	0	0	0	0	0
35-9031	Host and Hostesses, Restaurant, Lounge, and Coffee Shop	10	Less than high school	83	**55**	22	33	8	20	0	0
35-9021	Dishwashers	11	Less than high school	292	**161**	42	119	36	94	0	0
35-3031	Waiters and Waitresses	33	Less than high school	861	**349**	18	331	233	222	57	0
35-3022	Counter Attendant, Cafeteria, Food Concession, and Coffee Shop	9	Less than high school	0	**0**	0	0	0	0	0	0

35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	157	Less than high school	131	**33**	0	33	63	36	0	0

OCCSOC	Occupation	Annual Openings	Required Education for Openings	Part-Time in Target Occupa-tions	Part-Time LF Whose Credentials Match Occupational Requirement	01 < HS\ GED	02 HS\GED	03 Some College-OUT	04 Some College-Attending	05 AA	06 BA or up
35-3011	Bartenders	7	Less than high school	68	**0**	0	0	68	0	0	0
35-2021	Food Preparation Workers	15	Less than high school	373	**163**	62	101	103	64	0	43
35-2010	Cooks	55	Less than high school	1,310	**918**	412	506	193	171	0	29
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	30	High school diploma or equivalent	48	**38**	0	38	0	0	0	10
33-909X	Lifeguards and Other Protective Service Workers	10	High school diploma or equivalent	136	**0**	0	0	0	136	0	0
33-3050	Police Officers	18	High school diploma or equivalent	59	**0**	0	0	0	43	16	0
33-3010	Bailiffs, Correctional Officers, and Jailers	10	High school diploma or equivalent	0	**0**	0	0	0	0	0	0
33-2011	Firefighters	8	Postsecondary non-degree award	0	**0**	0	0	0	0	0	0
31-9092	Medical Assistants	17	Postsecondary non-degree award	164	**56**	0	46	56	63	0	0
31-9091	Dental Assistants	5	Postsecondary non-degree award	117	**94**	0	23	94	0	0	0
31-1010	Nursing, Psychiatric, and Home Health Aides	46	Less than high school	342	**90**	65	24	107	81	0	64
29-2061	Licensed Practical and Licensed Vocational Nurses	15	Postsecondary non-degree award	96	**33**	19	0	33	0	44	0
29-2050	Health Diagnosing and Treating Practitioner Support Technicians	6	Associate's degree	0	**0**	0	0	0	0	0	0
29-2041	Emergency Medical Technicians and	6	Postsecondary non-degree	0	**0**	0	0	0	0	0	0

	Paramedics		award								
OCCSOC	**Occupation**	**Annual Openings**	**Required Education for Openings**	**Part-Time in Target Occupa-tions**	**Part-Time LF Whose Credentials Match Occupational Requirement**	**01 < HS\ GED**	**02 HS\GED**	**03 Some College-OUT**	**04 Some College-Attending**	**05 AA**	**06 BA or up**
29-1141	Nurse Practitioners, and Nurse Midwives	29	Associate's degree	405	**275**	0	0	0	0	275	129
29-1051	Pharmacists	5	Doctoral or professional degree	0	**0**	0	0	0	0	0	0
25-9041	Teacher Assistants	46	Some college, no degree	969	**507**	0	272	299	208	101	90
25-3000	Other Teachers and Instructors	24	Bachelor's degree	407	**178**	0	57	72	81	18	178
25-2030	Secondary School Teachers	30	Bachelor's degree	191	**169**	0	0	0	22	0	169
25-2020	Elementary and Middle School Teachers	74	Bachelor's degree	1,016	**860**	0	0	0	0	156	860
25-2010	Preschool and Kindergarten Teachers	18	Associate's degree	126	**16**	0	0	0	72	16	38
25-1000	Postsecondary Teachers	47	Doctoral or professional degree	352	**340**	0	0	0	0	12	340
21-1093	Social and Human Service Assistants	14	High school diploma or equivalent	91	**91**	0	30	62	0	0	0
21-1020	Social Workers	7	Bachelor's degree	28	**0**	0	0	0	10	18	0
21-1010	Counselors	8	High school diploma or equivalent	53	**0**	0	0	0	0	0	53
19-40YY	Miscellaneous Life, Physical, and Social Science Technicians, Including Social Science Research Assistants	13	Associate's degree	0	**0**	0	0	0	0	0	0
13-2011	Accountants and Auditors	14	Bachelor's degree	114	**74**	0	0	40	0	0	74
13-1199	Business Operations Specialists, All Other	6	High school diploma or	0	**0**	0	0	0	0	0	0

			equivalent								
13-1111	Management Analysts	6	Bachelor's degree	33	**0**	0	27	6	0	0	0
OCCSOC	**Occupation**	**Annual Openings**	**Required Education for Openings**	**Part-Time in Target Occupa-tions**	**Part-Time LF Whose Credentials Match Occupational Requirement**	**01 < HS\ GED**	**02 HS\GED**	**03 Some College-OUT**	**04 Some College-Attending**	**05 AA**	**06 BA or up**
11-9111	Medical and Health Services Managers	5	Bachelor's degree	0	**0**	0	0	0	0	0	0
11-9051	Food Service Managers	5	High school diploma or equivalent	146	**37**	109	37	0	0	0	0
11-9030	Education Administrators	7	Bachelor's degree	289	**20**	18	62	79	82	29	20
11-9013	Farmers, Ranchers, and Other Agricultural Managers	15	High school diploma or equivalent	243	**140**	85	92	48	13	5	0
11-3031	Financial Managers	5	Bachelor's degree	39	**0**	0	0	0	0	39	0
11-2020	Marketing and Sales Managers	5	Bachelor's degree	0	**0**	0	0	0	0	0	0
11-1021	General and Operations Managers	28	Bachelor's degree	13	**0**	0	0	13	0	0	0

Source: Applied Development Economics, based on US Census ACS Public Use Microdata 2012-2014 from iPUMS and EMSI

DETAILED MERCED COUNTY LABOR FORCE CHARACTERISTICS

Appendix Table 17 Population By Age, Race\Ethnicity, and Educational Attainment Merced County (All Ages)

	0-15	16-19	20-24	25-29	30-34	35-54	55-64	65+	Total
Total	**71,334**	**18,773**	**21,597**	**18,483**	**17,871**	**63,944**	**24,992**	**27,169**	**264,162**
White	**13,232**	**3,956**	**4,816**	**4,693**	**4,678**	**20,407**	**11,961**	**15,300**	**79,043**
Did not earn HSD\GED	10,899	2,160	438	277	487	2,145	1,597	2,636	20,640
HSD\GED		861	1,418	1,440	669	6,051	3,356	4,857	18,651
Some college -- not attending		8	890	979	1,338	5,821	3,220	3,797	16,053
Some college -- attending		926	1,747	383	376	353	31	45	3,862
AA			104	208	739	1,790	1,444	1,004	5,288
BA+			220	1,406	1,068	4,247	2,314	2,962	12,217
NA	2,332								2,332
Latino	**49,390**	**11,468**	**13,583**	**11,517**	**10,657**	**35,280**	**9,759**	**8,226**	**149,879**
Did not earn HSD\GED	40,631	6,858	1,380	3,293	4,754	18,277	5,715	5,234	86,143
HSD\GED		1,392	4,073	4,145	2,333	7,451	1,557	1,221	22,172
Some college -- not attending		353	2,653	2,343	1,691	6,082	1,475	1,200	15,798
Some college -- attending		2,865	4,311	529	827	185	38		8,755
AA			696	549	357	1,577	505	394	4,078
BA+			469	658	694	1,708	468	178	4,176
NA	8,759								8,759
Other	**8,713**	**3,349**	**3,198**	**2,273**	**2,536**	**8,257**	**3,272**	**3,643**	**35,240**
Did not earn HSD\GED	7,567	1,358	326	147	244	1,352	680	1,415	13,089
HSD\GED		568	760	627	869	2,048	925	664	6,460
Some college -- not attending		176	366	248	444	2,172	571	631	4,608
Some college -- attending		1,128	1,462	103	98	201	17	14	3,023
AA		119	134	176	349	718	522	264	2,281
BA+			151	971	532	1,766	557	656	4,632
NA	1,146								1,146

Appendix Table 18 Labor Force by Age, Race\Ethnicity, and Educational Attainment (Persons 16 and Over)

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Total
Total	**5,293**	**15,366**	**14,183**	**14,046**	**48,530**	**13,077**	**4,154**	**114,650**
White	**1,244**	**3,191**	**3,993**	**4,017**	**15,427**	**6,332**	**2,427**	**36,631**
Did not earn HSD\GED	163	170	121	426	1,145	685	124	**2,834**
HSD\GED	705	902	1,053	545	4,341	1,603	521	**9,670**
Some college -- not attending	8	890	884	1,046	4,267	1,588	538	**9,222**
Some college -- attending	367	1,018	365	329	181	31	0	**2,291**
AA	0	70	174	645	1,481	811	332	**3,513**
BA+	0	142	1,397	1,025	4,012	1,613	912	**9,101**
Latino	**3,035**	**10,367**	**8,329**	**8,291**	**27,418**	**5,234**	**1,295**	**63,970**
Did not earn HSD\GED	723	843	2,030	3,493	12,871	2,790	779	**23,529**
HSD\GED	694	3,323	2,851	1,938	6,169	896	232	**16,103**
Some college -- not attending	335	2,317	2,043	1,290	5,292	807	146	**12,230**
Some college -- attending	1,283	3,159	478	608	153	0	0	**5,682**
AA	0	435	269	268	1,353	322	109	**2,756**
BA+	0	290	658	694	1,581	418	29	**3,670**
Other	**1,014**	**1,808**	**1,860**	**1,738**	**5,685**	**1,512**	**432**	**14,049**
Did not earn HSD\GED	187	215	83	45	706	204	227	**1,666**
HSD\GED	236	435	515	383	1,343	537	32	**3,481**
Some college -- not attending	119	315	135	368	1,459	279	46	**2,721**
Some college -- attending	472	569	103	98	201	0	0	**1,444**
AA	0	123	150	349	504	163	32	**1,320**
BA+	0	151	874	494	1,472	329	95	**3,416**

Source: Applied Development Economics, based on US Census ACS Public Use Microdata 2012-2014 from iPUMS

Appendix Table 19 Employed Labor Force by Age, Race\Ethnicity, and Educational Attainment (Persons 16 and Over)

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Total
Total	**2,776**	**10,748**	**11,589**	**11,642**	**42,874**	**11,943**	**3,564**	**95,137**
White	**630**	**2,399**	**3,344**	**3,454**	**14,258**	**6,083**	**2,292**	**32,461**
Did not earn HSD\GED	145	72	121	346	1,003	685	96	**2,468**
HSD\GED	283	786	741	496	3,800	1,603	521	**8,230**
Some college -- not attending	8	553	832	817	3,984	1,493	528	**8,215**
Some college -- attending	193	790	241	242	148	31	0	**1,645**
AA	0	57	165	619	1,366	776	278	**3,261**
BA+	0	142	1,244	934	3,958	1,495	870	**8,642**
NA	0	0	0	0	0	0	0	**0**
Latino	**1,648**	**7,212**	**6,782**	**6,802**	**23,752**	**4,607**	**885**	**51,687**
Did not earn HSD\GED	405	445	1,629	2,836	10,835	2,446	399	**18,995**
HSD\GED	325	2,553	1,985	1,654	5,245	649	232	**12,643**
Some college -- not attending	335	1,862	1,905	1,154	4,864	771	124	**11,015**
Some college -- attending	583	1,848	458	380	98	0	0	**3,367**
AA	0	214	171	189	1,312	322	101	**2,308**
BA+	0	290	634	590	1,398	418	29	**3,359**
NA	0	0	0	0	0	0	0	**0**
Other	**498**	**1,136**	**1,463**	**1,386**	**4,865**	**1,253**	**387**	**10,989**
Did not earn HSD\GED	71	125	0	45	606	173	227	**1,247**
HSD\GED	156	422	458	224	1,076	449	32	**2,817**
Some college -- not attending	119	273	64	250	1,372	171	19	**2,268**
Some college -- attending	153	131	0	67	124	0	0	**476**
AA	0	91	150	323	477	147	32	**1,221**
BA+	0	93	791	476	1,210	313	78	**2,961**
NA	0	0	0	0	0	0	0	**0**

Source: ADE Inc., based on US Census ACS PUMS 2012-2014 from iPUMS

Appendix Table 20 Full-Time Employed Labor Force by Age, Race\Ethnicity, and Educational Attainment (Persons 16 and Over) Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Total
Total	**371**	**3,881**	**7,815**	**8,646**	**30,411**	**8,686**	**1,880**	**61,691**
White	**64**	**634**	**2,468**	**2,447**	**11,016**	**4,666**	**1,219**	**22,514**
Did not earn HSD\GED	0	72	121	346	761	528	25	**1,853**
HSD\GED	64	325	624	415	3,094	1,148	229	**5,900**
Some college -- not attending	0	116	575	496	3,096	1,272	314	**5,868**
Some college -- attending	0	84	143	22	11	31	0	**291**
AA	0	0	45	572	1,057	636	150	**2,460**
BA+	0	36	960	596	2,998	1,052	500	**6,142**
Latino	**188**	**2,868**	**4,402**	**5,124**	**15,981**	**3,263**	**471**	**32,297**
Did not earn HSD\GED	38	286	1,120	1,967	6,108	1,545	260	**11,325**
HSD\GED	47	1,269	1,335	1,352	3,944	388	125	**8,459**
Some college -- not attending	73	808	1,271	892	3,703	684	58	**7,489**
Some college -- attending	30	214	248	280	0	0	0	**773**
AA	0	160	104	146	1,102	284	0	**1,797**
BA+	0	130	323	486	1,124	362	29	**2,454**
Other	**119**	**380**	**945**	**1,075**	**3,414**	**757**	**190**	**6,880**
Did not earn HSD\GED	0	125	0	45	390	76	100	**737**
HSD\GED	0	152	222	129	936	252	0	**1,692**
Some college -- not attending	119	78	38	250	905	30	10	**1,429**
Some college -- attending	0	0	0	17	124	0	0	**141**
AA	0	0	86	323	217	143	32	**801**
BA+	0	24	599	310	841	257	48	**2,079**

Source: Applied Development Economics, based on US Census ACS Public Use Microdata 2012-2014 from iPUMS

Appendix Table 21 Employed Labor Force by Age, Gender, and Educational Attainment (Persons 16 and Over) Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Total
Total	**2,776**	**10,748**	**11,589**	**11,642**	**42,874**	**11,943**	**3,564**	**95,137**
Men	1,662	5,950	6,722	7,021	24,628	6,499	1,795	54,278
Did not earn HSD\GED	473	582	1,376	2,756	8,391	2,175	483	16,237
HSD\GED	554	2,693	2,428	1,487	6,400	1,754	435	15,751
Some college -- not attending	267	1,039	1,604	1,123	5,017	1,148	336	10,533
Some college -- attending	368	1,302	205	97	98	0	0	2,070
AA	0	214	158	819	1,489	678	98	3,457
BA+	0	120	950	739	3,233	744	444	6,230
NA	0	0	0	0	0	0	0	0
Women	1,114	4,797	4,868	4,621	18,246	5,444	1,769	40,859
Did not earn HSD\GED	148	61	374	471	4,053	1,128	239	6,474
HSD\GED	210	1,068	756	887	3,720	947	349	7,938
Some college -- not attending	195	1,649	1,198	1,097	5,202	1,287	335	10,964
Some college -- attending	561	1,468	494	592	272	31	0	3,417
AA	0	147	327	313	1,666	568	313	3,333
BA+	0	405	1,719	1,261	3,333	1,482	533	8,733
NA	0	0	0	0	0	0	0	0

Source: ADE, Inc. based on US Census ACS 2012-2014 PUMS from iPUMS

Appendix Table 22 Full-Time Employed Labor Force by Age, Gender, and Educational Attainment (Persons 16 and Over) Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Total
Total	**371**	**3,881**	**7,815**	**8,646**	**30,411**	**8,686**	**1,880**	**61,691**
Men	**303**	**2,985**	**4,753**	**5,624**	**18,496**	**5,015**	**1,126**	**38,301**
Did not earn HSD\GED	0	484	1,014	2,083	5,337	1,462	303	**10,682**
HSD\GED	111	1,435	1,537	1,197	5,306	1,384	291	**11,261**

Some college -- not attending	192	568	1,282	934	4,047	1,007	186	**8,215**
Some college -- attending	0	292	18	17	25	0	0	**352**
	16-19	**20-24**	**25-29**	**30-34**	**35-54**	**55-64**	**65+**	**Total**
AA	0	160	108	779	1,275	588	76	**2,987**
BA+	0	47	793	614	2,505	575	270	**4,804**
NA	0	0	0	0	0	0	0	**0**
Women	**68**	**896**	**3,063**	**3,022**	**11,916**	**3,671**	**754**	**23,390**
Did not earn HSD\GED	38	0	227	275	1,922	687	83	**3,233**
HSD\GED	0	312	644	700	2,669	403	64	**4,791**
Some college -- not attending	0	435	602	704	3,656	979	196	**6,571**
Some college -- attending	30	7	373	301	110	31	0	**852**
AA	0	0	127	263	1,101	474	106	**2,071**
BA+	0	143	1,089	779	2,458	1,096	306	**5,872**
NA	0	0	0	0	0	0	0	**0**

Source: ADE, Inc. based on US Census ACS 2012-2014 PUMS from iPUMS

Appendix Table 23 Part-Time Employed Labor Force by Age, Gender, and Educational Attainment (Persons 16 and Over) Merced County

	16-19	**20-24**	**25-29**	**30-34**	**35-54**	**55-64**	**65+**	**Total**
Total	**2,405**	**6,866**	**3,774**	**2,996**	**12,463**	**3,257**	**1,685**	**33,446**
Men	**1,359**	**2,965**	**1,969**	**1,397**	**6,133**	**1,484**	**670**	**15,977**
Did not earn HSD\GED	473	98	362	673	3,054	714	180	**5,554**
HSD\GED	443	1,259	891	290	1,094	370	145	**4,491**
Some college -- not attending	75	471	322	189	970	141	150	**2,318**
Some college -- attending	368	1,010	187	80	72	0	0	**1,718**
AA	0	54	50	39	214	90	22	**470**
BA+	0	74	157	125	728	169	173	**1,426**
NA	0	0	0	0	0	0	0	**0**
Women	**1,046**	**3,901**	**1,805**	**1,599**	**6,330**	**1,773**	**1,015**	**17,469**
Did not earn HSD\GED	110	61	147	196	2,130	441	156	**3,241**
HSD\GED	210	756	112	188	1,051	544	286	**3,147**
Some college -- not attending	195	1,214	596	393	1,546	308	139	**4,393**
Some college -- attending	531	1,461	120	291	162	0	0	**2,565**

AA	0	147	200	50	565	93	207	**1,262**
BA+	0	261	630	482	875	386	227	**2,861**
NA	0	0	0	0	0	0	0	**0**

Source: ADE, Inc. based on US Census ACS 2012-2014 PUMS from iPUMS

Appendix Table 24 Unemployed Labor Force by Age, Gender, and Educational Attainment (Persons 16 and Over): Merced County

	16-19	20-24	25-29	30-34	35-54	55-64	65+	Total
Total	**2,517**	**4,619**	**2,594**	**2,404**	**5,656**	**1,134**	**590**	**19,513**
Men	**1,441**	**2,623**	**1,776**	**1,356**	**2,707**	**561**	**423**	**10,887**
Did not earn HSD\GED	224	267	296	504	1,078	270	291	**2,929**
HSD\GED	326	489	1,007	253	792	164	0	**3,032**
Some college -- not attending	0	569	114	227	356	95	49	**1,409**
Some college -- attending	891	1,068	178	218	55	0	0	**2,409**
AA	0	230	98	45	110	4	23	**510**
BA+	0	0	83	110	316	29	59	**597**
Women	**1,076**	**1,996**	**818**	**1,048**	**2,949**	**573**	**167**	**8,627**
Did not earn HSD\GED	227	318	189	234	1,200	105	117	**2,390**
HSD\GED	545	410	228	239	940	172	0	**2,534**
Some college -- not attending	0	266	147	257	442	144	10	**1,266**
Some college -- attending	303	908	69	129	110	0	0	**1,519**
AA	0	37	9	85	73	46	39	**290**
BA+	0	57	177	104	184	106	0	**628**

Appendix Table 25 Population by Age, Disability Status, and Educational Attainment Merced County

	0-15	16-19	20-24	25-29	30-34	35-54	55-64	65+	Total
Total	**71,334**	**18,773**	**21,597**	**18,483**	**17,871**	**63,944**	**24,992**	**27,169**	**264,162**
No Reported Disability	**69,655**	**16,603**	**19,097**	**16,658**	**15,611**	**51,830**	**17,990**	**14,295**	**221,739**

Did not earn HSD\GED	57,418	9,236	1,629	3,139	4,574	17,042	5,340	4,050	**102,428**
HSD\GED		2,338	5,539	5,468	3,375	12,634	4,624	3,230	**37,209**
Some college -- not attending		480	3,529	3,386	3,017	11,002	3,439	3,270	**28,122**
Some college -- attending		4,430	6,686	937	1,166	720	47	45	**14,032**

	0-15	16-19	20-24	25-29	30-34	35-54	55-64	65+	Total
AA		119	934	831	1,309	3,412	1,769	1,115	**9,489**
BA+			781	2,897	2,170	7,019	2,771	2,585	**18,223**
NA	12,237								**12,237**
At Least One Disability	**1,679**	**2,170**	**2,500**	**1,825**	**2,260**	**12,114**	**7,001**	**12,874**	**42,423**
Did not earn HSD\GED	1,679	1,141	515	579	911	4,733	2,651	5,235	**17,444**
HSD\GED		482	712	744	496	2,916	1,213	3,512	**10,074**
Some college -- not attending		57	380	184	456	3,073	1,828	2,357	**8,336**
Some college -- attending		489	834	78	135	19	38	14	**1,608**
AA				102	137	672	702	546	**2,159**
BA+			59	138	125	702	568	1,210	**2,802**
NA									**0**

Source: Applied Development Economics, based on US Census ACS Public Use Microdata 2012-2014 from iPUMS

Appendix Table 26 Population by Age, Veteran Status, and Educational Attainment Merced County

	0-15	16-19	20-24	25-29	30-34	35-54	55-64	65+	Total
	71,334	**18,773**	**21,597**	**18,483**	**17,871**	**63,944**	**24,992**	**27,169**	**264,162**
Not Veterans	**0**	**14,242**	**21,516**	**18,266**	**17,405**	**61,507**	**22,127**	**21,801**	**176,865**
Did not earn HSD\GED		5,920	2,144	3,718	5,486	21,716	7,913	8,417	**55,313**
HSD\GED		2,763	6,201	6,152	3,819	15,211	5,233	5,544	**44,923**
Some college -- not attending		537	3,909	3,481	3,357	12,884	4,327	4,241	**32,736**
Some college -- attending		4,903	7,489	1,001	1,259	703	55	59	**15,470**
AA		119	934	879	1,264	3,767	1,746	1,066	**9,775**
BA+			840	3,035	2,220	7,227	2,853	2,474	**18,647**
NA									**0**
Veterans	**0**	**19**	**81**	**217**	**466**	**2,437**	**2,864**	**5,368**	**11,452**
Did not earn HSD\GED						58	78	867	**1,004**
HSD\GED		19	50	60	52	339	605	1,197	**2,321**
Some college -- not attending				88	116	1,191	940	1,387	**3,722**

Some college -- attending			31	15	42	36	31		**154**
	0-15	**16-19**	**20-24**	**25-29**	**30-34**	**35-54**	**55-64**	**65+**	**Total**
AA				54	182	318	725	595	**1,873**
BA+					75	495	486	1,322	**2,378**
NA									**0**
Ineligible (i.e. youth < 17)	**71,334**	**4,512**	**0**	**0**	**0**	**0**	**0**	**0**	**75,846**
Did not earn HSD\GED	59,097	4,457							**63,554**
HSD\GED		39							**39**
Some college -- not attending									**0**
Some college -- attending		16							**16**
AA									**0**
BA+									**0**
NA	12,237								**12,237**

Source: Applied Development Economics, based on US Census ACS Public Use Microdata 2012-2014 from iPUMS

UNEMPLOYED AND PART-TIME LABOR FORCE BY BROAD OCCUPATIONAL CATEGORIES (MANAGER, SPECIALISTS, AND SUPPORT) (PERSONS 16 AND OVER)

Appendix Table 27 Part-Time Employed Labor Force By Broad Occupation Categories, Educational Attainment and Management Status

		Managers					
Broad Occupational Categories	**Total**	**Sub-Total**	**<HS**	**HS**	**Some Coll OUT**	**Some Coll IN**	**AA**
	33,446	**2,102**	415	556	559	114	133
11 Management Occupations	**1,341**	**1,341**	407	245	251	94	108
13 Business Operations Specialists	**286**	**0**	0	0	0	0	0
13 Financial Specialists	**299**	**0**	0	0	0	0	0
15 Computer and Mathematical Occupations	**176**	**0**	0	0	0	0	0
17 Architecture and Engineering Occupations	**0**	**0**	0	0	0	0	0
19 Life, Physical, and Social Science Occupations	**139**	**0**	0	0	0	0	0
21 Community and Social Science Occupations	**3,418**	**0**	0	0	0	0	0
27 Arts, Design, Entertainment, Sports, and Media Occupations	**296**	**0**	0	0	0	0	0
29 Healthcare Practitioners and Technical Occupations	**831**	**22**	0	0	0	0	0
31 Healthcare Support Occupations	**772**	**0**	0	0	0	0	0
33 Protective Service Occupations	**332**	**18**	0	18	0	0	0
35 Food Preparation and Serving Occupations	**3,723**	**64**	0	38	16	0	0
37 Building and Ground Cleaning and Maintenance Occupations	**1,251**	**25**	0	25	0	0	0
39 Personal Care and Service Occupations	**1,669**	**20**	0	0	0	20	0
41 Sales Occupations	**3,695**	**417**	0	97	258	0	7
43 Office and Administrative Support Occupations	**3,940**	**37**	0	0	19	0	18
45 Farming, Fishing, and Forestry Occupations	**4,161**	**9**	9	0	0	0	0
47 Construction Trades	**1,725**	**16**	0	0	16	0	0
47 Extraction Workers	**40**	**0**	0	0	0	0	0
49 Installation, Maintenance, and Repair Workers	**260**	**0**	0	0	0	0	0
51 Production Occupations	**1,403**	**31**	0	31	0	0	0
53 Transportation and Material Moving Occupations	**3,689**	**103**	0	103	0	0	0

Source: Applied Development Economics, based on US Census ACS Public Use Microdata 2012-2014 from iPUMS (Note: Data colum for "BA and higher" not included, though sub-total includes this labor force).

Broad Occupational Categories	Specialists					
	Sub-Total	<HS	HS	Some Coll OUT	Some Coll IN	AA
	13,920	**3,110**	**3,531**	**2,244**	**1,157**	**889**
11 Management Occupations	**0**	0	0	0	0	0
13 Business Operations Specialists	**286**	0	27	150	52	22
13 Financial Specialists	**299**	0	0	133	45	0
15 Computer and Mathematical Occupations	**176**	0	0	35	14	0
17 Architecture and Engineering Occupations	**0**	0	0	0	0	0
19 Life, Physical, and Social Science Occupations	**139**	22	0	53	0	0
21 Community and Social Science Occupations	**2,449**	0	87	176	185	235
27 Arts, Design, Entertainment, Sports, and Media Occupations	**296**	37	0	45	30	80
29 Healthcare Practitioners and Technical Occupations	**809**	19	0	84	0	367
31 Healthcare Support Occupations	**0**	0	0	0	0	0
33 Protective Service Occupations	**195**	0	0	0	180	16
35 Food Preparation and Serving Occupations	**1,751**	474	607	364	234	0
37 Building and Ground Cleaning and Maintenance Occupations	**0**	0	0	0	0	0
39 Personal Care and Service Occupations	**196**	13	82	0	68	0
41 Sales Occupations	**366**	0	141	38	21	0
43 Office and Administrative Support Occupations	**12**	0	0	12	0	0
45 Farming, Fishing, and Forestry Occupations	**17**	0	0	17	0	0
47 Construction Trades	**1,709**	701	678	260	0	17
47 Extraction Workers	**40**	0	10	30	0	0
49 Installation, Maintenance, and Repair Workers	**221**	0	137	27	47	11
51 Production Occupations	**1,372**	629	471	65	78	92
53 Transportation and Material Moving Occupations	**3,586**	1,216	1,291	755	203	49

Source: Applied Development Economics, based on US Census ACS Public Use Microdata 2012-2014 from iPUMS (Note: Data colum for "BA and higher" not included, though sub-total includes this labor force).

	Support					
Broad Occupational Categories	**Sub-Total**	**<HS**	**HS**	**Some Coll OUT**	**Some Coll IN**	**AA**
	17,424	**5,269**	**3,550**	**3,908**	**3,013**	**710**
11 Management Occupations	**0**	0	0	0	0	0
13 Business Operations Specialists	**0**	0	0	0	0	0
13 Financial Specialists	**0**	0	0	0	0	0
15 Computer and Mathematical Occupations	**0**	0	0	0	0	0
17 Architecture and Engineering Occupations	**0**	0	0	0	0	0
19 Life, Physical, and Social Science Occupations	**0**	0	0	0	0	0
21 Community and Social Science Occupations	**969**	0	272	299	208	101
27 Arts, Design, Entertainment, Sports, and Media Occupations	**0**	0	0	0	0	0
29 Healthcare Practitioners and Technical Occupations	**0**	0	0	0	0	0
31 Healthcare Support Occupations	**772**	65	123	336	156	0
33 Protective Service Occupations	**119**	48	65	6	0	0
35 Food Preparation and Serving Occupations	**1,908**	151	653	404	616	57
37 Building and Ground Cleaning and Maintenance Occupations	**1,225**	741	245	167	22	50
39 Personal Care and Service Occupations	**1,453**	337	362	240	340	104
41 Sales Occupations	**2,911**	230	419	680	1,081	184
43 Office and Administrative Support Occupations	**3,891**	242	1,148	1,417	567	139
45 Farming, Fishing, and Forestry Occupations	**4,135**	3,455	264	359	22	36
47 Construction Trades	**0**	0	0	0	0	0
47 Extraction Workers	**0**	0	0	0	0	0
49 Installation, Maintenance, and Repair Workers	**39**	0	0	0	0	39
51 Production Occupations	**0**	0	0	0	0	0
53 Transportation and Material Moving Occupations	**0**	0	0	0	0	0

Source: Applied Development Economics, based on US Census ACS Public Use Microdata 2012-2014 from iPUMS (Note: Data colum for "BA and higher" not included, though sub-total includes this labor force).

Appendix Table 28 Unemployed Labor Force by Broad Occupation Categories, Educational Attainment and Management Status (excluding Long-Term Unemployed) (Persons 16 and Over)

		Managers					
Broad Occupational Categories	**Total**	**Sub-Total**	**<HS**	**HS**	**Some Coll OUT**	**Some Coll IN**	**AA**
	15,182	**404**	**0**	**276**	**127**	**0**	**0**
11 Management Occupations	**190**	**190**	0	137	0	0	0
13 Business Operations Specialists	**59**	**0**	0	0	0	0	0
13 Financial Specialists	**21**	**0**	0	0	0	0	0
15 Computer and Mathematical Occupations	**71**	**0**	0	0	0	0	0
17 Architecture and Engineering Occupations	**55**	**0**	0	0	0	0	0
19 Life, Physical, and Social Science Occupations	**99**	**0**	0	0	0	0	0
21 Community and Social Science Occupations	**549**	**0**	0	0	0	0	0
27 Arts, Design, Entertainment, Sports, and Media Occupations	**172**	**0**	0	0	0	0	0
29 Healthcare Practitioners and Technical Occupations	**330**	**0**	0	0	0	0	0
31 Healthcare Support Occupations	**172**	**0**	0	0	0	0	0
33 Protective Service Occupations	**67**	**0**	0	0	0	0	0
35 Food Preparation and Serving Occupations	**1,210**	**43**	0	17	26	0	0
37 Building and Ground Cleaning and Maintenance Occupations	**914**	**0**	0	0	0	0	0
39 Personal Care and Service Occupations	**484**	**0**	0	0	0	0	0
41 Sales Occupations	**1,680**	**147**	0	34	79	0	0
43 Office and Administrative Support Occupations	**1,432**	**171**	0	88	22	0	0
45 Farming, Fishing, and Forestry Occupations	**2,991**	**0**	0	0	0	0	0
47 Construction Trades	**1,273**	**0**	0	0	0	0	0
47 Extraction Workers	**45**	**0**	0	0	0	0	0
49 Installation, Maintenance, and Repair Workers	**333**	**0**	0	0	0	0	0
51 Production Occupations	**1,223**	**0**	0	0	0	0	0
53 Transportation and Material Moving Occupations	**1,812**	**0**	0	0	0	0	0
55 Military Specific Occupations	**0**	**0**	0	0	0	0	0

Source: Applied Development Economics, based on US Census ACS Public Use Microdata 2012-2014 from iPUMS (Note: Data colum for "BA and higher" not included, though sub-total includes this labor force).

	Specialists					
Broad Occupational Categories	**Sub-Total**	**<HS**	**HS**	**Some Coll OUT**	**Some Coll IN**	**AA**
	6,138	**1,825**	**1,825**	**1,045**	**943**	**499**
11 Management Occupations	**0**	0	0	0	0	0
13 Business Operations Specialists	**59**	0	27	22	0	9
13 Financial Specialists	**21**	0	0	21	0	0
15 Computer and Mathematical Occupations	**71**	0	35	0	0	36
17 Architecture and Engineering Occupations	**55**	0	0	0	0	26
19 Life, Physical, and Social Science Occupations	**99**	21	59	0	0	19
21 Community and Social Science Occupations	**448**	16	29	105	68	25
27 Arts, Design, Entertainment, Sports, and Media Occupations	**172**	18	0	0	77	22
29 Healthcare Practitioners and Technical Occupations	**330**	0	12	73	144	13
31 Healthcare Support Occupations	**0**	0	0	0	0	0
33 Protective Service Occupations	**0**	0	0	0	0	0
35 Food Preparation and Serving Occupations	**563**	31	267	26	152	19
37 Building and Ground Cleaning and Maintenance Occupations	**0**	0	0	0	0	0
39 Personal Care and Service Occupations	**70**	0	0	0	70	0
41 Sales Occupations	**153**	0	13	45	73	0
43 Office and Administrative Support Occupations	**0**	0	0	0	0	0
45 Farming, Fishing, and Forestry Occupations	**0**	0	0	0	0	0
47 Construction Trades	**1,273**	697	93	127	80	237
47 Extraction Workers	**45**	17	28	0	0	0
49 Installation, Maintenance, and Repair Workers	**311**	98	75	35	103	0
51 Production Occupations	**1,223**	347	603	235	38	0
53 Transportation and Material Moving Occupations	**1,812**	581	584	356	138	93
55 Military Specific Occupations	**0**	0	0	0	0	0

Source: Applied Development Economics, based on US Census ACS Public Use Microdata 2012-2014 from iPUMS (Note: Data colum for

"BA and higher" not included, though sub-total includes this labor force).

	Support					
Broad Occupational Categories	**Sub-Total**	**<HS**	**HS**	**Some Coll OUT**	**Some Coll IN**	**AA**
	7,490	**2,520**	**2,334**	**1,006**	**1,438**	**192**
11 Management Occupations	**0**	0	0	0	0	0
13 Business Operations Specialists	**0**	0	0	0	0	0
13 Financial Specialists	**0**	0	0	0	0	0
15 Computer and Mathematical Occupations	**0**	0	0	0	0	0
17 Architecture and Engineering Occupations	**0**	0	0	0	0	0
19 Life, Physical, and Social Science Occupations	**0**	0	0	0	0	0
21 Community and Social Science Occupations	**101**	0	19	0	41	41
27 Arts, Design, Entertainment, Sports, and Media Occupations	**0**	0	0	0	0	0
29 Healthcare Practitioners and Technical Occupations	**0**	0	0	0	0	0
31 Healthcare Support Occupations	**172**	19	35	75	19	23
33 Protective Service Occupations	**67**	67	0	0	0	0
35 Food Preparation and Serving Occupations	**605**	0	120	199	286	0
37 Building and Ground Cleaning and Maintenance Occupations	**914**	400	302	56	156	0
39 Personal Care and Service Occupations	**414**	61	125	137	0	4
41 Sales Occupations	**1,380**	45	383	193	614	20
43 Office and Administrative Support Occupations	**1,261**	198	319	268	171	104
45 Farming, Fishing, and Forestry Occupations	**2,991**	1,731	1,031	54	151	0
47 Construction Trades	**0**	0	0	0	0	0
47 Extraction Workers	**0**	0	0	0	0	0
49 Installation, Maintenance, and Repair Workers	**22**	0	0	22	0	0
51 Production Occupations	**0**	0	0	0	0	0
53 Transportation and Material Moving Occupations	**0**	0	0	0	0	0
55 Military Specific Occupations	**0**	0	0	0	0	0

Source: Applied Development Economics, based on US Census ACS Public Use Microdata 2012-2014 from iPUMS (Note: Data colum for "BA and higher" not included, though sub-total includes this labor force).

Appendix Table 29 Long-Term Unemployed Labor Force By Educational Attainment (Persons 16 and Over)

	Total	<HS	HS	Some Coll OUT	Some Coll IN	AA	BA or up
Long-Term Unemployed persons	**4,331**	974	1,130	497	1,547	109	74

Source: Applied Development Economics, based on US Census ACS Public Use Microdata 2012-2014 from iPUMS

ATTACHMENT 2

MEMO

TO: Elaine Craig, Madera Workforce Development Board
Shermaene Roemhildt, Merced Workforce Development Board

FROM: Doug Svensson, AICP

DATE: December 5, 2016

SUBJECT: CCWC Regional Plan Narrative

As requested, we have prepared the following text to assist in the writing of the CCWC Regional Plan. We have copied the items David Shinder provided and have inserted narrative and references from the report where appropriate. Please let us know if anything further is needed.

A. Regional Economic and Background Analysis

i. Provide a regional analysis of economic conditions including existing and emerging in-demand industry sectors and occupations, and employment needs of employers in existing and emerging in-demand industry sectors and occupations. A local area may use an existing analysis, which is a timely current description of the regional economy, to meet the foregoing requirements.

The CCWC region has had a relatively slow recovery from the Great Recession. Before the recession, total jobs in the region peaked at 1,361,550 in 2007 and did not reach that level again until 2014. The annual average number of jobs in 2015 is estimated at 1,405,122. Through 2008, total jobs in the region were growing at a 1.4 annual percentage rate, while since 2008 the number of jobs has grown at a much lower 0.5 percent per year.

Farm employment, which constitutes 14 percent of total employment and is the largest industry cluster in the region, grew at a 2.2 percent annual rate between 2010 and 2015 but is projected to increase at a slower rate of 0.5 percent over the next ten years. Much of the agricultural job growth is projected in farm support (NAICS 115), especially from farm labor contractors (NAICS 115115). A number of factors affect farm employment including availability of water and continued mechanization of farming operations, accelerated by increased cost of labor due to the new state minimum wage.

Manufacturing industries in CCWC region are mainly in food processing. Manufacturing jobs increased by more than 5,100 jobs between 2010 and 2015, from 101,451 in 2010 to 105,607 in 2015. This sector is expected to slow its growth over the next ten years, adding about 7,000 jobs. Within

manufacturing, food processing (NAICS 311-312) is expected to increase annually by 0.8 percent between 2015 and 2025. Overall, food processing is projected to grow by more than 5,700 jobs in the coming ten years, led by food manufacturing industries such as animal slaughtering (NAICS 311611), meat processed from carcasses (NAICS 311612), perishable prepared foods (NAICS 311991) and wineries (NAICS 312130).

A number of non-food processing manufacturing industries are also projected to produce new jobs. Paint and coatings (NAICS 325510), plastics pipe and pipe fittings (NAICS 326122), urethane ad other foam products (NAICS 326150), glass products (NAICS 327215), fabricated structural metal (NAICS 332312) and search and detection instruments (NAICS 334511) are projected to have a combined growth of 1,825 jobs between 2015 and 2025.

Along with manufacturing and food production, the logistics sector is projected to add 22,000 jobs in the CCWC region between 2015 and 2025. This includes wholesale, warehousing and transportation jobs. Some of this growth reflects development of major consumer products wholesale distribution at both the northern and southern ends of the San Joaquin Valley serving the San Francisco and Los Angeles metropolitan areas.

The construction industry continued to grow coming out of the recession over the past five years, and is projected to grow over the next ten years as well. Residential construction (NAICS 236116), residential remodelers (NAICS 236118), electrical and plumbing specialties (NAICS 238210 and 238220) and water and sewer line construction (NAICS 237110) are expected to grow during this period, which is consistent with expected population growth for the region over the next ten years. In addition, the High Speed Rail (HSR) project and a variety of highway improvement projects are projected to add significant heavy construction jobs in the region. The HSR project is estimate to support an average of nearly 3,000 jobs over the ten year period to 2025, with peaks of 6,000 jobs during the height of construction.

The Health Services sector is projected to see strong employment growth over the next ten years. This is a consistent finding throughout the state as well as nationally and reflects both demographic trends with the aging Baby Boomer population as well as industry trends to institute managed care with more outpatient and home health care. Employment in Health Services is projected to grow to 241,950 in 2025 from 192,884 in 2015, for an annual rate of growth of 2.8 percent. Another population based trend is the increase in retail and food services jobs. Both these sectors have been recovering from the recession over the past five years, and are projected to see more moderate growth over the next ten years.

ii. Provide an analysis of the knowledge and skills needed to meet the employment needs of the employers in the region, including employment needs in in-demand industry sectors and occupations.

More than 51,200 average annual openings are projected between 2015 and 2025 (512,600 total openings), of which approximately 21,000 annual openings would be due to new job growth. The projections of job openings show a concentration in transportation and materials handling (4,900

annual openings), food services and retail (12,600 combined annual openings), office and admin support (5,900 annual openings) and farm occupations (6,300 annual openings).

The minimum educational requirements listed by the Department of Labor for more than three-quarters of the openings do not exceed a high school diploma. However, nearly 4,000 openings per year require more than a high school diploma, though less than a four year BA degree. This includes about 700 openings that require specialized training beyond high school, though not necessarily a certificate or AA degree. Of these jobs, 572 are teaching assistants and 105 are computer support specialists.

Nearly 1,400 annual opening are for jobs that do require a certificate in a specialized area of training. The largest occupational groups in this category include medical assistants (348 annual openings) and licensed practical and vocational nurses (308 openings per year). Other occupations requiring a certificate with 90-100 annual projected openings include dental assistants, emergency medical technician and paramedics, firefighters, supervisors of production and operating line workers, and heating, air conditioning and refrigeration mechanics.

About 2,000 projected openings per year would require an AA degree. The largest occupational group in this category is nurse practitioners (560 annual openings), followed by registered nurses (430 annual openings) and preschool teachers (203 annual openings). Another 331 projected annual openings are in other medical occupations, such as clinical technicians, health diagnosing support personnel, and respiratory therapists. The remaining openings in this category include a wide range of technical specialties including engineering and drafting technicians, agriculture and food science technicians and radio and telecommunications equipment installers.

iii. Provide an analysis of the regional workforce, including current labor force employment and unemployment data, information on labor market trends, and educational and skill levels of the workforce, including individuals with barriers to employment.

The region unemployment rate declined to 9.9 percent in 2015, down from the peak of 16.5 percent in 2010, but still well above the low point before the recession of 7.9 percent in 2006. While job levels have been increasing since 2010, the size of the labor force peaked in 2012 at 1,843,740, then declined to 1,840,270 by 2014 and finally increased slightly to 1,840,828 in 2015. Household population growth in the San Joaquin Valley exceeded statewide growth rates between 2011 and 2013, but has slowed in the past two years. CCWC region is projected to grow significantly faster than the state as a whole over the next five years (2015-2020), which will have implications for some employment sectors such as health care, retail, and local services.

In CCWC region, about 48 percent of the labor force is Latino, at 870,562 persons out of a labor force of 1,814,685, while 38 percent is White. Unemployment for Latino workers 25 and older is 12.4 percent compared to 8.6 percent for Whites. Unemployment is 14.2 percent for workers in other racial and ethnic groups. Unemployment affects workers 25 and older with no college degree much more, at 13.2 percent, than those with a college degree (6.1 percent). Veterans' unemployment level is at 8.8 percent. Disabled workers have relatively high unemployment, at slightly over 22.0 percent.

The labor force in CCWC region is fairly evenly concentrated among the age groups. Workers in the 16-24 age group are about 16.6 percent of the total while nearly 25 percent are in the 25-34 age group. The prime working age group of 35-54 has 41 percent of the workforce. Workers over 55 constitute about 16.9 percent of the workforce and a number of employers report that impending retirements are a significant issue for them in terms of anticipated openings in the future.

Non-citizen workers constitute 18.9 percent of the workforce in CCWC region, though the rate varies with age. At 23.7 percent of the prime working age (35 to 54) labor force, non-citizens are more concentrated in this age cohort relative to their overall concentration level.

Educational attainment in the CCWC region is slightly lower than the statewide averages, with 22 percent of workers 25 years and older not holding a high school diploma or equivalent, compared to 18.5 percent for the state as a whole. Statewide, 38.8 percent have a college degree, compared to 28.5 percent for the CCWC region.

However, in the San Joaquin Valley there is a stark contrast in the educational attainment levels of the labor force when citizenship status is taken into account. Among US citizens in the CCWC workforce, only 12 percent do not have a high school diploma or GED and 33.7 percent have a college degree. Non-citizens 25 and over exhibit high rates of less than high school attainment level: 62.8 percent of the non-citizens in the labor force have not obtained a high school diploma or a GED. This accounts in part for the differences in educational attainment between Latino workers and other workers in the labor force, as the non-citizen group is 87.1 percent Latino. Overall, Latinos have earned high school diplomas and GEDs at rates slightly surpassing Whites and Others, at 25.9 percent versus 24.5 percent (Whites) and 21.7 percent (Others). However, Whites and Others are over two and a half times more likely than Latinos to have earned a college degree: 14.9 percent of the Latinos in the labor force have earned a college degree versus 39.6 percent for Whites and 40.8 percent for others.

Veterans in CCWC region tend to have high levels of overall educational attainment, with 3.5 percent not achieving a high school diploma. Among disabled workers, however, 24.5 percent do not have a high school diploma, compared to 22 percent for the workforce as a whole.

iv. Provide an analysis of workforce development activities, including education and training, in the region. This analysis must include the strengths and weaknesses of workforce development activities and capacity to provide the workforce development activities to address the education and skill needs of the workforce, including individuals with barriers to employment, and the employment needs of employers. A significant share of the California population is foreign born, including several million individuals in the workforce who are limited English proficient. The following counties have a workforce that is at least 15 percent limited English proficient: Imperial, Monterey, San Benito, Los Angeles, Tulare, Merced, Santa Clara, Madera, Fresno, Orange, San Joaquin, San Mateo, Santa Barbara, Kern, Kings, Alameda, San Francisco, Napa, Stanislaus, San Bernardino, Ventura, Riverside, San Diego, Yolo, Sutter, Contra Costa, and Sacramento. RPUs containing one or more of these counties must assess and specify in their regional plans how they will address the needs of and provide services to those who are limited English proficient.

These RPUs are required to provide an assessment of the need to provide services to and how services will be provided to limited English proficient individuals.

[Note: ADE's analysis pertains to non-citizens but does not separate out workers with limited English proficiency].

B. Required Content on Regional Sector Pathways

i. A description of the way planning partners, including local economic development agencies, assessed regional industry workforce needs, including a description of the data sources utilized, the industry leaders engaged, and the manner in which industry engagement took place, including a summary of any relevant convening activities, the dates partners met, who attended, and what was decided.

<u>Industry/Educational Representatives Interviewed by ADE</u>

Rachelle Riggs, Human Resources Manager, Ball Metal Food Containers
Daryn Kumar, CEO, Memorial Medical Center
Steven Lillie, Senior Electrical/Facilities Mgr., Del Monte Foods Modesto
Jeff Grover, CEO, Solecon Industrial
Rosalinda Batsford, Human Resources Manager, Conagra
Dr. Kristen Clark, President, Westhills College, Lemoore campus
Dr. Kristin Robinson, Provost, College of the Sequoias. Hanford Center
Bill Fishbough, Superintendent, Hanford Joint Union High School District
Kes Andersen, Human Resources Manager, Leprino Foods
Glen Bach, General Manager, Pitman Family Farms
Randy Dodd, Vice President of Business Development, Adventist Health
Irene Gallegos, Human Resources Manager, Del Monte Foods, Hanford
Dusty Ference, Executive Director, Kings County Farm Bureau
Jay Irvine, President & CEO, Mar Vista Resources, LLC.
Gurminder Sangha, Deputy Sector Navigator, Advanced Manufacturing, California Community Colleges

[The following items were not a part of ADE's analysis]

ii. An analysis of the manner in which regional partners, including industry leaders, have determined, or will determine whether existing training and education programs in the region were/are meeting industry's workforce needs. This analysis should provide a description of any areas of identified training and education deficiency and what planning partners have committed to do to resolve relevant deficiencies.

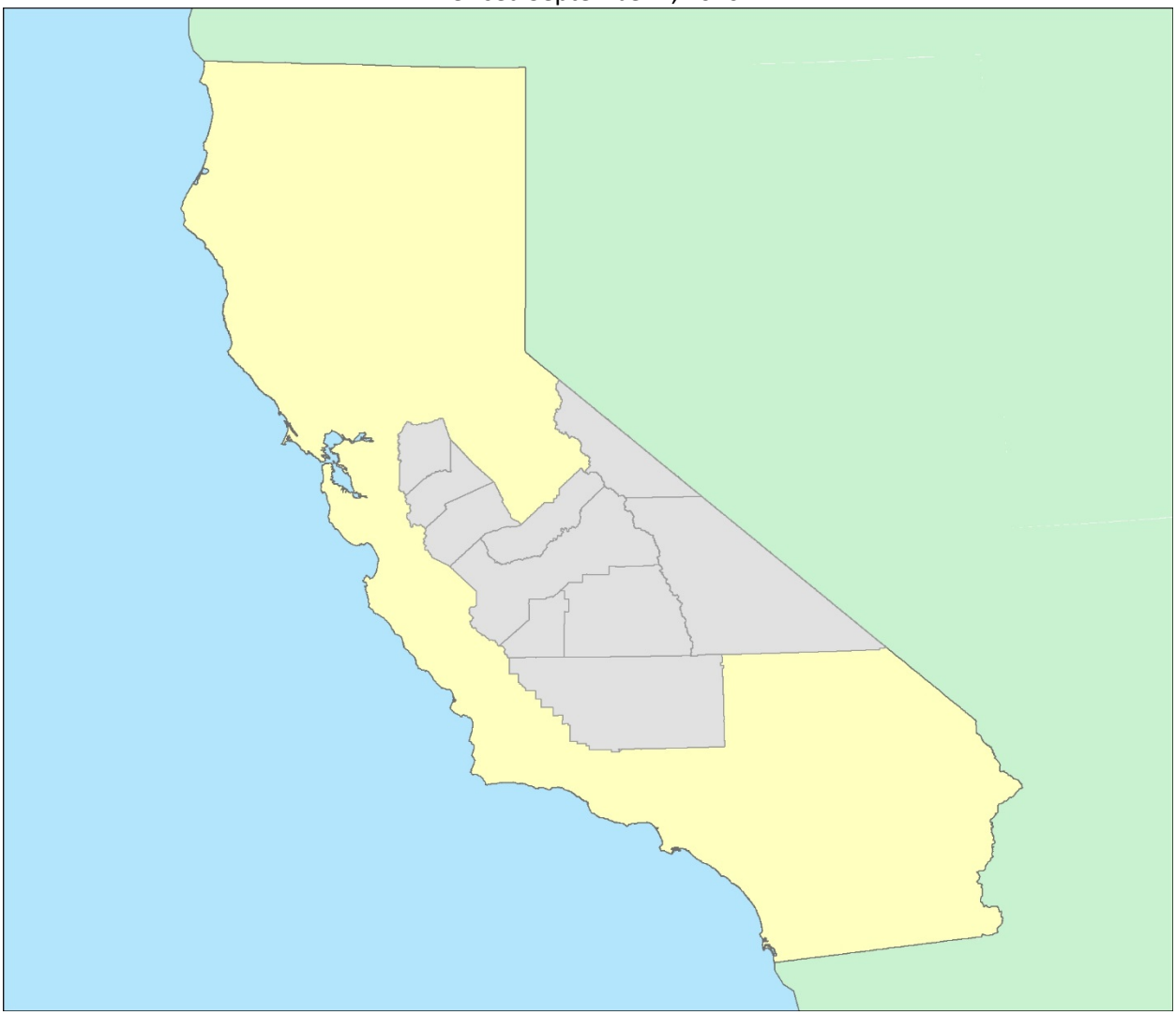
iii. A description of any existing career pathway programs in the region that have been identified as meeting leading and emergent industry sector needs. This description should specifically articulate the manner in which industry participated in the identification of relevant pathways.

iv. A description of the work being done by industry, workforce boards, economic development agencies, and relevant faculty partners to recommend and implement any necessary adjustments to further develop career pathway programs that meet regional industry needs.

ATTACHMENT 3

Regional Planning Unit Summary: San Joaquin Valley and Associated Counties

Employment Development Department, Labor Market Information Division
Revised September 1, 2016



Fresno, Kern, Inyo, Mono, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties

EDD Employment Development Department State of California

LaborMarketInfo www.labormarketinfo.edd.ca.gov

Regional Planning Unit: San Joaquin Valley and Associated Counties

Local Workforce Development Areas: Fresno County, Kern, Inyo, Mono Consortium, Kings County, Madera County, Merced County, San Joaquin County, Stanislaus County, and Tulare County

Counties: Fresno, Kern, Inyo, Mono, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare

Labor Market Profile

	May 2016	May 2015	Change	Percent
Labor Market	1,871,810	1,873,910	-2,100	-0.1%
Employed	1,710,720	1,689,870	20,850	1.2%
Unemployed	160,910	184,240	-23,330	-12.7%
Unemployment Rate	8.6%	9.8%	-1.2%	-

Source: Employment Development Department, Labor Market Information Division.
Data Note: Numbers may not add due to rounding.

Unemployment Insurance Claims

Unemployment Insurance Claims data is available by county here.
Source: Employment Development Department, Unemployment Insurance Division.

Commute Patterns

Living and Employed in the Area	Inflow	Outflow
991,078	223,636	321,863

Source: U.S. Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2014).

Regional Economic Growth

Major Industry Sector	May 2016 (preliminary)	May 2012	Change	Percent	Location Quotient
Total All Industries	1,514,200	1,368,720	145,480	10.6%	-
Total Farm	240,000	220,001	19,999	9.1%	5.6
Total Nonfarm	1,274,200	1,148,720	125,480	10.9%	0.9
Mining and Logging	9,930	13,451	-3,521	-26.2%	4.4
Construction	43,130	36,530	6,600	18.1%	0.6
Manufacturing	111,240	102,701	8,539	8.3%	1.0
Trade, Transportation and Utilities	268,450	235,200	33,250	14.1%	1.0
Information	11,840	11,660	180	1.5%	0.3
Financial Activities	42,940	42,540	400	0.9%	0.6
Professional and Business Services	110,120	101,620	8,500	8.4%	0.5
Educational and Health Services	205,460	181,400	24,060	13.3%	0.9
Leisure and Hospitality	126,430	106,960	19,470	18.2%	0.7
Other Services	38,790	35,700	3,090	8.7%	0.8
Government	287,380	266,760	20,620	7.7%	1.3

Source: Employment Development Department, Labor Market Information Division.
Data Note: Numbers may not add due to suppression. Location quotients (LQs) are ratios that allow a Regional Planning Unit (RPU)'s distribution of employment for an industry to be compared to California's distribution of employment for the same industry. Specifically, LQs are calculated by first dividing RPU industry employment by the all industry total of RPU employment. Second, California industry employment is divided by the all industry total for California. Finally, the RPU ratio (first calculation) is divided by the California ratio (second calculation). If an LQ is equal to 1, then the industry has the same share of RPU employment as it does in California. An LQ greater than 1 indicates an industry with a greater share of RPU employment than is the case statewide.

Demand Industry Sectors

Top Demand Industry Sub Sector	Total Projected Job Openings 2012-2022	Location Quotient
Support Activities for Crop Production	53,533	6.7
Restaurants and Other Eating Places	50,829	0.9
Elementary and Secondary Schools	35,929	1.5
Individual and Family Services	20,045	0.9
General Medical and Surgical Hospitals	18,716	1.1
Employment Services	14,915	0.8
Offices of Physicians	13,370	1.0
Grocery Stores	11,199	1.0
Other General Merchandise Stores	9,151	1.2
Fruit and Tree Nut Farming	8,615	4.8

Source: Employment Development Department, Labor Market Information Division.
Data Note: Total projected job openings are the sum of new and replacement job openings.

Emergent Industry Sectors

Top Emergent Industry Sub Sector	Numeric Change 2012-2022	Percent Change	Location Quotient
Motor Vehicle Parts Manufacturing	1,280	108.5%	1.0
Other General Merchandise Stores	6,320	73.4%	1.2
Social Advocacy Organizations	860	71.7%	0.7
Highway, Street, and Bridge Construction	1,200	71.0%	1.0
Other Support Services	1,420	68.9%	0.9
Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	4,510	68.0%	0.9
Building Finishing Contractors	4,060	64.2%	0.9
Wired Telecommunications Carriers	1,090	63.4%	0.8
Petroleum and Coal Products Manufacturing	670	59.8%	1.1
Management, Scientific, and Technical Consulting Services	3,660	59.5%	0.3

Source: Employment Development Department, Labor Market Information Division.
Data Note: Emergent industry sectors are industries with the highest levels of growth as measured by percent change.

Top 25 Middle-Skill, Middle-Wage or Higher Occupations

Top 25 Middle-Skill, Middle-Wage or Higher Occupations	Total Projected Job Openings 2012-2022	HWOL Job Ads	Median Annual Wage 2016 1st Quarter
Heavy and Tractor-Trailer Truck Drivers	10,494	5,728	$40,041
Registered Nurses	9,600	6,196	$91,510
Teacher Assistants	5,245	872	$28,905
Nursing Assistants	4,863	411	$27,057
Medical Assistants	4,231	505	$30,558
Licensed Practical and Licensed Vocational Nurses	2,956	813	$51,343
Preschool Teachers, Except Special Education	1,935	349	$30,319
Dental Assistants	1,586	407	$31,716
First-Line Supervisors of Production and Operating Workers	1,478	909	$53,638
Firefighters	1,080	29	$55,844
Computer User Support Specialists	1,048	727	$47,185
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	1,025	367	$44,599
Dental Hygienists	966	105	$86,444
Emergency Medical Technicians and Paramedics	909	87	$33,149
Medical Records and Health Information Technicians	892	257	$38,238
Paralegals and Legal Assistants	828	129	$48,905
Aircraft Mechanics and Service Technicians	739	103	$57,758
Library Technicians	699	25	$35,389
Medical and Clinical Laboratory Technicians	671	50	$43,721
Telecommunications Equipment Installers and Repairers, Except Line Installers	621	202	$53,645
Phlebotomists	522	76	$36,274
Respiratory Therapists	503	88	$77,694
Radiologic Technologists	492	244	$74,594
Forest and Conservation Technicians	464	129	$32,406
Agricultural and Food Science Technicians	444	46	$37,365

Source: Employment Development Department, Labor Market Information Division; The Conference Board Help Wanted OnLine™ (HWOL) Data Series, 120-day period ending June 21, 2016.

Data Note: Middle-skill occupations typically require more than a high school diploma but less than a Bachelor's degree. Middle-wage occupations make at least 80 percent of the area's median annual wage ($33,796).

Demographic Data

Age	Population	Percent Share of Total Population
Under 5 Years	333,960	8.2%
5 to 9 Years	331,184	8.1%
10 to 14 Years	328,524	8.1%
15 to 17 Years	200,666	4.9%
18 and 19 Years	126,636	3.1%
20 Years	70,751	1.7%
21 Years	66,804	1.6%
22 to 24 Years	183,845	4.5%
25 to 29 Years	298,348	7.3%
30 to 34 Years	281,255	6.9%
35 to 39 Years	259,620	6.4%
40 to 44 Years	254,588	6.2%
45 to 49 Years	255,167	6.3%
50 to 54 Years	253,973	6.2%
55 to 59 Years	222,730	5.5%
60 and 61 Years	79,803	2.0%
62 to 64 Years	105,872	2.6%
65 and 66 Years	64,101	1.6%
67 to 69 Years	76,464	1.9%
70 to 74 Years	100,429	2.5%
75 to 79 Years	74,251	1.8%
80 to 84 Years	55,364	1.4%
85 Years and Older	55,274	1.4%
Total	4,079,609	100.0%

Source: U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

Gender	Population
Male	2,053,624
Female	2,025,985
Total	4,079,609

Source: U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

Median Household Income by County	Median Household Income
Fresno	$45,201
Inyo	$45,625
Kern	$48,574
Kings	$47,341
Madera	$45,490
Merced	$43,066
Mono	$61,814
San Joaquin	$53,253
Stanislaus	$49,573
Tulare	$42,863

Source: U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

Poverty Status	Population	Percentage
Income in the Past 12 Months Below Poverty Level	940,042	23.7%
Income in the Past 12 at or Above Poverty Level	3,030,436	76.3%
Total	3,970,478	100.0%

Source: U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

Race	Population	Percentage
Hispanic or Latino	2,018,605	100.0%
White Alone	1,332,905	66.0%
Black or African American Alone	13,492	0.7%
American Indian and Alaska Native Alone	20,737	1.0%
Asian Alone	7,720	0.4%
Native Hawaiian and Other Pacific Islander Alone	1,329	0.1%
Some Other Race Alone	548,857	27.2%
Two or More Races	93,565	4.6%
Non-Hispanic or Latino	2,061,004	100.0%
White Alone	1,452,229	70.5%
Black or African American Alone	180,518	8.8%
American Indian and Alaska Native Alone	24,507	1.2%
Asian Alone	296,367	14.4%
Native Hawaiian and Other Pacific Islander Alone	11,187	0.5%
Some Other Race Alone	6,589	0.3%
Two or More Races	89,607	4.3%

Source: U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

Native and Foreign Born	Population	Percentage
Native	3,192,815	78.3%
Foreign Born	886,794	21.7%
Total	4,079,609	100.0%

Source: U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

English Learners	Population	Percentage
Speaks English Less Than "Very Well"	711,447	19.0%
Speaks English "Very Well"	916,870	24.5%
Speaks Only English	2,117,332	56.5%
Total	3,745,649	100.0%

Source: U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

Veteran Status	Population	Percentage
Male Veterans	179,774	93.2%
Female Veterans	13,092	6.8%
Total	192,866	100.0%

Source: U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

Disability Status	Population	Percentage
With Any Disability	482,044	12.1%
No Disability	3,507,996	87.9%
Total	3,990,040	100.0%

Source: U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

Labor Force Participation	Population	Percentage
Employed or in Armed Forces	1,562,189	51.7%
Unemployed	261,676	8.7%
Not in labor force	1,196,002	39.6%
Total	3,019,867	100.0%

Source: U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

Individuals with Barriers to Employment	Total
Ethnic Minorities	2,627,380
Households with Cash Public Assistance or Food Stamps	227,663
Population 18 and Over with Less Than a 9th Grade Level Education	383,224
Single Parent Households	299,397
Speak English Less Than "Very Well"	711,447
Youth Ages 10 to 24	977,226

Source: U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

Educational Attainment	Male	Percentage	Female	Percentage
Less than 9th grade	198,654	13.8%	184,570	12.8%
9th to 12th grade, no diploma	196,833	13.6%	153,414	10.6%
High school graduate (includes equivalency)	394,997	27.4%	366,649	25.4%
Some college, no degree	363,871	25.2%	397,218	27.6%
Associate's degree	92,503	6.4%	118,626	8.2%
Bachelor's degree	131,471	9.1%	154,746	10.7%
Graduate or professional degree	65,809	4.6%	65,914	4.6%
Total	1,444,138	100.0%	1,441,137	100.0%

Source: U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

Educational Attainment, 25 Years and Over	Hispanic or Latino	Percent of Hispanic or Latino, Total	White alone, not Hispanic or Latino	Percent of White alone, not Hispanic or Latino, Total
Less than high school diploma	465,066	45.5%	106,769	10.1%
High school graduate (includes equivalency)	249,071	24.3%	288,617	27.4%
Some college or associate's degree	240,004	23.5%	409,059	38.8%
Bachelor's degree or higher	68,756	6.7%	249,627	23.7%
Total	1,022,897	100.0%	1,054,072	100.0%

Source: U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

Educational Attainment by Race, 25 Years and Over	White Alone	Percent of White Alone, Total	Black or African American Alone	Percent of Black or African American Alone, Total	American Indian and Alaska Native Alone	Percent of American Indian and Alaska Native Alone, Total	Asian Alone	Percent of Asian Alone, Total	Native Hawaiian and Other Pacific Islander Alone	Percent of Native Hawaiian and Other Pacific Islander Alone, Total	Some Other Race Alone	Percent of Some Other Race Alone, Total	Two or More Races	Percent of Two or more races, Total
Less than high school diploma	409,495	23.7%	20,148	17.7%	6,927	25.2%	44,779	24.1%	1,557	19.9%	145,998	48.8%	17,118	22.6%
High school graduate (includes equivalency)	453,186	26.2%	29,249	25.7%	7,990	29.0%	35,705	19.2%	2,492	31.9%	70,944	23.7%	19,431	25.7%
Some college or associate's degree	567,212	32.8%	48,411	42.5%	9,907	36.0%	50,399	27.1%	3,082	39.5%	65,473	21.9%	26,872	35.5%
Bachelor's degree or higher	296,868	17.2%	16,067	14.1%	2,704	9.8%	55,247	29.7%	677	8.7%	16,978	5.7%	12,323	16.3%
Total	1,726,761	100.0%	113,875	100.0%	27,528	100.0%	186,130	100.0%	7,808	100.0%	299,393	100.0%	75,744	100.0%

Source: U.S. Census Bureau, 2010-2014 American Community Survey, 5-Year Estimates.

Gross Domestic Product (GDP) by Metropolitan Statistical Area (MSA)

The Bureau of Economic Analysis (BEA) estimates GDP at the State and MSA level only. Where applicable, the tables below display MSA data as a substitute for county level data.

GDP by Fresno MSA (substitute for Fresno County)

Major Industry Sector	**2014 Millions of Current Dollars**
Total All Industries	$37,149
Agriculture, Forestry, Fishing, and Hunting	$3,875
Mining	$157
Utilities	$964
Construction	$1,291
Manufacturing	$2,563
Wholesale Trade	$2,348
Retail Trade	$2,642
Transportation and Warehousing	$1,069
Information	$1,045
Finance, Insurance, Real Estate, Rental, and Leasing	$7,298
Professional and Business Services	$2,357
Educational Services, Health Care, and Social Assistance	$3,632
Arts, Entertainment, Recreation, Accommodation, and Food Services	$979
Other Services, Except Government	$958
Government	$5,971

Source: U.S. Department of Commerce, Bureau of Economic Analysis.
Data Note: Industry detail is based on the 2007 North American Industry Classification System (NAICS). Per capita real GDP statistics for 2001-2014 reflect Census Bureau mid-year population estimates available as of March 2015. Last updated: September 23, 2015.

GDP by Bakersfield MSA (substitute for Kern County)

Major Industry Sector	2014 Millions of Current Dollars
Total All Industries	$39,989
Agriculture, Forestry, Fishing, and Hunting	$5,083
Mining	$6,486
Utilities	$564
Construction	$1,724
Manufacturing	$3,294
Wholesale Trade	$2,057
Retail Trade	$2,327
Transportation and Warehousing	$1,131
Information	$439
Finance, Insurance, Real Estate, Rental, and Leasing	$3,948
Professional and Business Services	$2,589
Educational Services, Health Care, and Social Assistance	$2,137
Arts, Entertainment, Recreation, Accommodation, and Food Services	$789
Other Services, Except Government	$1,059
Government	$6,364

Source: U.S. Department of Commerce, Bureau of Economic Analysis.
Data Note: Industry detail is based on the 2007 North American Industry Classification System (NAICS). Per capita real GDP statistics for 2001-2014 reflect Census Bureau mid-year population estimates available as of March 2015. Last updated: September 23, 2015.

GDP by Hanford-Corcoran MSA (substitute for Kings County)

Major Industry Sector	2014 Millions of Current Dollars
Total All Industries	$5,275
Agriculture, Forestry, Fishing, and Hunting	$1,135
Mining	(L)
Utilities	$33
Construction	$86
Manufacturing	$556
Wholesale Trade	$132
Retail Trade	$277
Transportation and Warehousing	$88
Information	$36
Finance, Insurance, Real Estate, Rental, and Leasing	$272
Professional and Business Services	$137
Educational Services, Health Care, and Social Assistance	$340
Arts, Entertainment, Recreation, Accommodation, and Food Services	$90
Other Services, Except Government	$100
Government	$1,992

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Data Note: Industry detail is based on the 2007 North American Industry Classification System (NAICS). (L) Less than $500,000 in nominal or real GDP by metropolitan area. Per capita real GDP statistics for 2001-2014 reflect Census Bureau mid-year population estimates available as of March 2015. Last updated: September 23, 2015.

GDP by Madera MSA (substitute for Madera County)

Major Industry Sector	2014 Millions of Current Dollars
Total All Industries	$4,729
Agriculture, Forestry, Fishing, and Hunting	(D)
Mining	(D)
Utilities	$119
Construction	$135
Manufacturing	$501
Wholesale Trade	$143
Retail Trade	$294
Transportation and Warehousing	$77
Information	$103
Finance, Insurance, Real Estate, Rental, and Leasing	$308
Professional and Business Services	$199
Educational Services, Health Care, and Social Assistance	$529
Arts, Entertainment, Recreation, Accommodation, and Food Services	$105
Other Services, Except Government	$124
Government	$851

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Data Note: Industry detail is based on the 2007 North American Industry Classification System (NAICS). (D) Not shown in order to avoid the disclosure of confidential information; estimates are included in higher level totals. Per capita real GDP statistics for 2001-2014 reflect Census Bureau mid-year population estimates available as of March 2015. Last updated: September 23, 2015.

GDP by Merced MSA (substitute for Merced County)

Major Industry Sector	2014 Millions of Current Dollars
Total All Industries	$7,225
Agriculture, Forestry, Fishing, and Hunting	(D)
Mining	(D)
Utilities	(D)
Construction	$222
Manufacturing	$997
Wholesale Trade	(D)
Retail Trade	$539
Transportation and Warehousing	$226
Information	$58
Finance, Insurance, Real Estate, Rental, and Leasing	$621
Professional and Business Services	$310
Educational Services, Health Care, and Social Assistance	$517
Arts, Entertainment, Recreation, Accommodation, and Food Services	$168
Other Services, Except Government	$191
Government	$1,466

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Data Note: Industry detail is based on the 2007 North American Industry Classification System (NAICS). (D) Not shown in order to avoid the disclosure of confidential information; estimates are included in higher level totals. Per capita real GDP statistics for 2001-2014 reflect Census Bureau mid-year population estimates available as of March 2015. Last updated: September 23, 2015.

GDP by Stockton-Lodi MSA (substitute for San Joaquin County)

Major Industry Sector	2014 Millions of Current Dollars
Total All Industries	$23,491
Agriculture, Forestry, Fishing, and Hunting	$1,674
Mining	$228
Utilities	$523
Construction	$931
Manufacturing	$2,092
Wholesale Trade	$1,879
Retail Trade	$1,853
Transportation and Warehousing	$1,363
Information	$456
Finance, Insurance, Real Estate, Rental, and Leasing	$4,046
Professional and Business Services	$1,394
Educational Services, Health Care, and Social Assistance	$2,270
Arts, Entertainment, Recreation, Accommodation, and Food Services	$628
Other Services, Except Government	$627
Government	$3,527

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Data Note: Industry detail is based on the 2007 North American Industry Classification System (NAICS). Per capita real GDP statistics for 2001-2014 reflect Census Bureau mid-year population estimates available as of March 2015. Last updated: September 23, 2015.

GDP by Modesto MSA (substitute for Stanislaus County)

Major Industry Sector	2014 Millions of Current Dollars
Total All Industries	$18,094
Agriculture, Forestry, Fishing, and Hunting	$1,729
Mining	$7
Utilities	(D)
Construction	$645
Manufacturing	$2,662
Wholesale Trade	(D)
Retail Trade	$1,521
Transportation and Warehousing	$645
Information	$182
Finance, Insurance, Real Estate, Rental, and Leasing	$2,946
Professional and Business Services	$1,082
Educational Services, Health Care, and Social Assistance	$2,196
Arts, Entertainment, Recreation, Accommodation, and Food Services	$513
Other Services, Except Government	$453
Government	$2,392

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Data Note: Industry detail is based on the 2007 North American Industry Classification System (NAICS). (D) Not shown in order to avoid the disclosure of confidential information; estimates are included in higher level totals. Per capita real GDP statistics for 2001-2014 reflect Census Bureau mid-year population estimates available as of March 2015. Last updated: September 23, 2015.

GDP by Visalia-Porterville MSA (substitute for Tulare County)

Major Industry Sector	2014 Millions of Current Dollars
Total All Industries	$13,632
Agriculture, Forestry, Fishing, and Hunting	$2,977
Mining	$24
Utilities	$257
Construction	$429
Manufacturing	$1,339
Wholesale Trade	$696
Retail Trade	$1,185
Transportation and Warehousing	$507
Information	$256
Finance, Insurance, Real Estate, Rental, and Leasing	$1,096
Professional and Business Services	$695
Educational Services, Health Care, and Social Assistance	$768
Arts, Entertainment, Recreation, Accommodation, and Food Services	$329
Other Services, Except Government	$398
Government	$2,675

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Data Note: Industry detail is based on the 2007 North American Industry Classification System (NAICS). Per capita real GDP statistics for 2001-2014 reflect Census Bureau mid-year population estimates available as of March 2015. Last updated: September 23, 2015.

Skill Requirements for Top 25 Middle-Skill, Middle-Wage or Higher Occupations

Occupations	Skills																							
	Active Learning	Active Listening	Complex Problem Solving	Coordination	Critical Thinking	Equipment Maintenance	Installation	Instructing	Judgment and Decision Making	Learning Strategies	Management of Personnel Resources	Monitoring	Operation and Control	Operation Monitoring	Quality Control Analysis	Reading Comprehension	Repairing	Science	Service Orientation	Social Perceptiveness	Speaking	Time Management	Troubleshooting	Writing
Heavy and Tractor-Trailer Truck Drivers		●	●		●	●						●	●	●		●					●	●		
Registered Nurses	●	●		●	●			●				●				●			●	●	●			
Teacher Assistants		●		●	●			●		●		●				●			●	●	●			
Nursing Assistants	●	●		●	●							●				●			●	●	●			●
Medical Assistants	●	●		●	●							●				●			●	●	●			●
Licensed Practical and Licensed Vocational Nurses		●		●	●				●			●				●			●	●	●	●		
Preschool Teachers, Except Special Education		●		●	●					●		●				●			●	●	●	●		
Dental Assistants	●	●			●			●				●				●			●	●	●			●
First-Line Supervisors of Production and Operating Workers		●	●	●	●						●					●				●	●	●		●
Firefighters*		●		●	●				●			●		●		●			●	●	●			
Computer User Support Specialists	●	●		●	●			●				●				●			●		●			●
Heating, Air Conditioning, and Refrigeration Mechanics and Installers*		●		●	●	●	●						●		●	●	●						●	
Dental Hygienists	●	●	●	●	●							●				●			●		●			●
Emergency Medical Technicians and Paramedics	●	●		●	●				●			●				●			●	●	●			
Medical Records and Health Information Technicians		●	●		●				●	●		●				●					●	●		●
Paralegals and Legal Assistants	●	●		●	●							●				●				●	●	●		●
Aircraft Mechanics and Service Technicians		●	●		●	●			●					●	●	●	●						●	
Library Technicians	●	●		●	●			●				●				●			●		●			●
Medical and Clinical Laboratory Technicians	●	●	●	●	●					●		●				●		●			●			
Telecommunications Equipment Installers and Repairers, Except Line Installers	●	●	●		●							●		●	●	●	●						●	
Phlebotomists	●	●		●	●			●				●				●			●	●	●			
Respiratory Therapists	●	●			●				●			●				●		●	●	●	●			
Radiologic Technologists	●	●		●	●							●				●				●	●	●		●
Forest and Conservation Technicians		●	●	●	●				●	●	●	●				●					●			
Agricultural and Food Science Technicians*	●	●	●	●	●			●				●				●					●			●

Source: U.S. Department of Labor's Occupational Information Network (O*NET) at www.onetonline.org.

* Skills listed for the occupation represent a specialty occupation.

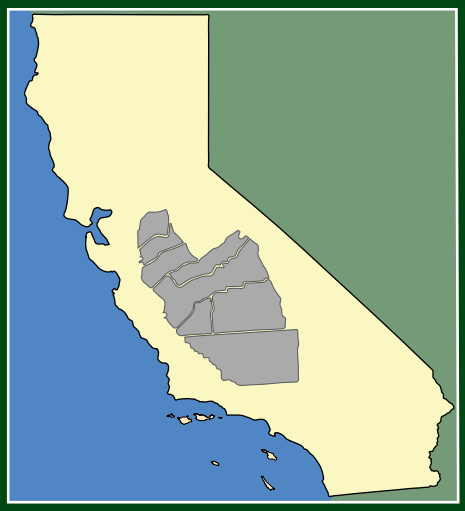
Knowledge Requirements for Top 25 Middle-Skill, Middle-Wage or Higher Occupations

Occupations	Knowledge																											
	Administration and Management	Biology	Building and Construction	Chemistry	Clerical	Communications and Media	Computers and Electronics	Customer and Personal Service	Design	Economics and Accounting	Education and Training	Engineering and Technology	English Language	Geography	Law and Government	Mathematics	Mechanical	Medicine and Dentistry	Personnel and Human Resources	Philosophy and Theology	Physics	Production and Processing	Psychology	Public Safety and Security	Sales and Marketing	Sociology and Anthropology	Telecommunications	Therapy and Counseling	Transportation
Heavy and Tractor-Trailer Truck Drivers	●							●			●		●	●	●	●	●							●					●
Registered Nurses		●			●			●			●		●			●		●					●			●		●	
Teacher Assistants					●		●	●			●		●	●		●							●			●		●	
Nursing Assistants					●		●	●			●		●					●	●				●	●				●	
Medical Assistants	●				●		●	●			●		●					●					●	●				●	
Licensed Practical and Licensed Vocational Nurses				●	●			●			●		●			●		●		●			●					●	
Preschool Teachers, Except Special Education	●							●			●		●	●						●			●	●		●		●	
Dental Assistants				●	●		●	●			●		●					●				●	●		●				
First-Line Supervisors of Production and Operating Workers	●				●		●		●		●	●				●	●		●			●							
Firefighters*	●		●	●				●			●		●		●		●				●			●					
Computer User Support Specialists	●				●	●	●	●			●	●	●			●											●		
Heating, Air Conditioning, and Refrigeration Mechanics and Installers*			●	●			●	●	●			●	●			●	●				●								
Dental Hygienists		●		●	●		●	●			●		●					●					●		●				
Emergency Medical Technicians and Paramedics				●				●			●		●			●		●					●	●				●	●
Medical Records and Health Information Technicians	●				●	●	●	●			●		●		●	●								●					
Paralegals and Legal Assistants	●				●	●	●	●			●		●		●	●							●						
Aircraft Mechanics and Service Technicians				●				●	●			●	●			●	●				●	●		●					●
Library Technicians	●				●	●	●	●		●	●		●		●	●													
Medical and Clinical Laboratory Technicians		●		●	●		●	●					●			●		●				●		●					
Telecommunications Equipment Installers and Repairers, Except Line Installers					●		●	●			●	●	●			●	●							●			●		
Phlebotomists				●	●		●	●			●		●					●		●			●	●					
Respiratory Therapists		●		●			●	●			●		●			●		●					●					●	
Radiologic Technologists		●			●		●	●			●		●			●		●			●		●						
Forest and Conservation Technicians		●					●	●			●		●	●	●	●	●							●					●
Agricultural and Food Science Technicians*	●	●		●	●		●				●		●	●		●			●										

Source: U.S. Department of Labor's Occupational Information Network (O*NET) at www.onetonline.org.

* Knowledge listed for the occupation represent a specialty occupation.

ATTACHMENT 4



Regional Economic Analysis Profile

San Joaquin Valley Economic Market

April 2015

Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties

EDD Employment Development Department
State of California

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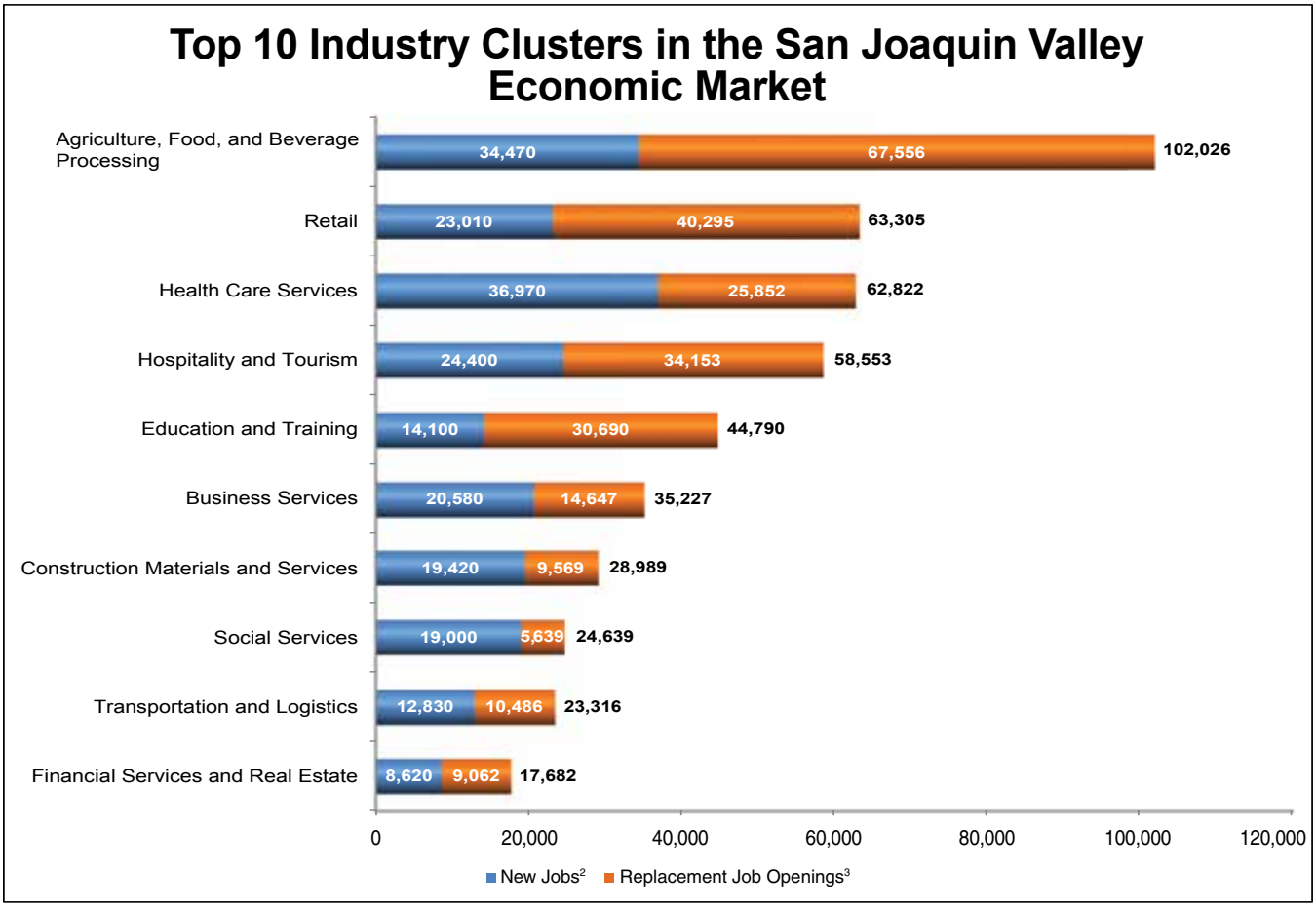
SUMMARY OF THE SAN JOAQUIN VALLEY ECONOMIC MARKET INDUSTRY CLUSTERS

What is an Industry Cluster?

Industry clusters are groups of associated industries in an economic market that stimulate the creation of new businesses and job opportunities in a particular field. The application of workforce and economic development resources toward the continual development of industry clusters will help stimulate economic growth and boost the number of employment opportunities for the labor force.

Purpose of this Report

The purpose of this report is to help align the state's workforce institutions and programs around the needs of economic market industry clusters. This report focuses on the future employment demand of economic market industry clusters and features them as primary investment opportunities for the California workforce development system. The goal of this report is to account for industry clusters with the largest number of projected total job openings[1] and help the California workforce development system prepare the state's workforce to compete for these future job opportunities.



Source: California Employment Development Department, Projections of Employment 2012-2022. Industry and occupational employment projections for 2012-2022 in this report may not be directly comparable to the published 2012-2022 employment projections available online at [www.labormarketinfo.edd.ca.gov.](http://www.labormarketinfo.edd.ca.gov)

[1] Total job openings are the sum of new jobs and replacement job openings.
[2] New jobs are only openings due to growth and do not include job declines. If an occupation's employment change is negative, there is no job growth and new jobs are set to zero.
[3] Replacement job openings estimate the number of job openings created when workers retire or permanently leave an occupation and need to be replaced.

INDUSTRY CLUSTER DESCRIPTIONS

The following are descriptions of the San Joaquin Valley Economic Market's top 10 industry clusters followed by a list of the top industries with the highest total projected job openings in the cluster.

The **Agriculture, Food, and Beverage Processing** industry cluster includes establishments primarily engaged in growing crops, raising animals, and manufacturing food and beverages, as well as support activities for crop and animal production. This cluster employed almost 269,000 people during 2013-2014,* almost 21.7 percent of the economic market's workforce. Top industries in this cluster include:

- Support Activities for Crop Production
- Fruit and Tree Nut Farming
- Cattle Ranching and Farming
- Other Food Manufacturing
- Beverage Manufacturing

The **Retail** industry cluster includes grocery and department stores, dollar stores, retail pharmacies, and clothing specialty stores. During 2013-2014,* this cluster employed almost 135,000 workers, or about 10.9 percent of the economic market's total employment. Industries projected to have the largest number of jobs include:

- Grocery Stores
- Other General Merchandise Stores
- Department Stores
- Building Material and Supplies Dealers
- Automobile Dealers

The **Health Care Services** industry cluster includes acute care and outpatient hospitals, nursing homes and rehabilitation centers, adult day care centers, and community service agencies for the elderly. It employed nearly 134,000 people in the economic market during 2013-2014,* accounting for 10.8 percent of the workforce. Industries in this cluster may include both public and private employment. Top industries within this cluster include:

- General Medical and Surgical Hospitals
- Offices of Physicians
- Nursing Care Facilities (Skilled Nursing Facilities)
- Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly
- Outpatient Care Centers

The **Hospitality and Tourism** industry cluster includes interrelated industries such as eating establishments, hotels and motels, casinos, museums, and sightseeing transportation. During 2013-2014,* this cluster was comprised of almost 107,000 workers, or 8.6 percent of the economic market's employment. Industries within this cluster with the most projected job openings include:

- Restaurants and Other Eating Places
- Other Amusement and Recreation Industries
- Traveler Accommodation
- Special Food Services
- Drinking Places (Alcoholic Beverages)

The **Education and Training** industry cluster is comprised of public and private elementary and high schools, community colleges, universities, and professional schools with programs such as dental, law, and medical. Other establishments include English as Second Language (ESL) programs, test preparation and tutoring, or driving instruction. During 2013-2014,* this cluster employed nearly 134,000 people in the economic market, accounting for 10.8 percent of the workforce. Top industries within this cluster include:

- Elementary and Secondary Schools
- Colleges, Universities, and Professional Schools
- Junior Colleges
- Other Schools and Instruction
- Technical and Trade Schools

* Quarterly Census of Employment and Wages (QCEW), a federal-state cooperative program, for the period April 2013 through March 2014.

INDUSTRY CLUSTER DESCRIPTIONS

The **Business Services** industry cluster is comprised of industries that include temporary help agencies, employer organizations, janitorial services, security systems services, and carpet cleaning establishments. This cluster employed more than 71,000 people during 2013-2014,* or 5.8 percent of the economic market's workforce. Top industries in this cluster include:

- Employment Services
- Services to Buildings and Dwellings
- Management of Companies and Enterprises
- Business Support Services
- Investigation and Security Services

The **Construction Materials and Services** industry cluster is comprised of builders of mechanical systems such as electrical, heating, and water; specialty trades outfits such as drywall, flooring, and painting contractors; residential and commercial builders; and contractors who complete foundation and framing work. During 2013- 2014,* this cluster was comprised of more than 55,000 workers, or 4.5 percent of the economic market's employment. Industries showing the highest projected job openings include:

- Building Equipment Contractors
- Building Finishing Contractors
- Foundation, Structure, and Building Exterior Contractors
- Residential Building Construction
- Other Specialty Trade Contractors

The **Social Services** industry cluster is comprised of establishments and agencies (public and private) that provide non-residential services for the welfare of children, adults, the elderly, and disabled. Examples include nonmedical in-home care programs, day care centers, and community food banks. In total, the cluster employed more than 47,000 people and accounted for 3.8 percent of the economic market's workforce in 2013-2014,* Industries include:

- Individual and Family Services
- Child Day Care Services
- Vocational Rehabilitation Services
- Community Food and Housing, and Emergency and Other Relief Services

The **Transportation and Logistics** cluster is made up of interrelated industries such as refrigerated warehousing, self-storage facilities, freight transporting companies, and overnight delivery businesses. In 2013-2014,* over 50,000 workers were employed in this cluster, making up 4 percent of the economic market's workforce population. Industries showing the highest projected job openings include:

- Warehousing and Storage
- General Freight Trucking
- Specialized Freight Trucking
- Couriers and Express Delivery Services
- Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance

The **Financial Services and Real Estate** industry cluster includes commercial banks, savings institutions, credit unions, credit card companies, insurance firms, and real estate appraisers or property management companies. During 2013-2014,* this cluster was comprised of nearly 37,000 workers, or 3 percent of the economic market's employment. Industries showing the highest projected job openings include:

- Depository Credit Intermediation
- Lessors of Real Estate
- Agencies, Brokerages, and Other Insurance Related Activities
- Insurance Carriers
- Activities Related to Real Estate

* Quarterly Census of Employment and Wages (QCEW), a federal-state cooperative program, for the period April 2013 through March 2014.

INDUSTRY CLUSTER DEFINITIONS

The following is a list of the North American Industry Classification System (NAICS) codes and corresponding industries that fall under each of the top 10 industry clusters in the San Joaquin Valley Economic Market.

Agriculture, Food, and Beverage Processing

1111 Oilseed and Grain Farming
1112 Vegetable and Melon Farming
1113 Fruit and Tree Nut Farming
1114 Greenhouse, Nursery, and Floriculture Production
1119 Other Crop Farming
1121 Cattle Ranching and Farming
1122 Hog and Pig Farming
1123 Poultry and Egg Production
1124 Sheep and Goat Farming
1125 Aquaculture
1129 Other Animal Production
1151 Support Activities for Crop Production
1152 Support Activities for Animal Production
3111 Animal Food Manufacturing
3112 Grain and Oilseed Milling
3113 Sugar and Confectionery Product Manufacturing
3114 Fruit and Vegetable Preserving and Specialty Food Manufacturing
3115 Dairy Product Manufacturing
3116 Animal Slaughtering and Processing
3117 Seafood Product Preparation and Packaging
3118 Bakeries and Tortilla Manufacturing
3119 Other Food Manufacturing
3121 Beverage Manufacturing
3122 Tobacco Manufacturing
3253 Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing
3261 Plastics Product Manufacturing

Retail

4411 Automobile Dealers
4412 Other Motor Vehicle Dealers
4413 Automotive Parts, Accessories, and Tire Stores
4431 Electronics and Appliance Stores
4441 Building Material and Supplies Dealers
4451 Grocery Stores
4452 Specialty Food Stores
4453 Beer, Wine, and Liquor Stores
4461 Health and Personal Care Stores
4471 Gasoline Stations
4481 Clothing Stores
4482 Shoe Stores
4483 Jewelry, Luggage, and Leather Goods Stores
4511 Sporting Goods, Hobby, and Musical Instrument Stores
4521 Department Stores
4529 Other General Merchandise Stores

Retail (Continued)

4532 Office Supplies, Stationery, and Gift Stores
4533 Used Merchandise Stores
4542 Vending Machine Operators

Health Care Services

6211 Offices of Physicians
6212 Offices of Dentists
6213 Offices of Other Health Practitioners
6214 Outpatient Care Centers
6215 Medical and Diagnostic Laboratories
6216 Home Health Care Services
6219 Other Ambulatory Health Care Services
6221 General Medical and Surgical Hospitals
6222 Psychiatric and Substance Abuse Hospitals
6223 Specialty (except Psychiatric and Substance Abuse) Hospitals
6231 Nursing Care Facilities (Skilled Nursing Facilities)
6232 Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities
6233 Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly
6239 Other Residential Care Facilities

Hospitality and Tourism

4871 Scenic and Sightseeing Transportation, Land
4872 Scenic and Sightseeing Transportation, Water
4879 Scenic and Sightseeing Transportation, Other
5615 Travel Arrangement and Reservation Services
7121 Museums, Historical Sites, and Similar Institutions
7131 Amusement Parks and Arcades
7132 Gambling Industries
7139 Other Amusement and Recreation Industries
7211 Traveler Accommodation
7212 RV (Recreational Vehicle) Parks and Recreational Camps
7213 Rooming and Boarding Houses
7223 Special Food Services
7224 Drinking Places (Alcoholic Beverages)
7225 Restaurants and Other Eating Places

Education and Training

6111 Elementary and Secondary Schools
6112 Junior Colleges
6113 Colleges, Universities, and Professional Schools
6114 Business Schools and Computer and Management Training

INDUSTRY CLUSTER DEFINITIONS

Education and Training (Continued)

6115 Technical and Trade Schools
6116 Other Schools and Instruction
6117 Educational Support Services

Business Services

5511 Management of Companies and Enterprises
5611 Office Administrative Services
5612 Facilities Support Services
5613 Employment Services
5614 Business Support Services
5419 Other Professional, Scientific, and Technical
5616 Investigation and Security Services
5617 Services to Buildings and Dwellings
5619 Other Support Services
5621 Waste Collection
5622 Waste Treatment and Disposal
5629 Remediation and Other Waste Management Services

Construction Materials and Services

2123 Nonmetallic Mineral Mining and Quarrying
2213 Water, Sewage and Other Systems
2361 Residential Building Construction
2362 Nonresidential Building Construction
2372 Land Subdivision
2373 Highway, Street, and Bridge Construction
2379 Other Heavy and Civil Engineering Construction
2381 Foundation, Structure, and Building Exterior Contractors
2382 Building Equipment Contractors
2383 Building Finishing Contractors
2389 Other Specialty Trade Contractors
3211 Sawmills and Wood Preservation
3271 Clay Product and Refractory Manufacturing
3272 Glass and Glass Product Manufacturing
3273 Cement and Concrete Product Manufacturing
3274 Lime and Gypsum Product Manufacturing
3279 Other Nonmetallic Mineral Product Manufacturing
3339 Other General Purpose Machinery Manufacturing
3351 Electric Lighting Equipment Manufacturing

Social Services

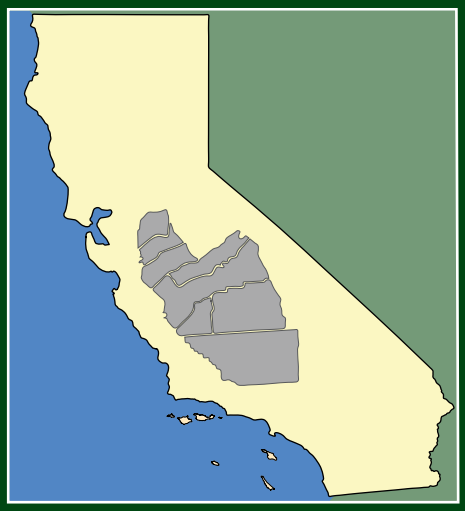
6241 Individual and Family Services
6242 Community Food and Housing, and Emergency and Other Relief Services
6243 Vocational Rehabilitation Services
6244 Child Day Care Services

Transportation and Logistics

3365 Railroad Rolling Stock Manufacturing
3366 Ship and Boat Building
4811 Scheduled Air Transportation
4812 Nonscheduled Air Transportation
4821 Rail Transportation
4831 Deep Sea, Coastal, and Great Lakes Water Transportation
4832 Inland Water Transportation
4841 General Freight Trucking
4842 Specialized Freight Trucking
4851 Urban Transit Systems
4852 Interurban and Rural Bus Transportation
4853 Taxi and Limousine Service
4854 School and Employee Bus Transportation
4855 Charter Bus Industry
4859 Other Transit and Ground Passenger Transportation
4881 Support Activities for Air Transportation
4882 Support Activities for Rail Transportation
4883 Support Activities for Water Transportation
4884 Support Activities for Road Transportation
4885 Freight Transportation Arrangement
4889 Other Support Activities for Transportation
4921 Couriers and Express Delivery Services
4922 Local Messengers and Local Delivery
4931 Warehousing and Storage
5321 Automotive Equipment Rental and Leasing
8113 Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance

Financial Services and Real Estate

5211 Monetary Authorities-Central Bank
5221 Depository Credit Intermediation
5222 Nondepository Credit Intermediation
5223 Activities Related to Credit Intermediation
5231 Securities and Commodity Contracts Intermediation and Brokerage
5232 Securities and Commodity Exchanges
5239 Other Financial Investment Activities
5241 Insurance Carriers
5242 Agencies, Brokerages, and Other Insurance Related Activities
5251 Insurance and Employee Benefit Funds
5259 Other Investment Pools and Funds
5311 Lessors of Real Estate
5312 Offices of Real Estate Agents and Brokers
5313 Activities Related to Real Estate



Occupational Analysis: Agriculture, Food, and Beverage Processing Cluster

San Joaquin Valley Economic Market

April 2015

Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties

EDD Employment Development Department
State of California

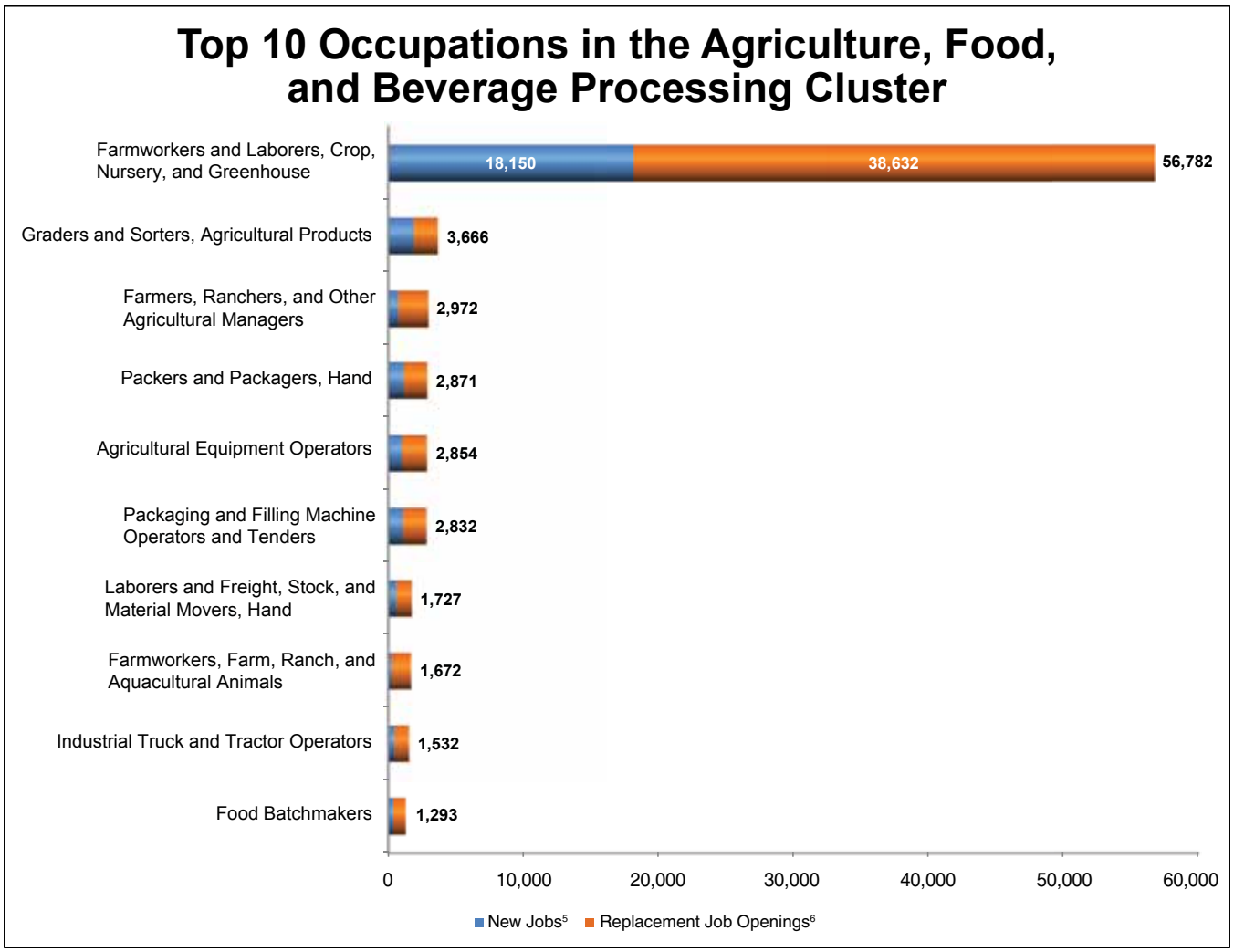
LaborMarketinfo
www.labormarketinfo.edd.ca.gov

What is the Agriculture, Food, and Beverage Processing Cluster?

The Agriculture, Food, and Beverage Processing cluster is comprised of 26 industries related to crop and animal farming as well as food and beverage manufacturing. The workers employed within this cluster span all skill levels and share skills and work activities both within the cluster and in many other industry clusters, suggesting the potential for skills transference and upward mobility with additional training.

Top 10 Occupations in the Agriculture, Food, and Beverage Processing Cluster

The graph below identifies the top 10 occupations in the Agriculture, Food, and Beverage Processing cluster, based on the San Joaquin Valley Economic Market's new job growth plus replacement openings. In sum, these 10 occupations represent more than three-quarters of the 102,026 total job openings projected in this cluster between 2012 and 2022. Moreover, many share the same required skills such as coordination, active listening, critical thinking, and monitoring.[4]



Source: California Employment Development Department, Projections of Employment 2012-2022. Industry and occupational employment projections for 2012-2022 in this report may not be directly comparable to the published 2012-2022 employment projections available online at [www.labormarketinfo.edd.ca.gov.](http://www.labormarketinfo.edd.ca.gov)

[4] U.S. Department of Labor's *Occupational Information Network (O*NET)* at www.onetonline.org.
[5] New jobs are only openings due to growth and do not include job declines. If an occupation's employment change is negative, there is no job growth and new jobs are set to zero.
[6] Replacement job openings estimate the number of job openings created when workers retire or permanently leave an occupation and need to be replaced.

Top 10 Occupations and Recent Job Demand in the Agriculture, Food, and Beverage Processing Cluster

The table below further profiles the San Joaquin Valley Economic Market's top 10 occupations in the Agriculture, Food, and Beverage Processing cluster by listing the total job openings for 2012-2022, median hourly and annual wages, and entry-level education requirements. Also included are online job advertisements extracted from The Conference Board Help Wanted OnLine™ (HWOL) data series over a recent 120-day period. HWOL compiles, analyzes, and categorizes job advertisements from numerous online job boards, including CalJOBS℠ (www.caljobs.ca.gov), California's online job listing system.

Occupations	Total Job Openings[7] (2012-2022)	Median Hourly Wage (2014)	Median Annual Wage (2014)	Entry Level Education[8]	HWOL Job Ads[9] (120 days)
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	56,782	$9.14	$19,007	Less than high school	109
Graders and Sorters, Agricultural Products	3,666	$9.17	$19,067	Less than high school	9
Farmers, Ranchers, and Other Agricultural Managers	2,972	$43.44	$90,360	High school diploma or equivalent	86
Packers and Packagers, Hand	2,871	$9.58	$19,918	Less than high school	71
Agricultural Equipment Operators	2,854	$10.33	$21,489	Less than high school	44
Packaging and Filling Machine Operators and Tenders	2,832	$14.13	$29,388	High school diploma or equivalent	79
Laborers and Freight, Stock, and Material Movers, Hand	1,727	$11.71	$24,354	Less than high school	929
Farmworkers, Farm, Ranch, and Aquacultural Animals	1,672	$11.76	$24,465	Less than high school	140
Industrial Truck and Tractor Operators	1,532	$14.71	$30,615	Less than high school	606
Food Batchmakers	1,293	$14.84	$30,858	High school diploma or equivalent	17

Source: California Employment Development Department, Projections of Employment 2012-2022; Occupational Employment Statistics Wage Survey, updated to 4th Q, 2014; The Conference Board Help Wanted OnLine™ (HWOL) Data Series, 120-day period ending April 22, 2015.

[7] Total job openings are the sum of new jobs and replacement job openings.
[8] U.S. Department of Labor, Bureau of Labor Statistics (BLS) 2012 education levels.
[9] Totals represent job advertisements from employers in all industries. One job opening may be represented in more than one job advertisement.

Top Occupations for the Agriculture, Food, and Beverage Processing Cluster by Education Level

The table below identifies the occupations with the most total job openings, categorized by Bureau of Labor Statistics (BLS) 2012 entry-level education requirements, within the Agriculture, Food, and Beverage Processing cluster. The table includes the San Joaquin Valley Economic Market's projected total job openings and median hourly and annual wages. In addition, recent totals of online job advertisements over 120-day period are included. Grouping occupations by education levels allows individuals to better gauge the potential for skills transference and upward mobility within the cluster.

Occupations	Total Job Openings[10] (2012-2022)	Median Hourly Wage (2014)	Median Annual Wage (2014)	HWOL Job Ads (120 days)
Requires a Bachelor's Degree or Higher				
General and Operations Managers	464	$42.57	$88,551	507
Accountants and Auditors	327	$30.15	$62,712	988
Industrial Production Managers	310	$40.25	$83,713	108
Food Scientists and Technologists	176	$28.35	$58,983	34
Financial Managers	141	$45.97	$95,634	437
Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree				
Heavy and Tractor-Trailer Truck Drivers	729	$18.87	$39,256	7,752
First-Line Supervisors of Production and Operating Workers	601	$26.65	$55,427	1,239
Agricultural and Food Science Technicians	294	$16.98	$35,320	47
Electrical and Electronics Repairers, Commercial and Industrial Equipment	48	$28.57	$59,423	28
Computer User Support Specialists	29	$24.02	$49,946	1,017
Requires a High School Diploma or Equivalent or Less				
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	56,782	$9.14	$19,007	109
Graders and Sorters, Agricultural Products	3,666	$9.17	$19,067	9
Farmers, Ranchers, and Other Agricultural Managers	2,972	$43.44	$90,360	86
Packers and Packagers, Hand	2,871	$9.58	$19,918	71
Agricultural Equipment Operators	2,854	$10.33	$21,489	44

Source: California Employment Development Department, Projections of Employment 2012-2022; Occupational Employment Statistics Wage Survey, updated to 4th Q, 2014; The Conference Board Help Wanted OnLine™ (HWOL) Data Series, 120-day period ending April 22, 2015.

[10] Total job openings are the sum of new jobs and replacement job openings.

Skill Requirements in the Agriculture, Food, and Beverage Processing Cluster

The table below lists the 10 top skills required for top occupations in the Agriculture, Food, and Beverage Processing cluster, categorized by entry-level education requirements. Critical thinking and active listening are the most commonly shared skills, followed by monitoring, speaking, and reading comprehension. The skills and work activities identified for each occupation are from the U.S. Department of Labor's Occupational Information Network (O*NET).

Occupations	Skills																										
	Active Learning	Active Listening	Complex Problem Solving	Coordination	Critical Thinking	Equipment Maintenance	Instructing	Judgment and Decision Making	Learning Strategies	Management of Personnel Resources	Mathematics	Monitoring	Negotiation	Operation and Control	Operation Monitoring	Persuasion	Quality Control Analysis	Reading Comprehension	Repairing	Science	Service Orientation	Social Perceptiveness	Speaking	Systems Analysis	Time Management	Troubleshooting	Writing
Requires a Bachelor's Degree or Higher																											
General and Operations Managers	●	●		●	●					●		●						●				●	●				●
Accountants and Auditors[11]	●	●			●			●			●	●						●					●	●			●
Industrial Production Managers	●	●		●	●			●		●		●						●					●		●		
Food Scientists and Technologists	●	●	●	●	●			●				●						●					●				●
Financial Managers[12]	●	●			●				●			●				●		●				●	●				●
Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree																											
Heavy and Tractor-Trailer Truck Drivers		●	●		●	●						●		●	●			●					●		●		
First-Line Supervisors of Production and Operating Workers		●		●	●					●		●						●				●	●		●		●
Agricultural and Food Science Technicians[13]	●	●			●		●				●	●						●		●			●				●
Electrical and Electronics Repairers, Commercial and Industrial Equipment		●	●		●	●								●	●		●	●	●							●	
Computer User Support Specialists	●	●		●	●		●					●						●			●		●				●
Requires a High School Diploma or Equivalent or Less																											
Farmworkers and Laborers, Crop, Nursery, and Greenhouse[14]		●		●	●	●	●			●		●		●	●				●								
Graders and Sorters, Agricultural Products		●	●	●	●			●				●				●						●	●		●		
Farmers, Ranchers, and Other Agricultural Managers[15]				●	●			●			●	●	●			●		●					●		●		
Packers and Packagers, Hand		●		●	●			●				●					●	●					●		●		●
Agricultural Equipment Operators		●		●	●	●								●	●		●		●				●			●	

*Source: U.S. Department of Labor's Occupational Information Network (O*NET) at www.onetonline.org.*

[11] Skills represent Accountants, a specialty occupation of Accountants and Auditors.
[12] Skills represent Financial Managers, Branch or Department, a specialty occupation of Financial Managers.
[13] Skills represent Food Science Technicians, a specialty occupation of Agricultural and Food Science Technicians.
[14] Skills represent Farmworkers and Laborers, Crop, a specialty occupation of Farmworkers and Laborers, Crop, Nursery, and Greenhouse.
[15] Skills represent Farm and Ranch Managers, a specialty occupation of Farmers, Ranchers, and Other Agricultural Managers.

Work Activities in the Agriculture, Food, and Beverage Processing Cluster

The table below lists the 10 top work activities required for top occupations in the Agriculture, Food, and Beverage Processing cluster, categorized by entry-level education requirements. The most common include organizing, planning, and prioritizing work; establishing and maintaining interpersonal relationships; making decisions and solving problems; and communicating with supervisors, peers, or subordinates.

Occupations	Work Activities																														
	Analyzing Data or Information	Coaching and Developing Others	Communicating with Persons Outside Organization	Communicating with Supervisors, Peers, or Subordinates	Controlling Machines and Processes	Coordinating the Work and Activities of Others	Developing Objectives and Strategies	Documenting/Recording Information	Establishing and Maintaining Interpersonal Relationships	Evaluating Information to Determine Compliance with Standards	Getting Information	Guiding, Directing, and Motivating Subordinates	Handling and Moving Objects	Identifying Objects, Actions, and Events	Inspecting Equipment, Structures, or Material	Interacting With Computers	Making Decisions and Solving Problems	Monitor Processes, Materials, or Surroundings	Monitoring and Controlling Resources	Operating Vehicles, Mechanized Devices, or Equipment	Organizing, Planning, and Prioritizing Work	Performing Administrative Activities	Performing General Physical Activities	Processing Information	Provide Consultation and Advice to Others	Repairing and Maintaining Electronic Equipment	Repairing and Maintaining Mechanical Equipment	Resolving Conflicts and Negotiating with Others	Scheduling Work and Activities	Thinking Creatively	Training and Teaching Others	Updating and Using Relevant Knowledge
Requires a Bachelor's Degree or Higher																															
General and Operations Managers			●	●		●			●								●		●		●							●	●	●		
Accountants and Auditors[16]	●			●					●	●	●						●				●	●		●							●
Industrial Production Managers				●		●			●			●					●	●	●		●							●	●			
Food Scientists and Technologists	●					●					●			●			●	●			●			●						●		●
Financial Managers[17]		●		●		●			●			●				●	●				●							●				●
Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree																															
Heavy and Tractor-Trailer Truck Drivers					●				●		●		●	●	●		●			●	●		●								
First-Line Supervisors of Production and Operating Workers		●		●	●	●			●			●	●												●			●	●		
Agricultural and Food Science Technicians[18]	●			●					●	●			●	●			●				●			●							●
Electrical and Electronics Repairers, Commercial and Industrial Equipment				●				●	●				●				●	●			●					●	●				●
Computer User Support Specialists				●					●		●			●		●	●				●			●						●		●
Requires a High School Diploma or Equivalent or Less																															
Farmworkers and Laborers, Crop, Nursery, and Greenhouse[19]					●				●		●	●	●	●						●			●							●	●
Graders and Sorters, Agricultural Products				●	●	●			●		●		●		●						●		●								●
Farmers, Ranchers, and Other Agricultural Managers[20]							●				●		●				●		●	●	●		●							●		●
Packers and Packagers, Hand				●	●				●		●		●	●				●			●		●					●				
Agricultural Equipment Operators					●						●		●		●		●	●		●	●		●				●					

*Source: U.S. Department of Labor's Occupational Information Network (O*NET) at www.onetonline.org.*

[16] Work Activities listed represent Accountants, a specialty occupation of Accountants and Auditors.
[17] Work Activities listed represent Financial Managers, Branch or Department, a specialty occupation of Financial Managers.
[18] Work Activities listed represent Food Science Technicians, a specialty occupation of Agricultural and Food Science Technicians.
[19] Work Activities listed represent Farmworkers and Laborers, Crop, a specialty occupation of Farmworkers and Laborers, Crop, Nursery and Greenhouse.
[20] Work Activities listed represent Farm and Ranch Managers, a specialty occupation of Farmers, Ranchers, and Other Agricultural Managers.

Related Occupations for the Agriculture, Food, and Beverage Processing Cluster

The table below lists top occupations in the Agriculture, Food, and Beverage Processing cluster by entry-level education requirements and provides a sample of related occupations. These related occupations match many of the skills, education, and work experience needed for the top Agriculture, Food, and Beverage Processing cluster occupations.

Agriculture, Food, and Beverage Processing Occupations	Related Occupations
Requires a Bachelor's Degree or Higher	
General and Operations Managers	• Administrative Services Managers • First-Line Supervisors of Office and Administrative Support Workers • Logistics Managers
Accountants and Auditors	• Auditors • Budget Analysts • Financial Analysts
Industrial Production Managers	• First-Line Supervisors of Production and Operating Workers • Food Service Managers • General and Operations Managers
Food Scientists and Technologists	• Agricultural Engineers • Biochemical Engineers • Validation Engineers
Financial Managers	• Marketing Managers • Public Relations and Fundraising Managers • Sales Agents, Financial Services
Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree	
Heavy and Tractor-Trailer Truck Drivers	• Excavating and Loading Machine and Dragline Operators • Highway Maintenance Workers • Paving, Surfacing, and Tamping Equipment Operators
First-Line Supervisors of Production and Operating Workers	• Aircraft Cargo Handling Supervisors • Industrial Production Managers • Non-Destructive Testing Specialists
Agricultural and Food Science Technicians	• Agricultural Inspectors • Biological Technicians • Chemical Technicians
Electrical and Electronics Repairers, Commercial and Industrial Equipment	• Industrial Machinery Mechanics • Manufacturing Production Technicians • Robotics Technicians
Computer User Support Specialists	• Audio and Video Equipment Technicians • Broadcast Technicians • Computer Operators
Requires a High School Diploma or Equivalent or Less	
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	• Helpers-Painters, Paperhangers, Plasterers, and Stucco Masons • Janitors and Cleaners, Except Maids and Housekeeping Cleaners • Landscaping and Groundskeeping Workers
Graders and Sorters, Agricultural Products	• Dishwashers • Food Preparation Workers • Stock Clerks-Stockroom, Warehouse, or Storage Yard
Farmers, Ranchers, and Other Agricultural Managers	• Aquacultural Managers • Forest and Conservation Workers • Industrial Production Managers
Packers and Packagers, Hand	• Cooks, Fast Food • Cooks, Restaurant • Inspectors, Testers, Sorters, Samplers, and Weighers
Agricultural Equipment Operators	• Dredge Operators • Pile-Driver Operators • Riggers

*Source: U.S. Department of Labor's Occupational Information Network (O*NET) at www.onetonline.org.*

Employer Demand for the Agriculture, Food, and Beverage Processing Cluster

The following table lists the San Joaquin Valley Economic Market employers in the Agriculture, Food, and Beverage Processing cluster who posted the most job advertisements during the 120-day period ending April 22, 2015. The table also includes the number of job advertisements from the previous year's period, as well as the numerical change and year-over percent change in these postings for the same 120-day period.

Agriculture, Food, and Beverage Processing Cluster Employers	**Recent Job Advertisements**[21] (120-day period)	**Prior Year Job Advertisements** (120-day period)	**Numerical Change**	**Year-Over Percent Change** (HWOL Job Advertisements)
Paramount Citrus	66	74	-8	-10.8%
Foster Farms	59	98	-39	-39.8%
Constellation Brands, Inc.	54	17	37	217.6%
E. & J. Gallo Winery	53	151	-98	-64.9%
Paramount Farms	46	4	42	1,050.0%
Dole Packaged Food, LLC	45	29	16	55.2%
Delicato Family Vineyards	33	38	-5	-13.2%
Coca-Cola Refreshments	31	40	-9	-22.5%
Land O' Lakes	29	29	0	0.0%
Diamond Foods	28	15	13	86.7%
Pepsico	28	26	2	7.7%
Bimbo Bakeries	24	10	14	140.0%
Grimmway Farms	24	35	-11	-31.4%
Kraft	20	14	6	42.9%
Neil Jones Food Company	19	19	0	0.0%
The Wine Group	18	47	-29	-61.7%
Nestle	16	22	-6	-27.3%
Joseph Gallo Farms	15	16	-1	-6.3%
American Bread Co dba Panera Bread	14	1	13	1,300.0%
ConAgra	14	8	6	75.0%

Source: The Conference Board Help Wanted OnLine™ (HWOL) Data Series: Period ending April 22, 2015.

[21] Totals do not include employers with anonymous job advertisements.

Instructional Programs for the Top Top Agriculture, Food, and Beverage Processing Cluster Occupations

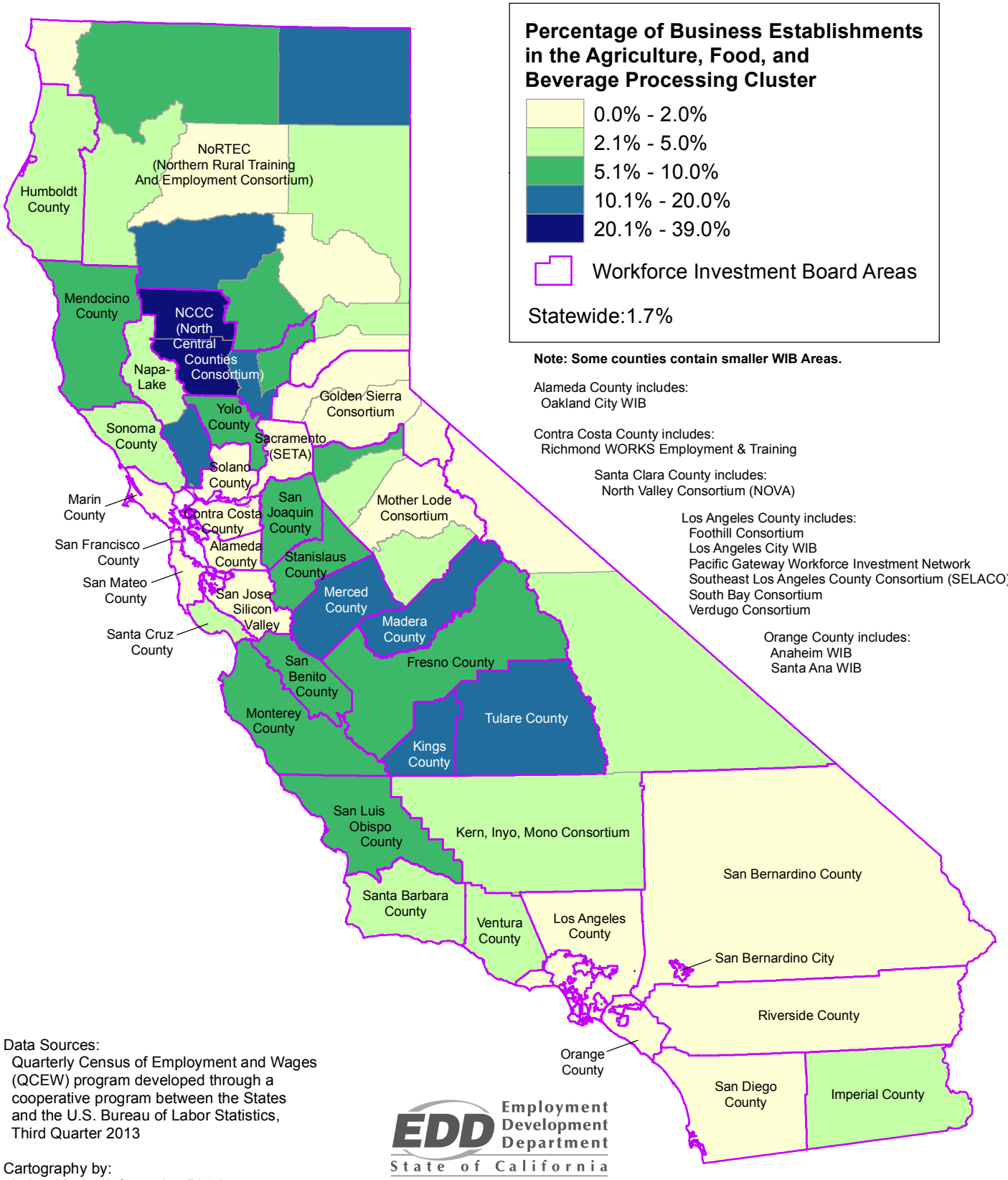
The table below provides examples of instructional programs related to some of the top occupations in the Agriculture, Food, and Beverage Processing cluster, particularly those that require less than a bachelor's degree. These programs train individuals for occupations throughout many industries and are not limited to the Agriculture, Food, and Beverage Processing cluster. To view a more complete list of training programs, select the source links under the table below. The Taxonomy of Programs categorizes and describes instructional programs only for California Community Colleges.

Occupations	Classification of Instructional Program (CIP)		Taxonomy of Programs (TOP)	
	CIP Code	*CIP Title*	*TOP Code*	*TOP Title*
Agricultural and Food Science Technicians	01.1002	Food Technology and Processing	011300	Food Processing and Related Technologies
Agricultural Equipment Operators	01.0204	Agricultural Power Machinery Operation	N/A	N/A
Computer User Support Specialists	01.0106 11.1006 51.0709	Agricultural Business Technology Computer Support Specialist Medical Office Computer Specialist/ Assistant	070820	Computer Support
Electrical and Electronics Repairers, Commercial and Industrial Equipment	47.0104 47.0105	Computer Installation and Repair Technology/Technician Industrial Electronics Technology/ Technician	093410 093420	Computer Electronics Industrial Electronics
Farmers, Ranchers, and Other Agricultural Managers	01.0101 01.0104 01.1106	Agricultural Business and Management, General Farm/Farm and Ranch Management Range Science and Management	010200 010300 010900	Animal Science Plant Science Horticulture
First-Line Supervisors of Production and Operating Workers	52.0205	Operations Management and Supervision	N/A	N/A
Graders and Sorters, Agricultural Products	01.0105	Agricultural/Farm Supplies Retailing and Wholesaling	N/A	N/A
Heavy and Tractor-Trailer Truck Drivers	49.0205	Truck and Bus Driver/Commercial Vehicle Operator and Instructor	094750	Truck and Bus Driving

Source: U.S. Department of Education Integrated Postsecondary Education Data System (IPEDS) at www.nces.ed.gov; California Community Colleges TOP-to-CIP Crosswalk 7th Edition (2010), www.cccco.edu.

California Agriculture, Food, and Beverage Processing Cluster

Percentage of Total County Establishments, 2013



Data Sources:
Quarterly Census of Employment and Wages (QCEW) program developed through a cooperative program between the States and the U.S. Bureau of Labor Statistics, Third Quarter 2013

Cartography by:
Labor Market Information Division
California Employment Development Department
http://www.labormarketinfo.edd.ca.gov
July 2014

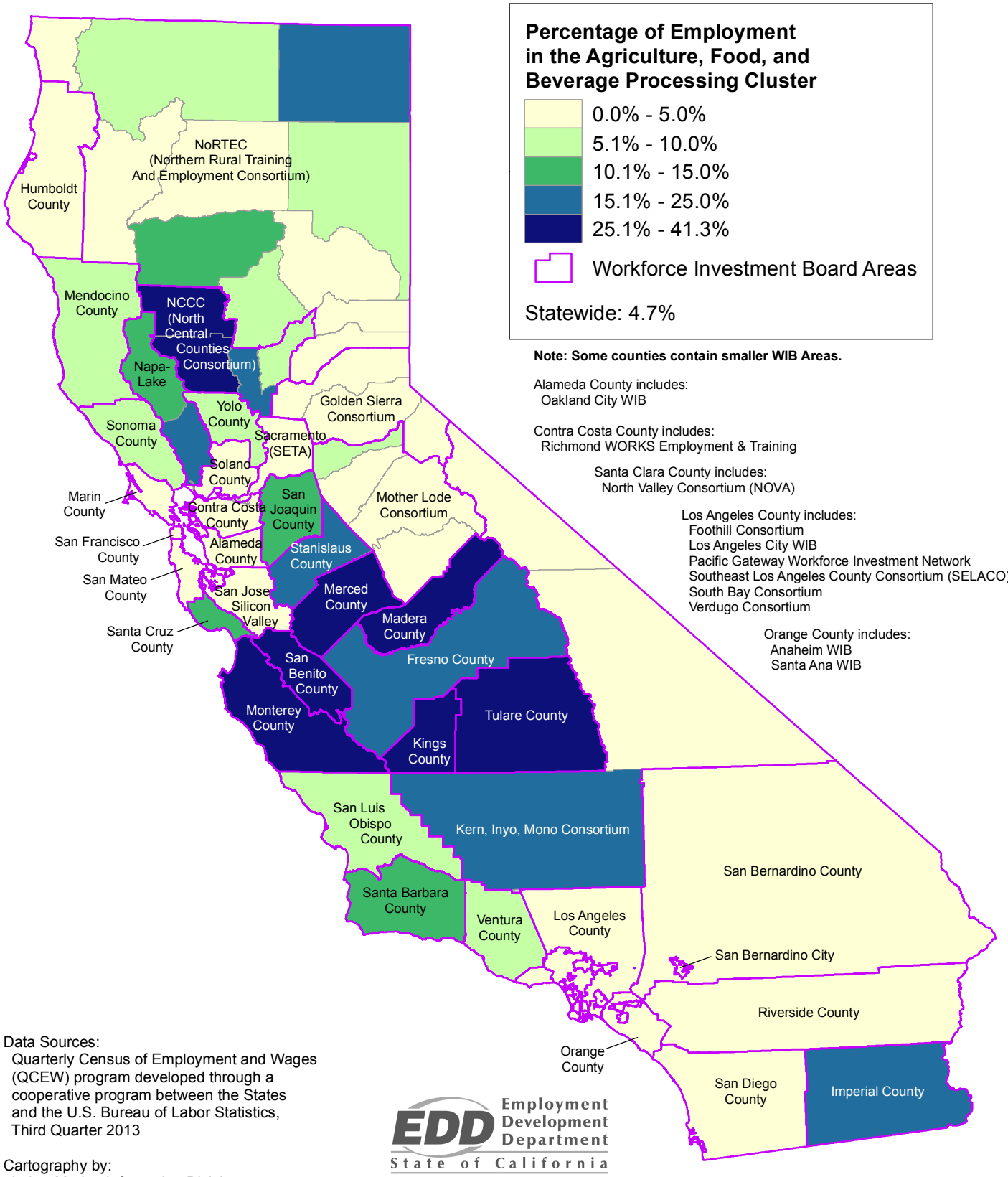
EDD Employment Development Department
State of California

LaborMarketInfo

File T036

California Agriculture, Food, and Beverage Processing Cluster

Percentage of Total County Employment, 2013



Data Sources:
Quarterly Census of Employment and Wages (QCEW) program developed through a cooperative program between the States and the U.S. Bureau of Labor Statistics, Third Quarter 2013

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July 2014

EDD Employment Development Department State of California

LaborMarketInfo

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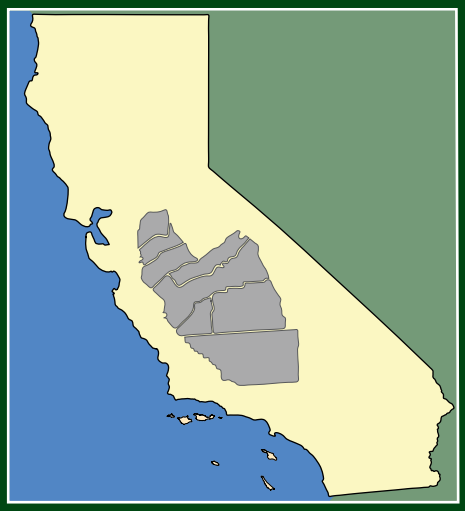


Occupational Analysis: Retail Cluster

San Joaquin Valley Economic Market

April 2015

Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties

EDD Employment Development Department
State of California

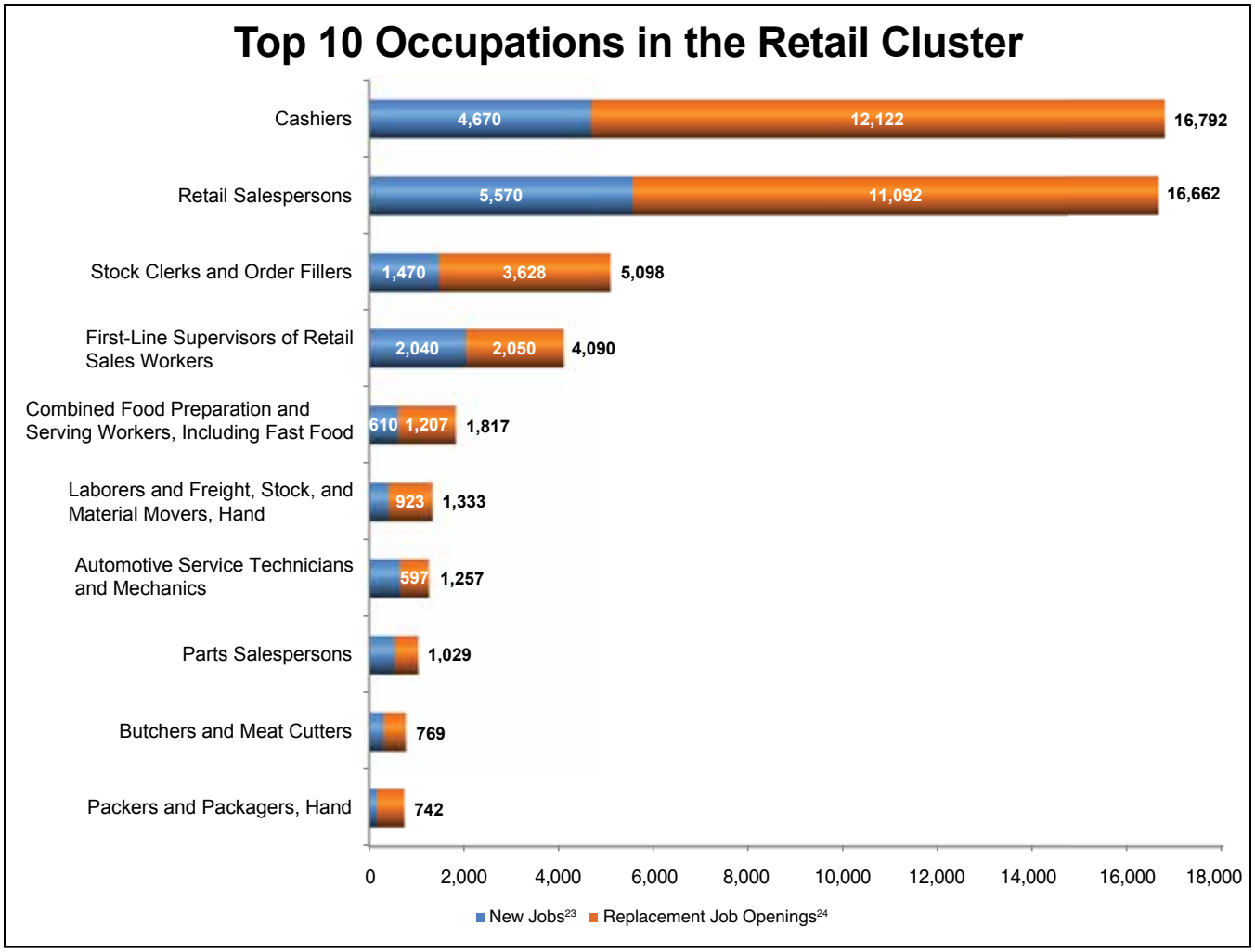
LaborMarketinfo
www.labormarketinfo.edd.ca.gov

What is the Retail Cluster?

The Retail cluster is composed of 19 industries involved in the sales of goods both familiar and esoteric, everything from groceries and automobiles to musical instruments and surfboards. The workers employed within this cluster span all skill levels and share skills and work activities both within the cluster and in many other industry clusters, suggesting the potential for skills transference and upward mobility with additional .

Top 10 Occupations in the Retail Cluster

The graph below identifies the top 10 occupations in the Retail cluster, based on the San Joaquin Valley Economic Market's new job growth plus replacement openings. In sum, these 10 occupations represent more than three-quarters of the 63,305 total job openings projected in this cluster between 2012 and 2022. Moreover, many share the same required skills such as active listening, critical thinking, reading comprehension, and speaking.[22]



Source: California Employment Development Department, Projections of Employment 2012-2022. Industry and occupational employment projections for 2012-2022 in this report may not be directly comparable to the published 2012-2022 employment projections available online at www.labormarketinfo.edd.ca.gov.

[22] U.S. Department of Labor's *Occupational Information Network (O*NET)* at www.onetonline.org.
[23] New jobs are only openings due to growth and do not include job declines. If an occupation's employment change is negative, there is no job growth and new jobs are set to zero.
[24] Replacement job openings estimate the number of job openings created when workers retire or permanently leave an occupation and need to be replaced.

Top 10 Occupations and Recent Job Demand in the Retail Cluster

The table below further profiles the San Joaquin Valley Economic Market's top 10 occupations in the Retail cluster by listing the total job openings for 2012-2022, median hourly and annual wages, and entry-level education requirements. Also included are online job advertisements extracted from The Conference Board Help Wanted OnLine™ (HWOL) data series over a 120-day period. HWOL compiles, analyzes, and categorizes job advertisements from numerous online job boards, including CalJOBS℠ (www.caljobs.ca.gov), California's online job listing system.

Occupations	Total Job Openings[25] (2012-2022)	Median Hourly Wage (2014)	Median Annual Wage (2014)	Entry Level Education[26]	HWOL Job Ads[27] (120 days)
Cashiers	16,792	$9.77	$20,323	Less than high school	649
Retail Salespersons	16,662	$10.58	$21,991	Less than high school	2,463
Stock Clerks and Order Fillers	5,098	$11.21	$23,314	Less than high school	933
First-Line Supervisors of Retail Sales Workers	4,090	$18.40	$38,272	High school diploma or equivalent	2,130
Combined Food Preparation and Serving Workers, Including Fast Food	1,817	$9.30	$19,333	Less than high school	819
Laborers and Freight, Stock, and Material Movers, Hand	1,333	$11.71	$24,354	Less than high school	929
Automotive Service Technicians and Mechanics	1,257	$17.91	$37,270	High school diploma or equivalent	878
Parts Salespersons	1,029	$14.04	$29,213	Less than high school	114
Butchers and Meat Cutters	769	$13.01	$27,061	Less than high school	18
Packers and Packagers, Hand	742	$9.58	$19,918	Less than high school	71

Source: California Employment Development Department, Projections of Employment 2012-2022; Occupational Employment Statistics Wage Survey, updated to 4th Q, 2014; The Conference Board Help Wanted OnLine™ (HWOL) Data Series, 120-day period ending April 22, 2015.

[25] Total job openings are the sum of new jobs and replacement job openings.
[26] U.S. Department of Labor, Bureau of Labor Statistics (BLS) 2012 education levels.
[27] Totals represent job advertisements from employers in all industries. One job opening may be represented in more than one job advertisement.

Top Occupations for the Retail Cluster by Education Level

The table below identifies the occupations with the most total job openings, categorized by Bureau of Labor Statistics (BLS) 2012 entry-level education requirements, within the Retail cluster. The table includes the San Joaquin Valley Economic Market's projected total job openings and median hourly and annual wages. In addition, recent totals of online job advertisements over 120-day period are included. Grouping occupations by education levels allows individuals to better gauge the potential for skills transference and upward mobility within the cluster.

Occupations	Total Job Openings[28] (2012-2022)	Median Hourly Wage (2014)	Median Annual Wage (2014)	HWOL Job Ads (120 days)
Requires a Bachelor's Degree or Higher				
General and Operations Managers	684	$42.57	$88,551	507
Pharmacists	537	$67.15	$139,678	349
Sales Managers	403	$39.75	$82,687	520
Loan Officers	88	$36.34	$75,571	449
Accountants and Auditors	56	$30.15	$62,712	988
Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree				
First-Line Supervisors of	94	$26.65	$55,427	1,239
Heavy and Tractor-Trailer Truck	88	$18.87	$39,256	7,752
Computer, Automated Teller, and Office Machine Repairers	64	$19.37	$40,282	20
Hairdressers, Hairstylists, and Cosmetologists	54	$10.06	$20,913	524
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	35	$21.51	$44,747	500
Requires a High School Diploma or Equivalent or Less				
Cashiers	16,792	$9.77	$20,323	649
Retail Salespersons	16,662	$10.58	$21,991	2,463
Stock Clerks and Order Fillers	5,098	$11.21	$23,314	933
First-Line Supervisors of Retail	4,090	$18.40	$38,272	2,130
Combined Food Preparation and Serving Workers, Including Fast Food	1,817	$9.30	$19,333	819

Source: California Employment Development Department, Projections of Employment 2012-2022; Occupational Employment Statistics Wage Survey, updated to 4th Q, 2014; The Conference Board Help Wanted OnLine™ (HWOL) Data Series, 120-day period ending April 22, 2015.

[28] Total job openings are the sum of new jobs and replacement job openings.

Skill Requirements in the Retail Cluster

The table below lists the 10 top skills required for top occupations in the Retail cluster, categorized by entry-level education requirements. Critical thinking and speaking are the most commonly shared skills, followed by active listening and reading comprehension. The skills and work activities identified for each occupation are from the U.S. Department of Labor's Occupational Information Network (O*NET).

Occupations	Skills																										
	Active Learning	Active Listening	Complex Problem Solving	Coordination	Critical Thinking	Equipment Maintenance	Installation	Instructing	Judgment and Decision Making	Learning Strategies	Management of Personnel Resources	Mathematics	Monitoring	Negotiation	Operation and Control	Operation Monitoring	Persuasion	Quality Control Analysis	Reading Comprehension	Repairing	Science	Service Orientation	Social Perceptiveness	Speaking	Systems Analysis	Time Management	Troubleshooting	Writing
Requires a Bachelor's Degree or Higher																											
General and Operations Managers	●	●		●	●						●		●						●				●	●				●
Pharmacists	●	●			●			●					●						●		●		●	●				●
Sales Managers				●	●				●		●		●				●						●	●		●		●
Loan Officers	●	●	●		●				●			●							●			●		●				●
Accountants and Auditors[29]	●	●			●				●			●	●						●					●	●			●
Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree																											
First-Line Supervisors of Production and Operating Workers		●		●	●						●		●						●				●	●		●		●
Heavy and Tractor-Trailer Truck Drivers		●	●		●	●							●		●	●			●					●		●		
Computer, Automated Teller, and Office Machine Repairers	●	●			●								●		●	●			●	●				●			●	
Hairdressers, Hairstylists, and Cosmetologists	●	●			●			●		●			●				●					●	●	●				
Heating, Air Conditioning, and Refrigeration Mechanics and Installers[30]		●		●	●	●	●											●	●	●				●			●	
Requires a High School Diploma or Equivalent or Less																											
Cashiers		●		●	●								●						●			●	●	●		●		●
Retail Salespersons		●			●								●	●			●		●			●	●	●				●
Stock Clerks and Order Fillers[31]	●	●	●	●	●								●						●			●	●	●				
First-Line Supervisors of Retail Sales Workers					●			●			●		●	●			●		●				●	●		●		
Combined Food Preparation and Serving Workers, Including Fast Food		●		●	●			●		●							●		●			●	●	●				

*Source: U.S. Department of Labor's Occupational Information Network (O*NET) at www.onetonline.org.*

[29] Skills represent Accountants, a specialty occupation of Accountants and Auditors.
[30] Skills represent Heating and Air Conditioning Mechanics and Installers, a specialty occupation of Heating, Air Conditioning, and Refrigeration Mechanics and Installers.
[31] Skills represent Stock Clerks, Sales Floor, a specialty occupation of Stock Clerks and Order Fillers.

Work Activities in the Retail Cluster

The table below lists the 10 top work activities required for top occupations in the Retail cluster, categorized by entry-level education requirements. The most common include establishing and maintaining interpersonal relationships; organizing, planning, and prioritizing work; communicating with supervisors, peers, or subordinates; and making decisions and solving problems.

Occupations	Work Activities																														
	Analyzing Data or Information	Assisting and Caring for Others	Coaching and Developing Others	Communicating with Persons Outside Organization	Communicating with Supervisors, Peers, or Subordinates	Controlling Machines and Processes	Coordinating the Work and Activities of Others	Establishing and Maintaining Interpersonal Relationships	Evaluating Information to Determine Compliance with Standards	Getting Information	Guiding, Directing, and Motivating Subordinates	Handling and Moving Objects	Identifying Objects, Actions, and Events	Inspecting Equipment, Structures, or Material	Interacting With Computers	Making Decisions and Solving Problems	Monitor Processes, Materials, or Surroundings	Monitoring and Controlling Resources	Operating Vehicles, Mechanized Devices, or Equipment	Organizing, Planning, and Prioritizing Work	Performing Administrative Activities	Performing for or Working Directly with the Public	Performing General Physical Activities	Processing Information	Provide Consultation and Advice to Others	Repairing and Maintaining Electronic Equipment	Repairing and Maintaining Mechanical Equipment	Resolving Conflicts and Negotiating with Others	Scheduling Work and Activities	Selling or Influencing Others	Thinking Creatively	Training and Teaching Others	Updating and Using Relevant Knowledge
Requires a Bachelor's Degree or Higher																															
General and Operations Managers				●	●		●	●								●		●		●								●	●		●		
Pharmacists	●	●						●	●				●				●			●		●		●								●
Sales Managers			●	●	●		●	●			●					●				●								●		●			
Loan Officers				●				●		●						●				●		●		●	●			●					●
Accountants and Auditors[32]	●				●			●	●	●						●				●	●			●									●
Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree																															
First-Line Supervisors of Production and Operating Workers			●		●	●	●	●			●	●													●			●	●				
Heavy and Tractor-Trailer Truck Drivers						●		●		●		●	●	●		●			●	●			●										
Computer, Automated Teller, and Office Machine Repairers					●			●					●		●	●				●						●	●				●		●
Hairdressers, Hairstylists, and Cosmetologists		●		●				●		●		●								●		●			●					●		●
Heating, Air Conditioning, and Refrigeration Mechanics and Installers[33]	●					●						●		●		●				●			●			●	●					●
Requires a High School Diploma or Equivalent or Less																															
Cashiers				●	●			●		●		●				●						●	●					●		●			
Retail Salespersons				●	●			●				●				●				●		●								●	●		●
Stock Clerks and Order Fillers[34]					●	●		●				●	●							●		●	●								●	●
First-Line Supervisors of Retail Sales Workers			●		●			●		●		●				●				●		●						●	●				
Combined Food Preparation and Serving Workers, Including Fast Food			●		●		●	●		●		●	●									●						●			●		

*Source: U.S. Department of Labor's Occupational Information Network (O*NET) at www.onetonline.org.*

[32] Work Activities represent Accountants, a specialty occupation of Accountants and Auditors.
[33] Work Activities represent Heating and Air Conditioning Mechanics and Installers, a specialty occupation of Heating, Air Conditioning, and Refrigeration Mechanics and Installers.
[34] Work Activities represent Stock Clerks, Sales Floor, a specialty occupation of Stock Clerks and Order Fillers.

Related Occupations for the Retail Cluster

The table below lists top occupations in the Retail cluster by entry-level education requirements and provides a sample of related occupations. These related occupations match many of the skills, education, and work experience needed for the top Retail cluster occupations.

Retail Occupations	Related Occupations
Requires a Bachelor's Degree or Higher	
General and Operations Managers	• First-Line Supervisors of Office and Administrative Support Workers • Logistics Managers • Wholesale and Retail Buyers, Except Farm Products
Pharmacists	• Health Specialties Teachers, Postsecondary • Medical Scientists, Except Epidemiologists • Nursing Instructors and Teachers, Postsecondary
Sales Managers	• Financial Managers, Branch or Department • Logistics Managers • Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products
Loan Officers	• Customs Brokers • Insurance Sales Agents • Personal Financial Advisors
Accountants and Auditors	• Auditors • Financial Analysts • Risk Management Specialists
Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree	
First-Line Supervisors of Production and Operating Workers	• Non-Destructive Testing Specialists • Industrial Production Managers • Aircraft Cargo Handling Supervisors
Heavy and Tractor-Trailer Truck Drivers	• Pile-Driver Operators • Light Truck or Delivery Services Drivers • Paving, Surfacing, and Tamping Equipment Operators
Computer, Automated Teller, and Office Machine Repairers	• Computer User Support Specialists • Electrical Engineering Technicians • Audio and Video Equipment Technicians
Hairdressers, Hairstylists, and Cosmetologists	• Massage Therapists • Manicurists and Pedicurists • Skincare Specialists
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	• Electricians • Elevator Installers and Repairers • Refrigeration Mechanics and Installers
Requires a High School Diploma or Equivalent or Less	
Cashiers	• Amusement and Recreation Attendants • Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop • Waiters and Waitresses
Retail Salespersons	• Concierges • Counter and Renal Clerk • Tellers
Stock Clerks and Order Fillers	• Dining Room and Cafeteria Attendants and Bartender Helpers • Packers and Packagers, Hand • Shipping, Receiving, and Traffic Clerks
First-Line Supervisors of Retail Sales Workers	• First-Line Supervisors of Food Preparation and Serving Workers • Hotel, Motel, and Resort Desk Clerks • Wholesale and Retail Buyers, Except Farm Products
Combined Food Preparation and Serving Workers, Including Fast Food	• Cooks, Fast Food • Counter Attendants, Cafeteria, Food Concession, and Coffee Shop • Food Servers, Nonrestaurant

*Source: U.S. Department of Labor's Occupational Information Network (O*NET) at www.onetonline.org.*

Employer Demand for the Retail Cluster

The following table lists the San Joaquin Valley Economic Market employers in the Retail cluster who posted the most job advertisements during the 120-day period ending April 22, 2015. The table also includes the number of job advertisements from the previous year's period, as well as the numerical change and year-over percent change in these postings for the same 120-day period.

Retail Cluster Employers	**Recent Job Advertisements**[35] (120-day period)	**Prior Year Job Advertisements** (120-day period)	**Numerical Change**	**Year-Over Percent Change** (HWOL Job Advertisements)
Home Depot	251	73	178	243.8%
Macy's	221	101	120	118.8%
Lowe's	221	209	12	5.7%
Target Corporation	166	37	129	348.6%
Dollar Tree Stores, Inc.	126	28	98	350.0%
Sears Holdings Corporation	115	354	-239	-67.5%
Safeway Companies	89	5	84	1,680.0%
Walmart	85	43	42	97.7%
Rite Aid	68	49	19	38.8%
Love's Travel Stops	66	8	58	725.0%
JCPenney	58	32	26	81.3%
Office Depot	55	16	39	243.8%
Toys"R"Us	52	81	-29	-35.8%
Lithia Motors, Inc.	51	3	48	1,600.0%
WINCO FOODS	46	2	44	2,200.0%
Harbor Freight Tools	42	36	6	16.7%
Dick's Sporting Goods, Inc.	41	63	-22	-34.9%
Save Mart Supermarkets	40	51	-11	-21.6%
Staples	40	41	-1	-2.4%
The Dollar General	38	161	-123	-76.4%

Source: The Conference Board Help Wanted OnLine™ (HWOL) Data Series: Period ending April 22, 2015.

[35] Totals do not include employers with anonymous job advertisements.

Instructional Programs for the Top Retail Cluster Occupations

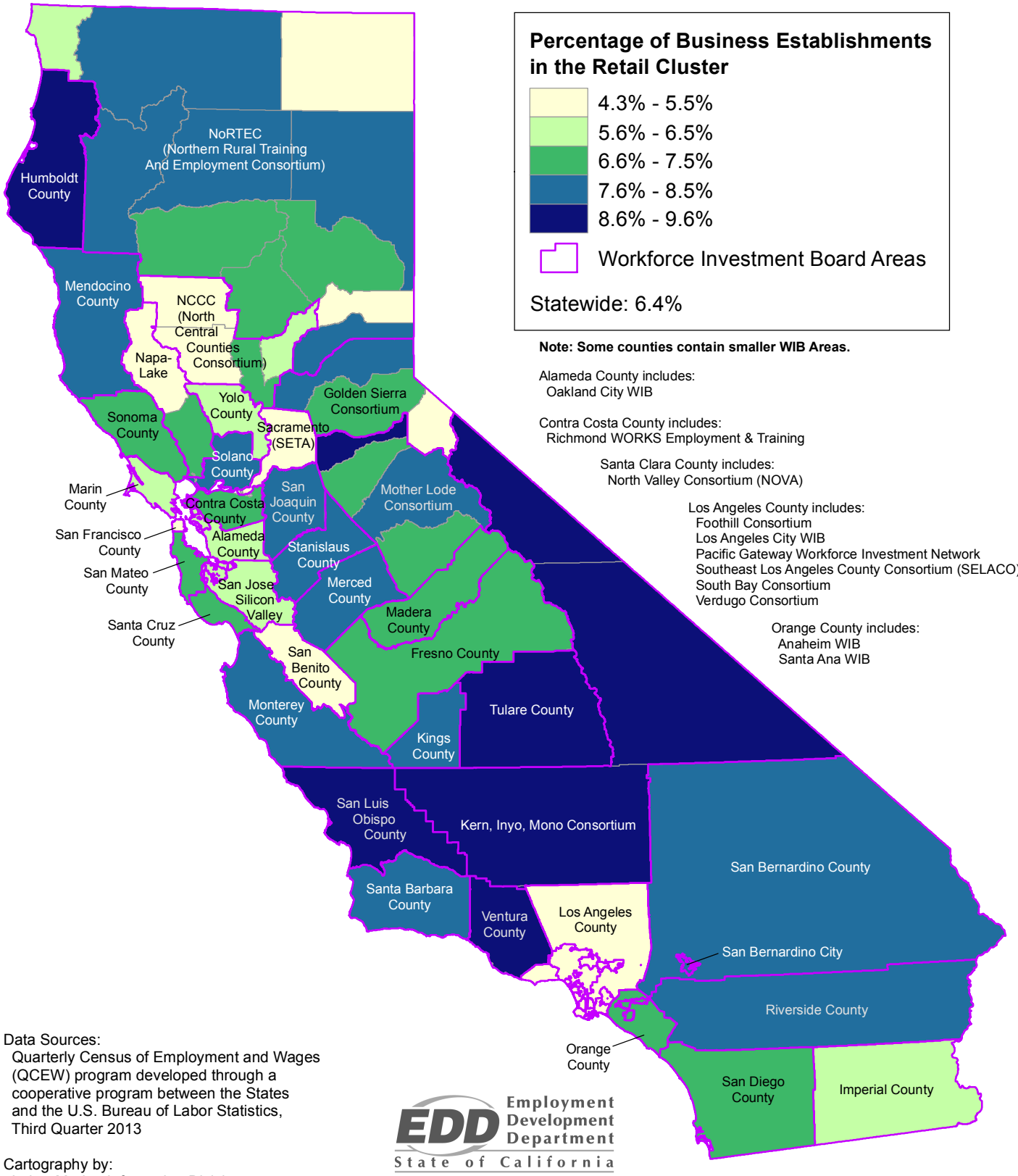
The table below provides examples of instructional programs related to some of the top occupations in the Retail cluster, particularly those that require less than a bachelor's degree. These programs train individuals for occupations throughout many industries and are not limited to the Retail cluster. To view a more complete list of training programs, select the source links under the table below. The Taxonomy of Programs categorizes and describes instructional programs only for California Community Colleges.

Occupations	Classification of Instructional Program (CIP)		Taxonomy of Programs (TOP)	
	CIP Code	*CIP Title*	*TOP Code*	*TOP Title*
First-Line Supervisors of Production and Operating Workers	52.0205	Operations Management and Supervision	N/A	N/A
Heavy and Tractor-Trailer Truck Drivers	49.0205	Truck and Bus Driver/ Commercial Vehicle Operator and Instructor	094750	Truck and Bus Driving
Computer, Automated Teller, and Office Machine Repairers	47.0102 47.0104	Business Machine Repair Computer Installation and Repair Technology/Technician	093410	Computer Electronics
Hairdressers, Hairstylists, and Cosmetologists	12.0401 12.0406 12.0412	Cosmetology/Cosmetologist, General Make-Up Artist/Specialist Salon/Beauty Salon Management/Manager	300700	Cosmetology and Barbering
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	15.0501 47.0201	Heating, Ventilation, Air Conditioning and Refrigeration Engineering Technology/ Technician Heating, Air Conditioning, Ventilation and Refrigeration Maintenance Technology/ Technician	094600	Environmental Control Technology
First-Line Supervisors of Retail Sales Workers	19.0203 52.0212 52.1803	Consumer Merchandising/ Retailing Management Retail Management Retailing and Retail Operations	050650 050940 050960	Retail Store Operations and Management Sales and Salesmanship Display

Source: U.S. Department of Education Integrated Postsecondary Education Data System (IPEDS) at www.nces.ed.gov; California Community Colleges TOP-to-CIP Crosswalk 7th Edition (2010), www.cccco.edu.

California Retail Cluster

Percentage of Total County Establishments, 2013



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Data Sources:
Quarterly Census of Employment and Wages (QCEW) program developed through a cooperative program between the States and the U.S. Bureau of Labor Statistics, Third Quarter 2013

Cartography by:
Labor Market Information Division
California Employment Development Department
http://www.labormarketinfo.edd.ca.gov
July 2014

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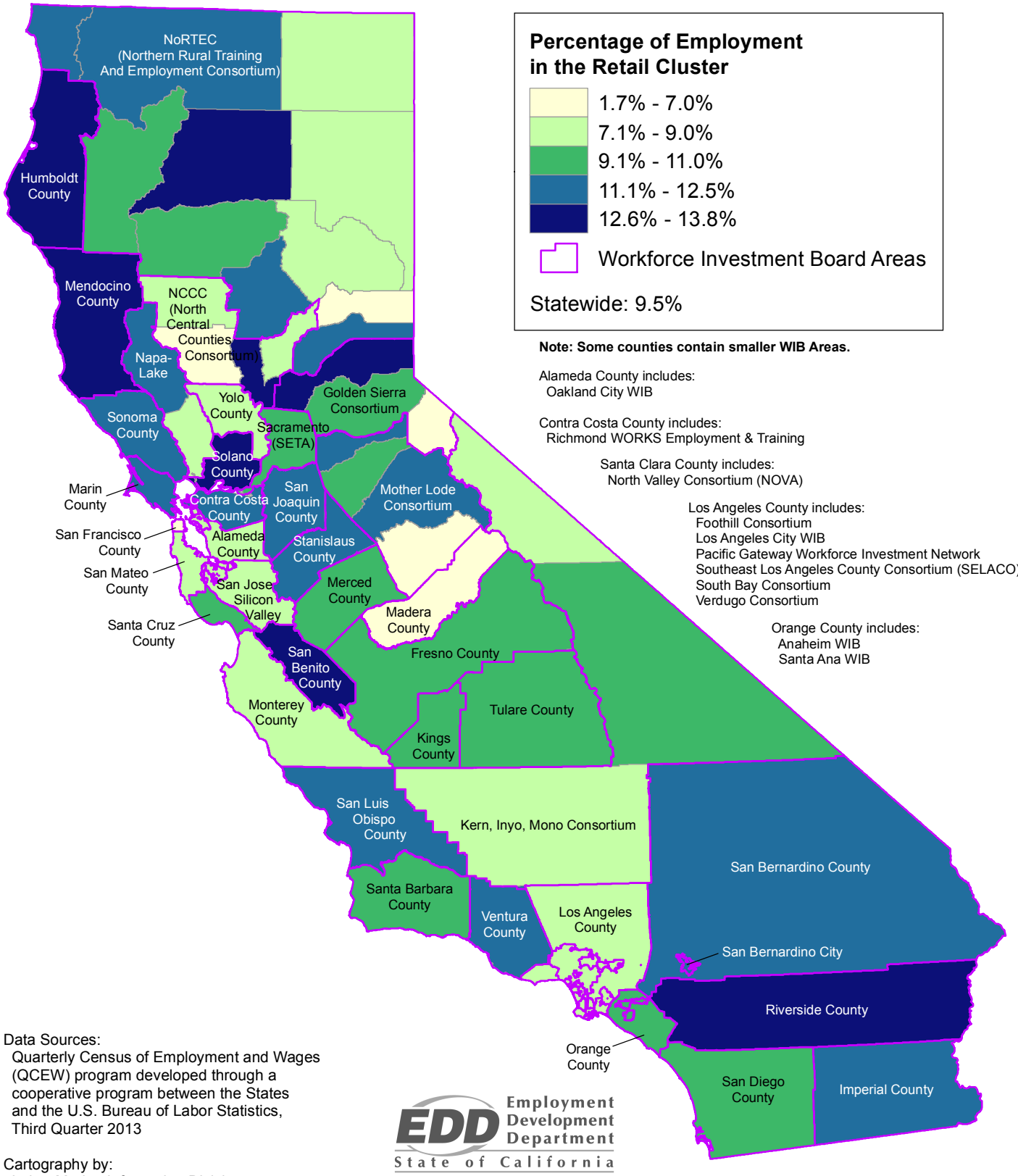
California Retail Cluster

Percentage of Total County Employment, 2013



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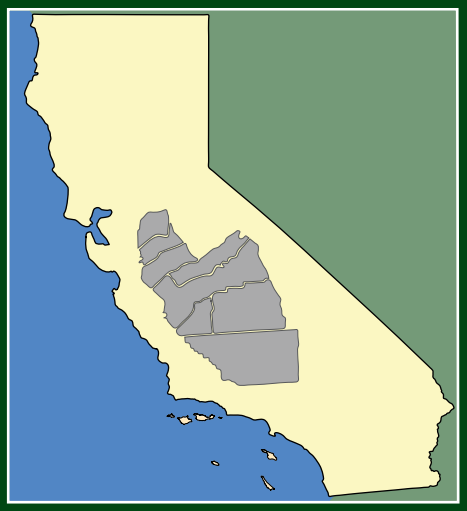

Occupational Analysis: Health Care Services Cluster

San Joaquin Valley Economic Market

April 2015

Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare Counties

EDD Employment Development Department
State of California

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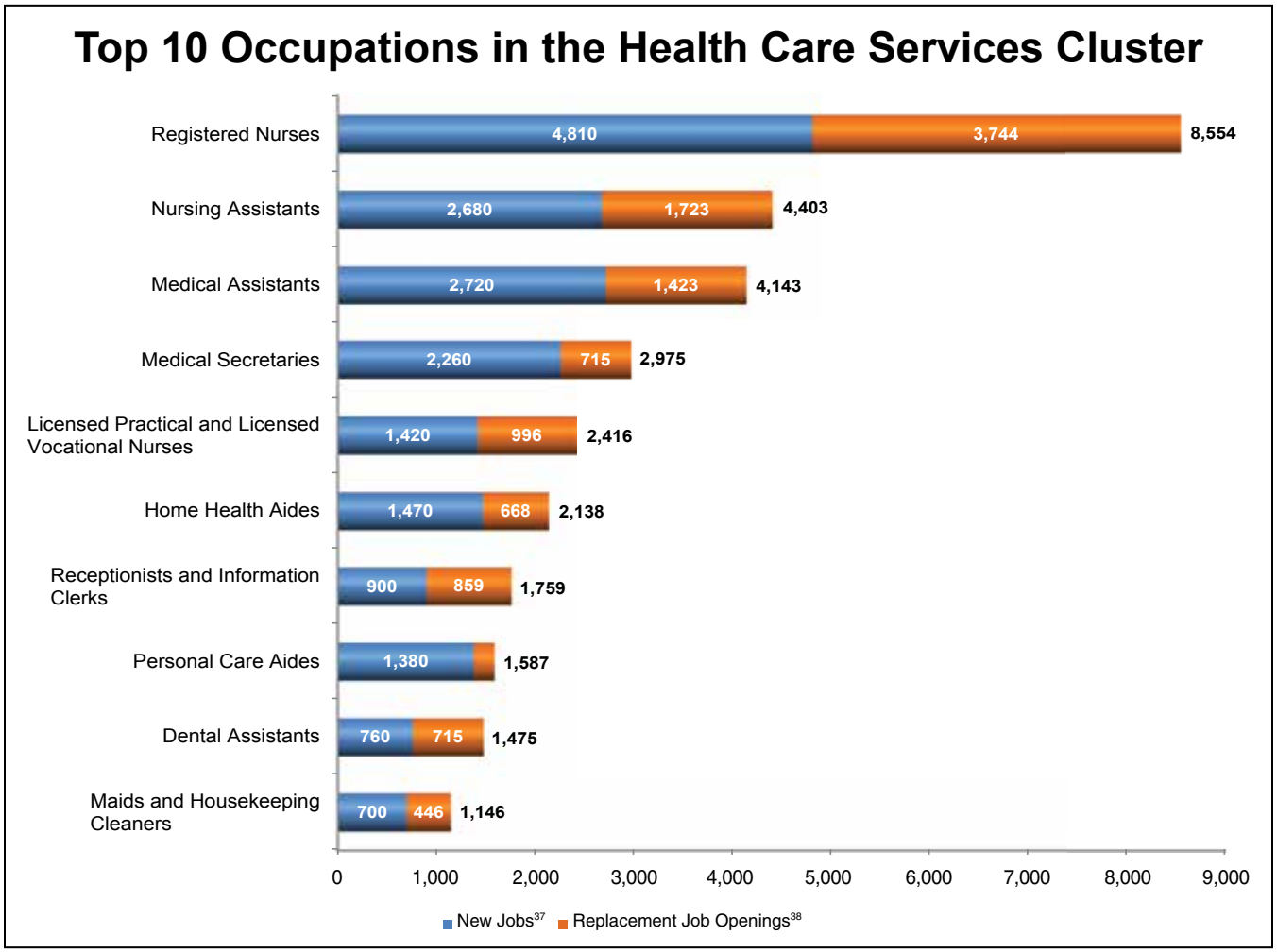
What is the Health Care Services Cluster?

The Health Care Services cluster is comprised of 14 industries that include hospitals and doctors' offices, diagnostic laboratories, continuing care retirement communities, home health care services, and other activities related to health care. The workers employed within this cluster span all skill levels and share skills and work activities both within the cluster and in many other industry clusters, suggesting the potential for skills transference and upward mobility with additional training.

Top 10 Occupations in the Health Care Services Cluster

The graph below identifies the top 10 occupations in the Health Care Services cluster, based on the San Joaquin Valley Economic Market's new job growth plus replacement openings. In sum, these 10 occupations represent nearly half of the 62,822 total job openings projected in this cluster between 2012 and 2022. Moreover, many share the same required skills such as active listening, critical thinking, reading comprehension, social perceptiveness, speaking and monitoring.[36]



Source: California Employment Development Department, Projections of Employment 2012-2022. Industry and occupational employment projections for 2012-2022 in this report may not be directly comparable to the published 2012-2022 employment projections available online at www.labormarketinfo.edd.ca.gov.

[36] U.S. Department of Labor's *Occupational Information Network (O*NET)* at www.onetonline.org.
[37] New jobs are only openings due to growth and do not include job declines. If an occupation's employment change is negative, there is no job growth and new jobs are set to zero.
[38] Replacement job openings estimate the number of job openings created when workers retire or permanently leave an occupation and need to be replaced.

Top 10 Occupations and Recent Job Demand in the Health Care Services Cluster

The table below further profiles the San Joaquin Valley Economic Market's top 10 occupations in the Health Care Services cluster by listing the total job openings for 2012-2022, median hourly and annual wages, and entry-level education requirements. Also included are online job advertisements extracted from The Conference Board Help Wanted OnLine™ (HWOL) data series over a recent 120-day period. HWOL compiles, analyzes, and categorizes job advertisements from numerous online job boards, including CalJOBS℠ (www.caljobs.ca.gov), California's online job listing system.

Occupations	Total Job Openings[39] (2012-2022)	Median Hourly Wage (2014)	Median Annual Wage (2014)	Entry Level Education[40]	HWOL Job Ads[41] (120 days)
Registered Nurses	8,554	$41.13	$85,545	Associate's degree	5,806
Nursing Assistants	4,403	$12.01	$24,988	Postsecondary non-degree award	565
Medical Assistants	4,143	$13.72	$28,537	Postsecondary non-degree award	754
Medical Secretaries	2,975	$16.61	$34,566	High school diploma or equivalent	1,166
Licensed Practical and Licensed Vocational Nurses	2,416	$24.28	$50,504	Postsecondary non-degree award	875
Home Health Aides	2,138	$10.43	$21,688	Less than high school	432
Receptionists and Information Clerks	1,759	$12.30	$25,583	High school diploma or equivalent	2,061
Personal Care Aides	1,587	$9.33	$19,414	Less than high school	906
Dental Assistants	1,475	$15.32	$31,863	Postsecondary non-degree award	534
Maids and Housekeeping Cleaners	1,146	$9.58	$19,912	Less than high school	913

Source: California Employment Development Department, Projections of Employment 2012-2022; Occupational Employment Statistics Wage Survey, updated to 4th Q, 2014; The Conference Board Help Wanted OnLine™ (HWOL) Data Series, 120-day period ending April 22, 2015.

[39] Total job openings are the sum of new jobs and replacement job openings.
[40] U.S. Department of Labor, Bureau of Labor Statistics (BLS) 2012 education levels.
[41] Totals represent job advertisements from employers in all industries. One job opening may be represented in more than one job advertisement.

Top Occupations for the Health Care Services Cluster by Education Level

The table below identifies the occupations with the most total job openings, categorized by Bureau of Labor Statistics (BLS) 2012 entry-level education requirements, within the Health Care Services cluster. The table includes the San Joaquin Valley Economic Market's projected total job openings and median hourly and annual wages. In addition, recent totals of online job advertisements over 120-day period are included. Grouping occupations by education levels allows individuals to better gauge the potential for skills transference and upward mobility within the cluster.

Occupations	Total Job Openings[42] (2012-2022)	Median Hourly Wage (2014)	Median Annual Wage (2014)	HWOL Job Ads (120 days)
Requires a Bachelor's Degree or Higher				
Medical and Health Services Managers	974	$53.33	$110,923	965
Physical Therapists	581	$44.24	$92,016	895
Family and General Practitioners	575	$82.52	$171,630	233
Physician Assistants	521	$53.96	$112,227	387
Nurse Practitioners	519	$54.06	$112,448	142
Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree				
Registered Nurses	8,554	$41.13	$85,545	5,806
Nursing Assistants	4,403	$12.01	$24,988	565
Medical Assistants	4,143	$13.72	$28,537	754
Licensed Practical and Licensed Vocational Nurses	2,416	$24.28	$50,504	875
Dental Assistants	1,475	$15.32	$31,863	534
Requires a High School Diploma or Equivalent or Less				
Medical Secretaries	2,975	$16.61	$34,566	1,166
Home Health Aides	2,138	$10.43	$21,688	432
Receptionists and Information Clerks	1,759	$12.30	$25,583	2,061
Personal Care Aides	1,587	$9.33	$19,414	906
Maids and Housekeeping Cleaners	1,146	$9.58	$19,912	913

Source: California Employment Development Department, Projections of Employment 2012-2022; Occupational Employment Statistics Wage Survey, updated to 4th Q, 2014; The Conference Board Help Wanted OnLine™ (HWOL) Data Series, 120-day period ending April 22, 2015.

[42] Total job openings are the sum of new jobs and replacement job openings.

Skill Requirements in the Health Care Services Cluster

The table below lists the 10 top skills required for top occupations in the Health Care Services cluster, categorized by entry-level education requirements. Active listening, critical thinking, reading comprehension and social perceptiveness are the most commonly shared skills, followed by speaking. The skills and work activities identified for each occupation are from the U.S. Department of Labor's Occupational Information Network (O*NET).

Occupations	Skills															
	Active Learning	Active Listening	Complex Problem Solving	Coordination	Critical Thinking	Instructing	Judgment and Decision Making	Learning Strategies	Monitoring	Operations Analysis	Reading Comprehension	Science	Service Orientation	Social Perceptiveness	Speaking	Time Management	Writing
Requires a Bachelor's Degree or Higher																	
Medical and Health Services Managers		●		●	●		●		●	●	●			●	●	●	
Physical Therapists		●		●	●		●		●		●		●	●	●		●
Family and General Practitioners	●	●	●		●		●				●	●		●	●		●
Physician Assistants	●	●		●	●				●		●		●	●	●		●
Nurse Practitioners	●	●			●	●	●		●		●	●		●			●
Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree																	
Registered Nurses	●	●		●	●			●	●		●		●	●	●		
Nursing Assistants	●	●		●	●				●		●		●	●	●		●
Medical Assistants	●	●		●	●				●		●		●	●	●		●
Licensed Practical and Licensed Vocational Nurses		●		●	●				●		●		●	●	●	●	●
Dental Assistants	●	●			●	●			●		●		●	●	●		●
Requires a High School Diploma or Equivalent or Less																	
Medical Secretaries		●		●	●				●		●		●	●	●	●	●
Home Health Aides	●	●		●	●			●	●		●		●	●	●		
Receptionists and Information Clerks		●	●	●	●						●		●	●	●	●	●
Personal Care Aides	●	●		●	●				●		●		●	●	●		●
Maids and Housekeeping Cleaners		●		●	●	●			●		●		●	●	●	●	

*Source: U.S. Department of Labor's Occupational Information Network (O*NET) at www.onetonline.org.*

Work Activities in the Health Care Services Cluster

The table below lists the 10 top work activities required for top occupations in the Health Care Services cluster, categorized by entry-level education requirements. The most common include establishing and maintaining interpersonal relationships; identifying objects, actions, and events; assisting and caring for others; and monitor processes, materials, or surroundings.

Occupations	Work Activities																										
	Analyzing Data or Information	Assisting and Caring for Others	Coaching and Developing Others	Communicating with Persons Outside Organization	Communicating with Supervisors, Peers, or Subordinates	Coordinating the Work and Activities of Others	Documenting/Recording Information	Establishing and Maintaining Interpersonal Relationships	Evaluating Information to Determine Compliance with Standards	Getting Information	Guiding, Directing, and Motivating Subordinates	Handling and Moving Objects	Identifying Objects, Actions, and Events	Inspecting Equipment, Structures, or Material	Making Decisions and Solving Problems	Monitor Processes, Materials, or Surroundings	Monitoring and Controlling Resources	Organizing, Planning, and Prioritizing Work	Performing Administrative Activities	Performing for or Working Directly with the Public	Performing General Physical Activities	Processing Information	Provide Consultation and Advice to Others	Resolving Conflicts and Negotiating with Others	Thinking Creatively	Training and Teaching Others	Updating and Using Relevant Knowledge
Requires a Bachelor's Degree or Higher																											
Medical and Health Services Managers			●		●	●		●			●				●		●	●					●	●			
Physical Therapists		●					●	●				●	●		●	●					●				●		●
Family and General Practitioners	●	●					●	●		●			●		●	●						●					●
Physician Assistants	●	●						●		●			●		●	●				●		●					●
Nurse Practitioners		●					●	●		●			●		●	●		●		●							●
Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree																											
Registered Nurses		●			●			●		●			●		●	●		●				●					●
Nursing Assistants		●			●			●		●		●	●		●	●		●				●					
Medical Assistants		●			●		●	●		●			●			●		●		●							●
Licensed Practical and Licensed Vocational Nurses		●			●		●	●				●	●		●	●		●									●
Dental Assistants		●						●	●	●		●	●		●	●		●									●
Requires a High School Diploma or Equivalent or Less																											
Medical Secretaries		●		●	●			●		●			●		●			●				●					●
Home Health Aides		●			●		●	●				●	●			●		●				●					●
Receptionists and Information Clerks		●					●	●		●			●			●			●	●		●					●
Personal Care Aides		●			●		●	●				●	●		●	●		●			●						
Maids and Housekeeping Cleaners					●			●		●		●	●	●				●		●	●					●	

*Source: U.S. Department of Labor's Occupational Information Network (O*NET) at www.onetonline.org.*

Related Occupations for the Health Care Services Cluster

The table below lists top occupations in the Health Care Services cluster by entry-level education requirements and provides a sample of related occupations. These related occupations match many of the skills, education, and work experience needed for the top Health Care Services cluster occupations.

Health Care Services Occupations	Related Occupations
Requires a Bachelor's Degree or Higher	
Medical and Health Services Managers	• Management Analysts • Chief Executives • Human Resources Managers
Physical Therapists	• Health Specialties Teachers, Postsecondary • Nursing Instructors and Teachers, Postsecondary • Occupational Therapists
Family and General Practitioners	• Hospitalists • Physician Assistants • Nurse Midwives
Physician Assistants	• Clinical Nurse Specialists • Nurse Midwives • Nurse Practitioners
Nurse Practitioners	• Physician Assistants • Clinical Nurse Specialists • Nurse Midwives
Requires Some College, Postsecondary Non-Degree Award, or Associate's	
Registered Nurses	• Acute Care Nurses • Critical Care Nurses • Licensed Practical and Licensed Vocational Nurses
Nursing Assistants[43]	• N/A
Medical Assistants	• Pharmacy Technicians • Physical Therapist Assistants • Dental Assistants
Licensed Practical and Licensed Vocational Nurses	• Acute Care Nurses • Cardiovascular Technologists and Technicians • Radiologic Technicians
Dental Assistants	• Dental Hygienists • Surgical Technologists • Endoscopy Technicians
Requires a High School Diploma or Equivalent or Less	
Medical Secretaries	• Medical Records and Health Information Technicians • Receptionists and Information Clerks • Bill and Account Collectors
Home Health Aides	• Personal Care Aides • Occupational Therapy Aides • Physical Therapist Aides
Receptionists and Information Clerks	• Medical Records and Health Information Technicians • Medical Secretaries • Office Clerks, General
Personal Care Aides	• Home Health Aides • Ambulance Drivers and Attendants, Except Emergency Medical Technicians • Physical Therapist Aides
Maids and Housekeeping Cleaners	• Janitors and Cleaners, Except Maids and Housekeeping Cleaners • Dining Room and Cafeteria Attendants and Bartender Helpers • Food Servers, Nonrestaurant

*Source: U.S. Department of Labor's Occupational Information Network (O*NET) at www.onetonline.org.*

[43] Currently no related occupations reported by O*NET.

Employer Demand for the Health Care Services Cluster

The following table lists the San Joaquin Valley Economic Market employers in the Health Care Services cluster who posted the most job advertisements during the 120-day period ending April 22, 2015. The table also includes the number of job advertisements from the previous year's period, as well as the numerical change and year-over percent change in these postings for the same 120-day period.

Health Care Services Cluster Employers	**Recent Job Advertisements**[44] (120-day period)	**Prior Year Job Advertisements** (120-day period)	**Numerical Change**	**Year-Over Percent Change** (HWOL Job Advertisements)
Dignity Health	672	844	-172	-20.4%
Kern Medical Center	327	316	11	3.5%
Tenet Healthcare Corporation	313	171	142	83.0%
St. Joseph Medical Center	256	85	171	201.2%
Kaiser Permanente	238	95	143	150.5%
Sutter Health	224	175	49	28.0%
Children's Hospital Central California	175	179	-4	-2.2%
Onward Healthcare	153	63	90	142.9%
American Mobile Healthcare	107	100	7	7.0%
Kaweah Delta Medical Center	102	68	34	50.0%
Brookdale Senior Living	88	51	37	72.5%
San Joaquin Community Hospital	88	92	-4	-4.3%
DaVita, Inc.	83	111	-28	-25.2%
Mercy Hospital	80	17	63	370.6%
Adventist HealthCare	73	54	19	35.2%
Avalon Health Care, Inc.	69	53	16	30.2%
Golden Living	64	60	4	6.7%
Western Dental	60	30	30	100.0%
Aureus Medical	48	5	43	860.0%
Genesis HealthCare	43	22	21	95.5%

Source: The Conference Board Help Wanted OnLine™ (HWOL) Data Series: Period ending April 22, 2015.

[44] Totals do not include employers with anonymous job advertisements.

Instructional Programs for the Health Care Services Cluster Occupations

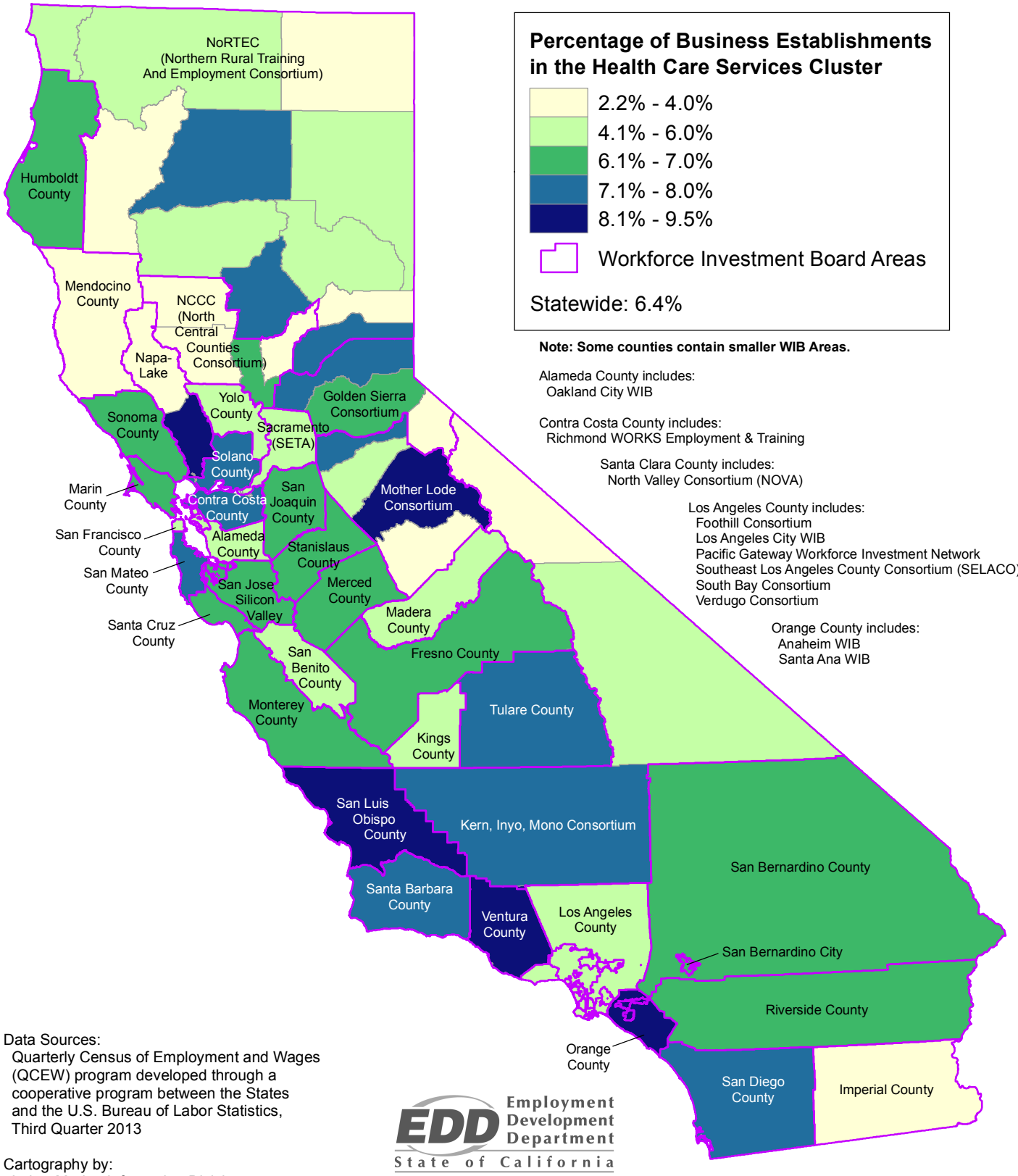
The table below provides examples of instructional programs related to some of the top occupations in the Health Care Services cluster, particularly those that require less than a bachelor's degree. These programs train individuals for occupations throughout many industries and are not limited to the Health Care Services cluster. To view a more complete list of training programs, select the source links under the table below. The Taxonomy of Programs categorizes and describes instructional programs only for California Community Colleges.

Occupations	Classification of Instructional Program (CIP)		Taxonomy of Programs (TOP)	
	CIP Code	*CIP Title*	*TOP Code*	*TOP Title*
Registered Nurses	51.3801	Registered Nursing/Registered Nurse	123000	Nursing
	51.3813	Clinical Nurse Specialist	123010	Registered Nursing
	51.3816	Emergency Room/Trauma Nursing		
Nursing Assistants	51.2601	Health Aide	123030	Certified Nurse Assistant
	51.3902	Nursing Assistant/Aide and Patient Care Assistant/Aide		
	51.3999	Practical Nursing, Vocational Nursing and Nursing Assistants, Other		
Medical Assistants	51.0710	Medical Office Assistant/Specialist	051420	Medical Office Technology
	51.0712	Medical Reception/Receptionist	120800	Medical Assisting
	51.0713	Medical Insurance Coding Specialist/Coder	120810	Clinical Medical Assisting
Licensed Practical and Licensed Vocational Nurses Assistants	51.3901	Licensed Practical/Vocational Nurse Training	123020	Licensed Vocational Nursing
	51.3999	Practical Nursing, Vocational Nursing and Nursing Assistants, Other		
Dental	51.0601	Dental Assisting/Assistant	124010	Dental Assistant
Medical Secretaries	51.0710	Medical Office Assistant/Specialist	051420	Medical Office Technology
	51.0714	Medical Insurance Specialist/ Medical Biller		
	51.0716	Medical Administrative/Executive Assistant and Medical Secretary		
Home Health Aides	51.2602	Home Health Aide/Home Attendant	123080	Home Health Aide
Receptionists and Information Clerks	52.0406	Receptionist		
Personal Care Aides	51.2602	Home Health Aide/Home Attendant	123080	Home Health Aide

Source: U.S. Department of Education Integrated Postsecondary Education Data System (IPEDS) at www.nces.ed.gov; California Community Colleges TOP-to-CIP Crosswalk 7th Edition (2010), www.cccco.edu.

California Health Care Services Cluster

Percentage of Total County Establishments, 2013



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Santa Clara County includes:
North Valley Consortium (NOVA)

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Los Angeles City WIB
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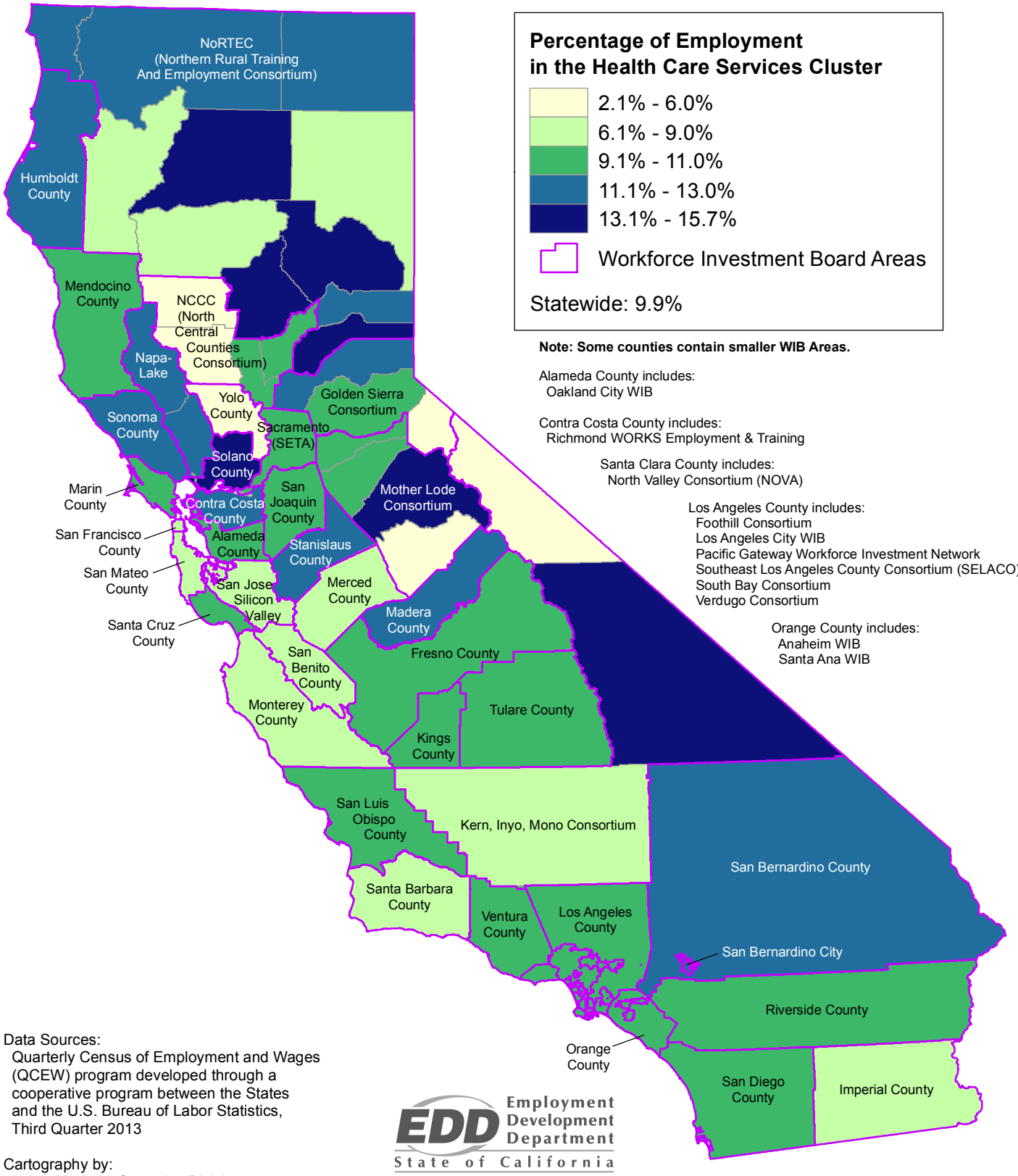
California Health Care Services Cluster

Percentage of Total County Employment, 2013



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ATTACHMENT 5

Labor Market Overview: Central Valley/Mother Lode Region

May, 2016

Prepared by:
Center of Excellence
Central Valley/Mother Lode Region

C·O·E
CENTERS OF EXCELLENCE
Inform Connect Advance

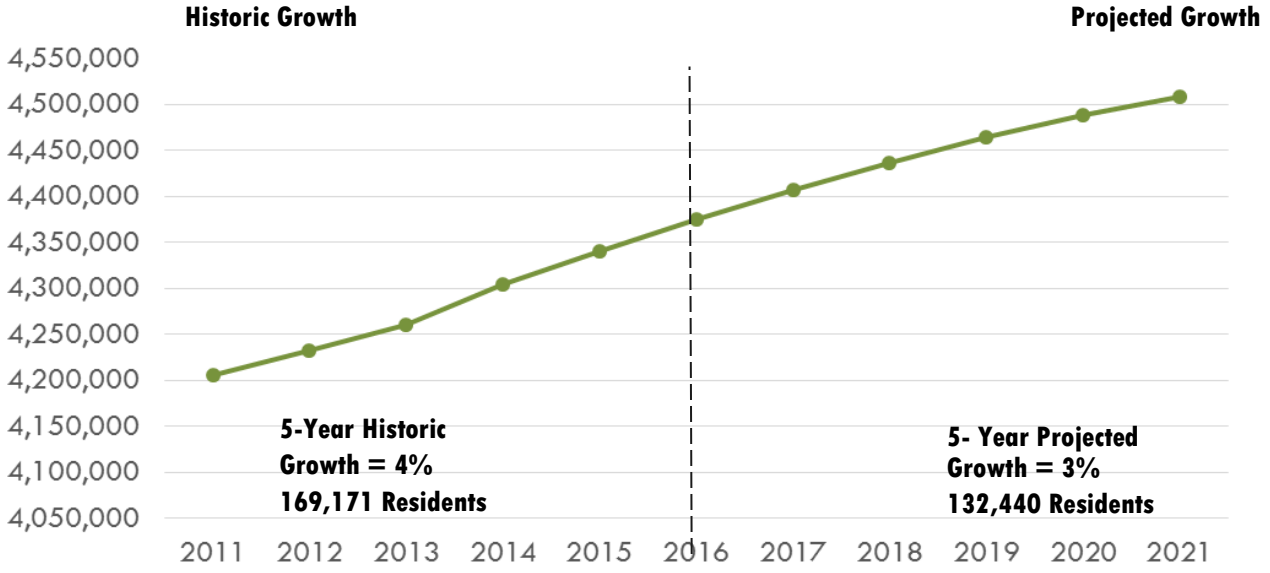
Table of Contents

Regional Population Characteristics

Residential Population

The Central Valley/Mother Lode (CVML) Region consists of 15 counties: **Alpine, Amador, Bakersfield, Calaveras, Fresno, Inyo, Kern, Kings, Mariposa, Merced, Mono, San Joaquin, Stanislaus, Tulare and Tuolumne.** The residential population numbered close to 4.4 million in 2016, with an additional 132,440 residents projected by 2021 (Exhibit 1). Over the last five years, the CVML Region grew by 4%, somewhat slower than the state's growth of 4.7%. The projected growth rate of 3% is also slower than in the previous five years and nearly matches the state's projected growth rate of 3.1%.

Exhibit 1: Central Valley/Mother Lode Region Population Estimates and Projections



Labor Force, Civilian Employment and Unemployment

The size and characteristics of a region's labor force are important considerations in workforce planning. Labor force, employment and unemployment data are based upon "place of residence" – where people live, regardless of where they work. Individuals who have more than one job are counted only once. These data elements differ from industry employment estimates that are "place of work" based – where the employer/workplace is located, regardless of where the employee resides. For terms and definitions, see Appendix A.

Since 2011, the CVML regional labor force has increased in size by 51,960 persons, indicating an entrance of working age individuals into the workforce of 3%. Total employment increased by 177,690 persons (Exhibit 2). Because total employment increased more than the labor force, the unemployment rate decreased from 17% in 2011 (compared to 11.5% statewide) to 10% in 2016 (compared to 5.2% statewide).

Exhibit 2: Labor Force and Unemployment Rate, 2011-2016

	April 2011	April 2016	5-Year Change
Labor Force	1,873,450	1,925,410	51,960
Employment	1,563,010	1,740,700	177,690
Unemployment	310,340	184,740	(125,600)
Unemployment Rate	17%	10%	-7%

Demographic Overview

Central Valley/Mother Lode regional demographics will change somewhat in the next five years. The total Hispanic population in the region is projected to reach 52% by 2021, an increase of two percentage points from 2016 (Exhibit 3).

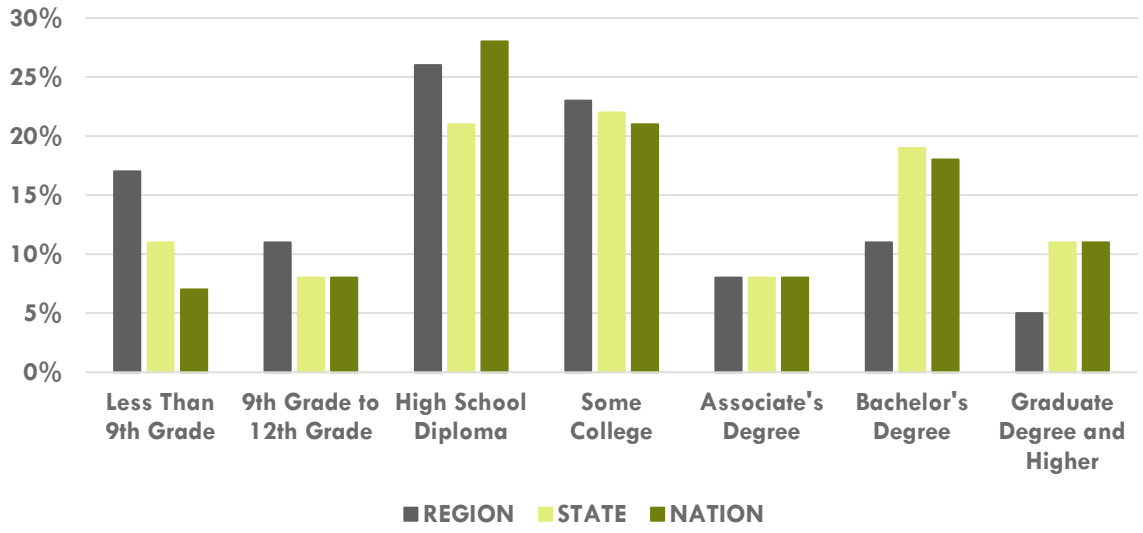
Exhibit 3: Ethnicity/Race Changes, 2011-2016

Race/Ethnicity	2016 Population	2021 Population	Change	% Change
White, Hispanic	1,951,783	2,069,316	117,533	6%
White, Non-Hispanic	1,541,483	1,503,803	(37,680)	-2%
Asian, Non-Hispanic	321,599	342,178	20,579	6%
Black, Non-Hispanic	187,728	190,357	2,629	1%
Two or More Races, Non-Hispanic	94,576	100,894	6,318	7%
American Indian or Alaskan Native, Hispanic	88,102	95,854	7,752	9%
Two or More Races, Hispanic	60,001	66,916	6,915	12%
Black, Hispanic	44,085	48,023	3,938	9%
Asian, Hispanic	36,526	39,646	3,120	9%
American Indian or Alaskan Native, Non-Hispanic	30,064	29,710	(354)	-1%
Native Hawaiian or Pacific Islander, Non-Hispanic	12,050	13,157	1,107	9%
Native Hawaiian or Pacific Islander, Hispanic	7,194	7,778	584	8%
Total	***4,375,191***	***4,507,631***	***132,440***	***3%***

Educational Attainment

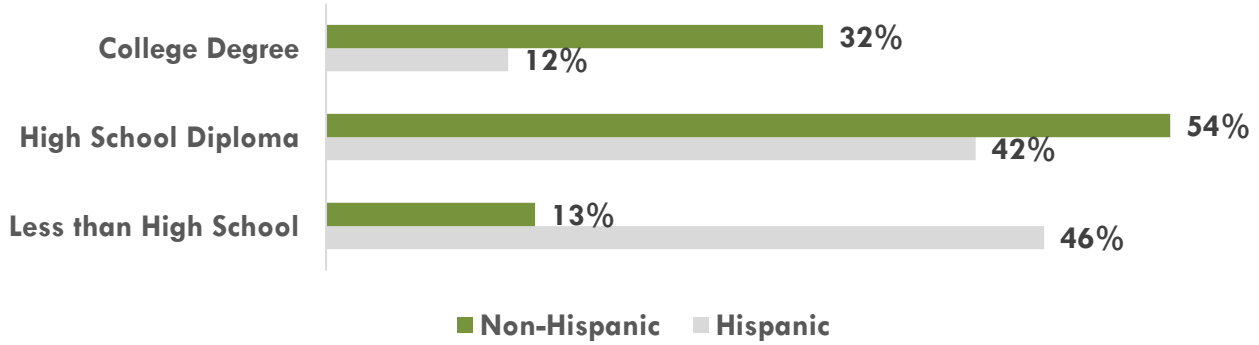
Postsecondary educational attainment in the region is lower than statewide and nationwide rates in every category except for "some college" and associate degree (Exhibit 4). Only 16% of the adult population holds a bachelor's or graduate degree, compared to 30% statewide and 29% nationwide. Within the CVML Region, 54% of the population has a high school diploma or less, compared to 40% statewide and 43% nationwide.

Exhibit 4: Educational Attainment, 2016 Percent of Population



Hispanic educational attainment in the CVML Region is lower than non-Hispanic educational attainment. Only 12% of the Hispanic population earned a college degree (associate degree or higher), compared to 32% of the non-Hispanic population (Exhibit 5). Conversely, 46% of the Hispanic population did not complete high school, compared to 13% of the non-Hispanic population.

Exhibit 5: 2016 Hispanic/Non-Hispanic Educational Attainment

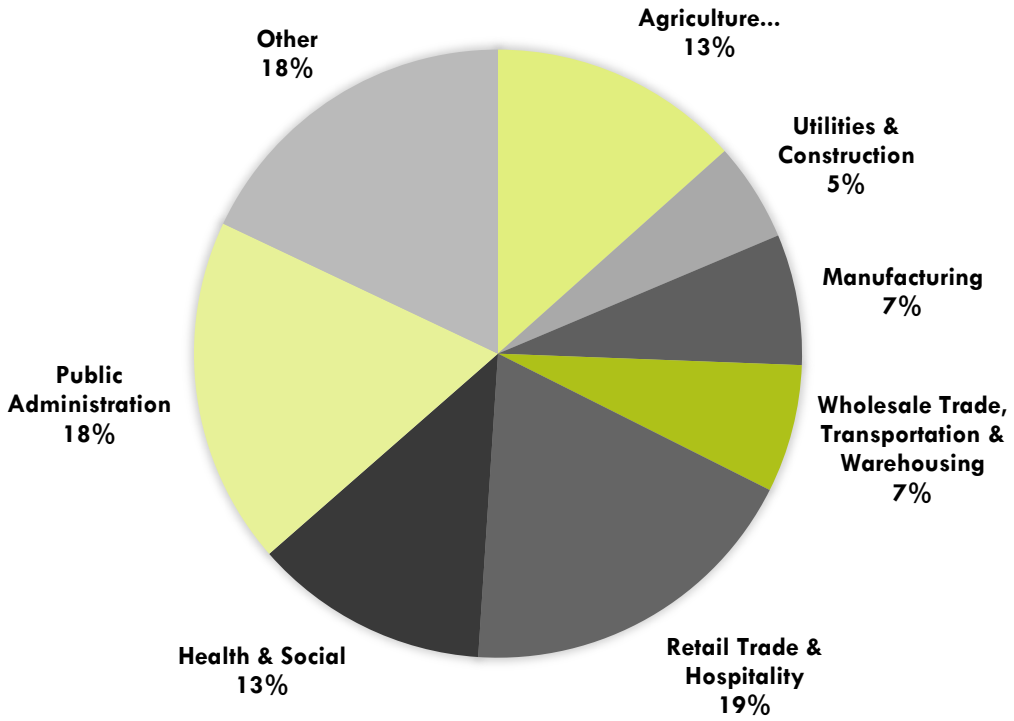


Industry Employment

Employment Composition

The Central Valley/Mother Lode Region had nearly 1.7 million jobs as of April 2016. In Exhibit 6, this employment is distributed into eight major industrial groupings. The largest shares of employment are attributed to retail trade and hospitality, public administration, health care and social assistance, and agriculture. These are followed by manufacturing as well as wholesale trade, transportation and warehousing. The smallest shares of employment that are aggregated within the "other" category represent regional non-priority industry groups with less than 5% of the total jobs in the region.

Exhibit 6: Central Valley/Mother Lode Region 2016 Employment by Industry Groups



Health Care and Social Assistance Sector

In 2016, the majority of health care and social assistance jobs were with services for the elderly and persons with disabilities, followed by general hospitals, physicians' offices and nursing care facilities. Major growth is projected in HMOs, home health care services and services for the elderly and persons with disabilities. Although child day care services have the fifth largest number of jobs, there is an expected 7% decline over the next five-year period. Overall, this sector is projected to grow by 13%, adding 27,190 new positions by 2021 (Exhibit 7).

Exhibit 7: 2016 Health Care and Social Assistance Jobs

Description	2016 Jobs	2021 Jobs	2016 - 2021 Change	2016 - 2021 % Change	2015 Firms
Services for the Elderly and Persons with Disabilities	43,714	55,796	12,082	28%	33,398
General Medical and Surgical Hospitals	41,123	42,609	1,486	4%	60
Offices of Physicians (except Mental Health Specialists)	26,212	28,191	1,979	8%	2,668
Nursing Care Facilities (Skilled Nursing Facilities)	14,517	16,208	1,691	12%	174
Child Day Care Services	12,476	11,657	(819)	-7%	496
Offices of Dentists	10,198	10,626	428	4%	1,411
Home Health Care Services	8,075	10,585	2,510	31%	178
HMO Medical Centers	5,482	7,692	2,210	40%	32
Assisted Living Facilities for the Elderly	4,891	5,616	725	15%	269
Vocational Rehabilitation Services	4,363	4,574	211	5%	121
Child and Youth Services	3,283	3,631	348	11%	121
Other Individual and Family Services	3,167	2,950	(217)	-7%	239
Residential Intellectual and Developmental Disability Facilities	2,714	2,560	(154)	-6%	194
Continuing Care Retirement Communities	2,664	3,338	674	25%	37
Ambulance Services	2,529	2,896	367	15%	49
Offices of Physical, Occupational and Speech Therapists, and Audiologists	2,397	2,880	483	20%	200
Residential Mental Health and Substance Abuse Facilities	2,220	2,670	450	20%	90
All Other Outpatient Care Centers	1,773	2,411	638	36%	64
Offices of Optometrists	1,703	1,906	203	12%	214
Kidney Dialysis Centers	1,664	2,020	356	21%	79
Outpatient Mental Health and Substance Abuse Centers	1,604	1,924	320	20%	70
Other Residential Care Facilities	1,534	1,431	(103)	-7%	118
Offices of Mental Health Practitioners (except Physicians)	1,490	1,804	314	21%	75
Offices of Chiropractors	1,269	1,161	(108)	-9%	321
Diagnostic Imaging Centers	1,206	1,512	306	25%	56
Medical Laboratories	1,009	1,050	41	4%	169
Offices of All Other Miscellaneous Health Practitioners	838	971	133	16%	70
Freestanding Ambulatory Surgical and Emergency Centers	790	917	127	16%	51
All Other Combined	4,004	4,513	509	13%	301
Total	***208,907***	***236,098***	***27,190***	***13%***	***41,325***

Retail Trade Sector

In 2016, the majority of retail jobs were with supermarkets and other grocery stores, followed by discount department stores, and warehouse clubs and supercenters (Exhibit 8). Although new car dealers have the fourth largest number of jobs, these positions are expected to experience a decline of 1% (shedding 109 jobs). The largest decline (47%) is projected for department stores (except discount department stores) with a loss of 1,814 jobs. Overall, the retail trade sector is projected to increase by 6% during the next five-year period, adding more than 11,000 new positions.

Exhibit 8: 2016 Retail Jobs

Description	2016 Jobs	2021 Jobs	2016 - 2021 Change	2016 - 2021 % Change	2015 Firms
Supermarkets and Other Grocery (except Convenience) Stores	27,007	28,717	1,710	6%	931
Discount Department Stores	17,623	18,468	845	5%	148
Warehouse Clubs and Supercenters	10,993	15,066	4,073	37%	43
New Car Dealers	10,432	10,323	(109)	-1%	229
Pharmacies and Drug Stores	8,093	8,145	52	1%	607
Home Centers	8,044	8,850	806	10%	106
Gasoline Stations with Convenience Stores	6,916	6,883	(33)	0%	841
All Other General Merchandise Stores	5,445	6,762	1,317	24%	357
Automotive Parts and Accessories Stores	5,309	5,616	307	6%	486
Electronics Stores	4,741	5,242	501	11%	352
Family Clothing Stores	4,593	4,998	405	9%	224
Department Stores (except Discount Department Stores)	3,892	2,078	(1,814)	-47%	37
Sporting Goods Stores	3,155	3,571	416	13%	218
Hobby, Toy, and Game Stores	3,000	3,821	821	27%	108
Women's Clothing Stores	2,923	3,647	724	25%	240
Other Building Material Dealers	2,661	2,593	(68)	-3%	193
Hardware Stores	2,480	2,667	187	8%	185
Tire Dealers	2,376	2,415	39	2%	298
Convenience Stores	2,315	2,552	237	10%	369
Used Merchandise Stores	2,301	2,503	202	9%	142
Used Car Dealers	2,209	2,610	401	18%	169
Shoe Stores	2,108	2,425	317	15%	215
Other Gasoline Stations	1,949	1,933	(16)	-1%	85
Furniture Stores	1,860	1,669	(191)	-10%	192
Pet and Pet Supplies Stores	1,552	1,774	222	14%	89
Nursery, Garden Center, and Farm Supply Stores	1,472	1,437	(35)	-2%	127
Office Supplies and Stationery Stores	1,428	1,214	(214)	-15%	79
Other Direct Selling Establishments	1,424	1,247	(177)	-12%	48
Cosmetics, Beauty Supplies, and Perfume Stores	1,421	1,826	405	29%	113
Gift, Novelty, and Souvenir Stores	1,346	1,130	(216)	-16%	131
Jewelry Stores	1,306	1,159	(147)	-11%	189
Other Clothing Stores	1,297	1,426	129	10%	95
All Other Home Furnishings Stores	1,294	1,468	174	13%	89
Beer, Wine, and Liquor Stores	1,283	1,266	(17)	-1%	292
All Other Miscellaneous Store Retailers (except Tobacco Stores)	1,270	1,205	(65)	-5%	165
Meat Markets	954	1,027	73	8%	89
Sewing, Needlework, and Piece Goods Stores	906	1,007	101	11%	46
All Other Specialty Food Stores	818	531	(287)	-35%	76
Tobacco Stores	723	827	104	14%	102
Florists	722	589	(133)	-18%	102
Floor Covering Stores	718	515	(203)	-28%	82
All Other Combined	10,457	10,626	168	0	998
Total	***172,816***	***183,827***	***11,011***	***6%***	***9,680***

Manufacturing Sector

In 2016, the majority of manufacturing jobs were in fruit and vegetable canning, poultry processing and wineries (Exhibit 9). Declines are projected for several firm types, including fruit and vegetable canning, commercial printing and commercial bakeries; however, the manufacturing sector is projected to grow overall by 2% during the next five-year period, adding 2,586 jobs.

Exhibit 9: 2016 Manufacturing Jobs

Description	2016 Jobs	2021 Jobs	2016 - 2021 Change	2016 - 2021 % Change	2015 Firms
Fruit and Vegetable Canning	9,057	8,725	(332)	-4%	41
Poultry Processing	8,122	8,280	158	2%	115
Wineries	7,883	8,687	804	10%	174
Roasted Nuts and Peanut Butter Manufacturing	4,517	4,912	395	9%	23
Cheese Manufacturing	4,419	4,760	341	8%	25
Animal (except Poultry) Slaughtering	2,658	2,754	96	4%	9
Dried and Dehydrated Food Manufacturing	2,606	2,277	(329)	-13%	28
Corrugated and Solid Fiber Box Manufacturing	2,593	3,005	412	16%	22
Fluid Milk Manufacturing	2,479	2,649	170	7%	19
Frozen Fruit, Juice, and Vegetable Manufacturing	2,212	2,346	134	6%	13
Perishable Prepared Food Manufacturing	2,181	2,436	255	12%	10
Commercial Printing (except Screen and Books)	2,105	1,609	(496)	-24%	112
Frozen Specialty Food Manufacturing	2,066	2,097	31	2%	6
Meat Processed from Carcasses	1,908	2,173	265	14%	24
Other Animal Food Manufacturing	1,881	1,993	112	6%	66
Fabricated Structural Metal Manufacturing	1,791	1,981	190	11%	41
Farm Machinery and Equipment Manufacturing	1,616	1,830	214	13%	56
Machine Shops	1,544	1,554	10	1%	155
Other Snack Food Manufacturing	1,431	1,527	96	7%	5
Glass Container Manufacturing	1,412	1,365	(47)	-3%	5
Ice Cream and Frozen Dessert Manufacturing	1,385	1,577	192	14%	10
Wood Kitchen Cabinet and Countertop Manufacturing	1,325	1,324	(1)	0%	84
Commercial Bakeries	1,145	1,012	(133)	-12%	29
Soft Drink Manufacturing	1,132	1,244	112	10%	9
Other Paperboard Container Manufacturing	1,066	1,212	146	14%	7
All Other Plastics Product Manufacturing	1,026	1,054	28	3%	40
Ready-Mix Concrete Manufacturing	990	780	(210)	-21%	50
Tortilla Manufacturing	949	961	12	1%	10
Petroleum Refineries	941	1,101	160	17%	25
Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing	849	549	(300)	-35%	8
All Other Miscellaneous Food Manufacturing	836	999	163	19%	8
Plastics Pipe and Pipe Fitting Manufacturing	833	808	(25)	-3%	10
Other Aircraft Parts and Auxiliary Equipment Manufacturing	830	1,064	234	28%	5
Wood Container and Pallet Manufacturing	826	811	(15)	-2%	34
Motor Vehicle Body Manufacturing	707	776	69	10%	12
Packaging Machinery Manufacturing	689	705	16	2%	11
Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	678	799	121	18%	32
Sheet Metal Work Manufacturing	670	726	56	8%	26
Retail Bakeries	669	584	(85)	-13%	66
Prefabricated Metal Building and Component Manufacturing	666	546	(120)	-18%	13
Other Motor Vehicle Parts Manufacturing	663	588	(75)	-11%	12
All Other Combined	32,729	32,034	(238)	-1%	1,228
Total	***116,086***	***118,214***	***2,586***	***2%***	***2,674***

Agriculture Sector

The Central Valley/Mother Lode Region's leading agricultural commodities include almonds, milk, walnuts and chickens. In addition to farm labor contractors and crew leaders, the majority of agriculture jobs fell within crop production, and animal production and aquaculture in 2016 (Exhibit 10). Overall, this sector is projected to grow by 3% over the next five years, adding 5,850 jobs.

Exhibit 10: 2016 Agriculture Jobs

Description	2016 Jobs	2021 Jobs	2016 - 2021 Change	2016 - 2021 % Change	2015 Firms
Farm Labor Contractors and Crew Leaders	94,324	103,060	8,736	9%	690
Crop Production	68,386	64,943	(3,443)	-5%	4,072
Animal Production and Aquaculture	25,298	23,934	(1,364)	-5%	1,373
Postharvest Crop Activities (except Cotton Ginning)	20,358	21,685	1,327	7%	288
Soil Preparation, Planting, and Cultivating	5,854	6,550	696	12%	305
Farm Management Services	5,040	5,225	185	4%	176
Crop Harvesting, Primarily by Machine	2,560	2,513	(47)	-2%	180
Support Activities for Animal Production	722	614	(108)	-15%	107
Logging	296	277	(19)	-6%	31
Forest Nurseries and Gathering of Forest Products	221	193	(28)	-13%	26
Cotton Ginning	175	51	(124)	-71%	24
Support Activities for Forestry	138	146	8	6%	9
Finfish Fishing	65	85	20	31%	1
Hunting and Trapping	34	35	1	3%	4
Shellfish Fishing	28	38	10	36%	0
Total	***223,498***	***229,350***	***5,850***	***3%***	***7,284***

Occupational Employment

Job Posting Trends

Burning Glass, an online job posting aggregation tool, was utilized to identify occupations with the most job openings in the Central Valley/Mother Lode Region.[1] Job postings were selected for inclusion in the analysis based on three criteria:

1. The minimum education requirement was a high school diploma or vocational certificate*, or associate degree;
2. The job posting was listed within the last 12 months (May 1, 2015 - April 30, 2016); and,
3. The job posting indicated the position was physically located in one of the region's 15 counties.

There were 54,748 job postings identified as possible matches. Almost one-fifth of the postings were for nurses. Exhibit 11 shows the top 20 job posting titles during the one-year period (accounting for 52% of the postings). Registered nurse was the only occupation showing a significant demand in terms of total job postings. Industries with the most job postings include health care and social services (28%); retail trade (14%); education services (10%); manufacturing (7%); and professional, scientific and technical services (5%).

Exhibit 11: 2016 Job Postings Requiring a High School Diploma or Vocational Training, or Associate Degree, Central Valley/Mother Lode Region

Occupational Title	# of Job Postings	% of Total	2016 Hourly Wages
Registered Nurses	9,390	17%	$41.58
Retail Salespersons	2,803	5%	$10.86
First-Line Supervisors of Retail Sales Workers	1,876	3%	$16.46
Customer Service Representatives	1,638	3%	$15.72
Critical Care Nurses	1,350	2%	$41.58
Sales Representatives, Wholesale and Manufacturing	1,310	2%	$25.82
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1,306	2%	$16.26
Teacher Assistants	1,127	2%	$13.65
Maintenance and Repair Workers, General	1,023	2%	$17.94
Laborers and Freight, Stock, and Material Movers, Hand	875	2%	$12.00
Merchandise Displayers and Window Trimmers	789	1%	$12.99
Security Guards	697	1%	$10.61
Managers, All Other	680	1%	$29.51
Bookkeeping, Accounting, and Auditing Clerks	640	1%	$17.45
Combined Food Preparation and Serving Workers, Including Fast Food	547	1%	$9.72
Office Clerks, General	507	1%	$13.77
Coaches and Scouts	493	1%	$16.21
First-Line Supervisors of Office and Administrative Support Workers	485	1%	$23.35
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	453	1%	$12.40
First-Line Supervisors of Food Preparation and Serving Workers	449	1%	$13.15

[1] Burning glass is an online job posting aggregation tool that uses intelligent "spidering" programs to search the Internet for job listings and integrates the information into a searchable database. While efforts have been made to remove duplication, it is possible that a posting removed and re-entered over the 12-month period is counted more than once.
*Selection option is high school diploma or vocational training; these two can no longer be isolated from one another.

Five of the top 20 occupations posted in the last 12 months exceed the average hourly living wage for one adult and one child: registered nurses; critical care nurses; sales representatives, wholesale and manufacturing; managers, all other; and first-line supervisors of office and administrative support workers. Living, poverty and minimum hourly wages are shown in Exhibit 12.

Exhibit 12: Average Living, Poverty and Minimum Wages with One Adult Working Full-Time

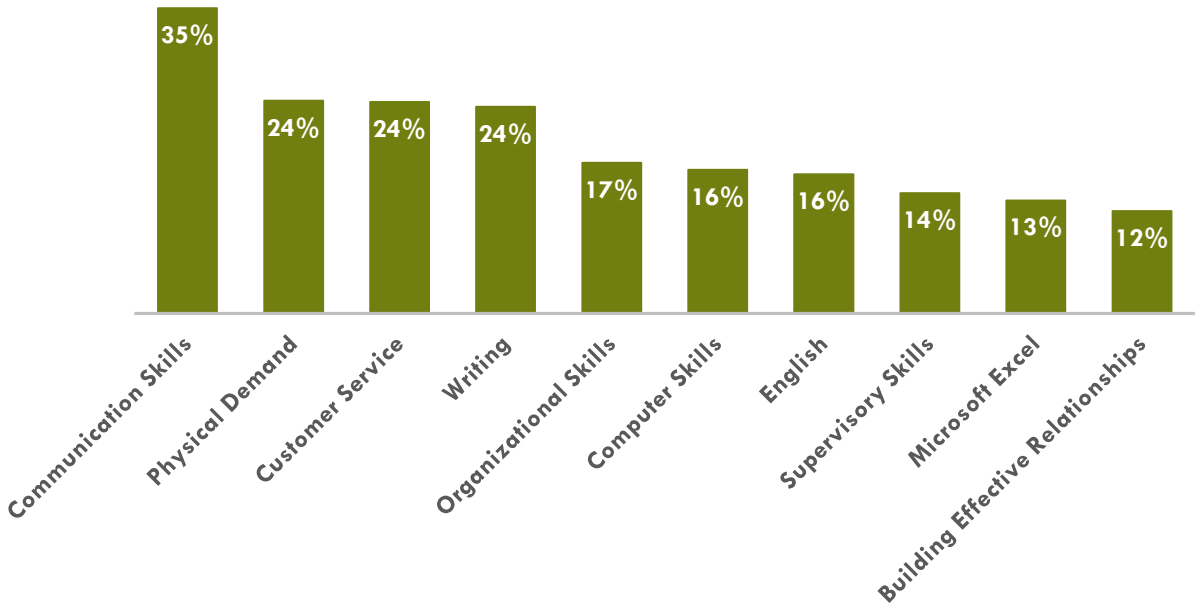
Hourly Wages	1 Adult	1 Adult 1 Child	1 Adult 2 Children	1 Adult 3 Children	2 Adults	2 Adults 1 Child	2 Adults 2 Children	2 Adults 3 Children
Living Wage	$10.59	$22.38	$ 25.95	$ 32.53	$ 8.46	$ 12.34	$ 14.35	$ 16.68
Poverty Wage	$ 5.00	$ 7.00	$ 9.00	$ 11.00	$ 3.00	$ 4.00	$ 5.00	$ 6.00
Minimum Wage	$ 9.00	$ 9.00	$ 9.00	$ 9.00	$ 9.00	$ 9.00	$ 9.00	$ 9.00

High Demand Skills

Of the 54,748 jobs posted in the Central Valley/Mother Lode Region between May 2015 and April 2016, 78% of them listed skills.

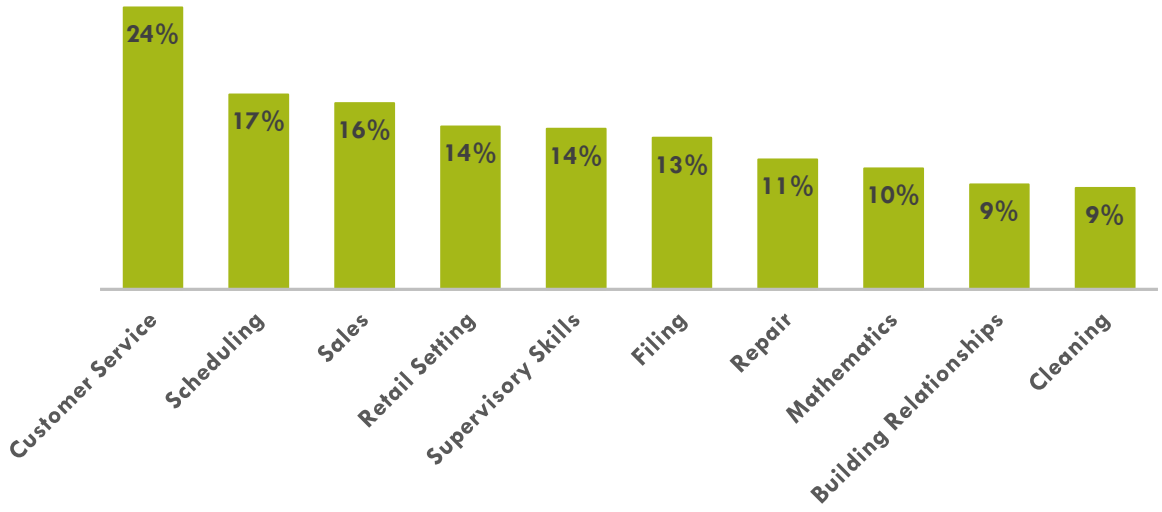
Baseline Skills: The baseline skills listed most frequently among the 42,619 postings included communication skills (35%), physical demand (24%), customer service (24%) and writing skills (24%) (Exhibit 13).

Exhibit 13: Baseline Skills in Greatest Demand



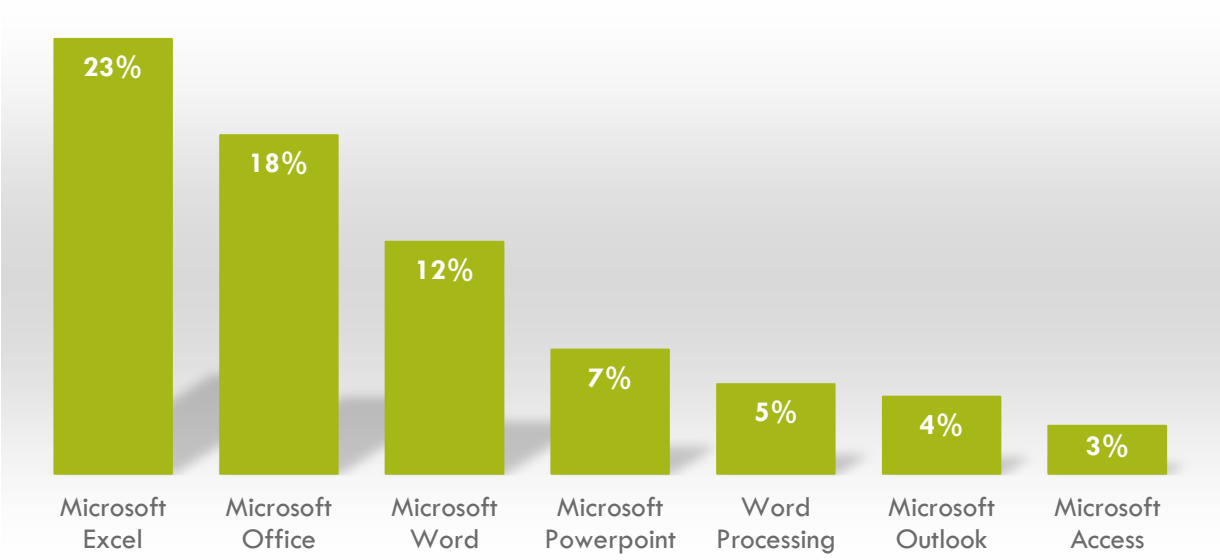
Specialized Skills: The specialized skills most frequently listed among the 42,619 postings were customer service (24%), scheduling (17%) and sales (16%) (Exhibit 14).

Exhibit 14: Specialized Skills in Greatest Demand



There were a total of 23,774 software specifications among the 42,619 postings. Of these 23,774 specifications, 73% were for a Microsoft product, and 23% were specific to Excel (Exhibit 15).

Exhibit 15: Software Skills in Greatest Demand



Summary

The Central Valley-Mother Lode Center of Excellence examined population characteristics, industry employment and occupational employment for the Central Valley/Mother Lode Region (Alpine, Amador, Bakersfield, Calaveras, Fresno, Inyo, Kern, Kings, Mariposa, Merced, Mono, San Joaquin, Stanislaus, Tulare and Tuolumne counties).

Over the next five years, the region is projected to undergo modest growth (3%), adding more than 132,000 new residents to its population of 4.4 million. From 2011 to 2016, the unemployment rate dropped from 17% to 10% as the labor force expanded by nearly 52,000 workers.

Educational attainment in the region lags behind state and national averages. While 30% of the nation's population holds a bachelor's degree, only 16% of the subregion's population holds a bachelor's or graduate degree, and 54% has a high school diploma or less. In addition, educational attainment is substantially lower for Hispanic residents, with 46% of the Hispanic population not having completed high school.

The Central Valley/Mother Lode Region has nearly 1.7 million jobs. The subregion's top four industries with the greatest number of jobs are retail trade and hospitality (19%), public administration (18%), health care and social assistance (13%) and agriculture (13%).

The study also examined employment and job projections for four major sectors in the subregion: health care and social assistance, retail, manufacturing and agriculture. With nearly 209,000 jobs, the health care and social assistance sector leads the subregion in projected growth and new positions. This sector is expected to expand by 13% in the next five years, adding 27,190 positions. With the addition of 11,011 jobs, the retail sector is projected to expand by 6%. Manufacturing and agriculture are projected to undergo slight growth at 2% and 3% respectively, adding 2,586 and 5,850 positions.

Occupational areas that are expected to add the most jobs include:

- Services for the elderly and persons with disabilities (12,082 new positions)
- Farm labor contractors and crew leaders (8,736)
- Warehouse clubs and supercenters (4,073)
- Home health care services (2,510)

Based on job posting data, the occupations most in demand are registered nurses, retail salespersons, first-line supervisors of retail sales workers and customer service representatives. Communication, physical demand, customer service and writing are the baselines skills most highly sought by employers. Scheduling and sales are specialized skills also frequently requested in job postings.

Appendix A: Sources, Terms and Definitions

This labor market report was prepared for the Central Regional Consortium by the Central Valley/Mother Lode California Center of Excellence (COE), an initiative of the California Community Colleges Economic and Workforce Development program.

Data Sources

Population estimates and projections: Economic Modeling Specialists Inc. (EMSI), http://www.economicmodeling.com/

Educational attainment: Economic Modeling Specialists Inc. (EMSI), http://www.economicmodeling.com

Labor force, employment and unemployment estimates: California Employment Development Department, Labor Market Information Division, labormarketinfo.edd.ca.gov

Industry and occupational employment estimates and projections, wages and other data: Economic Modeling Specialists Inc. (EMSI), http://www.economicmodeling.com/

Job posting data: Burning Glass, http://www.burning-glass.com/

Living wage calculator: http://livingwage.mit.edu/states/06/locations

Related Terms and Definitions

The **civilian labor force** is the sum of civilian employment and civilian unemployment. Civilians, as defined, are age 16 years or older, not members of the military, and are not in institutions such as prisons, mental hospitals, or nursing homes.

Civilian employment includes all individuals who worked at least one hour for a wage or salary, or were self-employed, or were working at least 15 unpaid hours in a family business or on a family farm, during the week including the 12th of the month. Those who were on vacation, on other kinds of leave, or involved in a labor dispute, were also counted as employed.

Civilian unemployment includes those individuals who were not working but were able, available, and actively looking for work during the week including the 12th of the month. Individuals who were waiting to be recalled from a layoff and individuals waiting to report to a new job within 30 days were also considered to be unemployed.

Wages Family Compositions: The living wage calculator estimates the living wage needed to support families. For single adult families, the adult is assumed to be employed full time. For two adult families where both adults are in the labor force, both adults are assumed to be employed full time. For two adult families where one adult is not in the labor force, one of the adults is assumed to be employed full time while the other non-wage-earning adult provides full-time child care for the family's children. Full-time work is assumed to be year-round, 40 hours per week for 52 weeks, per adult. Families with one child are assumed to have a 'young child' (4 years old). Families with two children are assumed to have a 'young child' and a 'child' (9 years old). Families with three children are assumed to have a 'young child,' a 'child,' and a 'teenager' (15 years old).

ATTACHMENT 6

FRESNO STATE
Community and Economic Development

California Partnership for the San Joaquin Valley

SAN JOAQUIN VALLEY

REGIONAL INDUSTRY CLUSTER ANALYSIS AND ACTION PLAN

SEPTEMBER 2012

Prepared for:
Office of Community and Economic Development
California State University, Fresno

On Behalf of
California Partnership for the San Joaquin Valley

Prepared by:
Applied Development Economics

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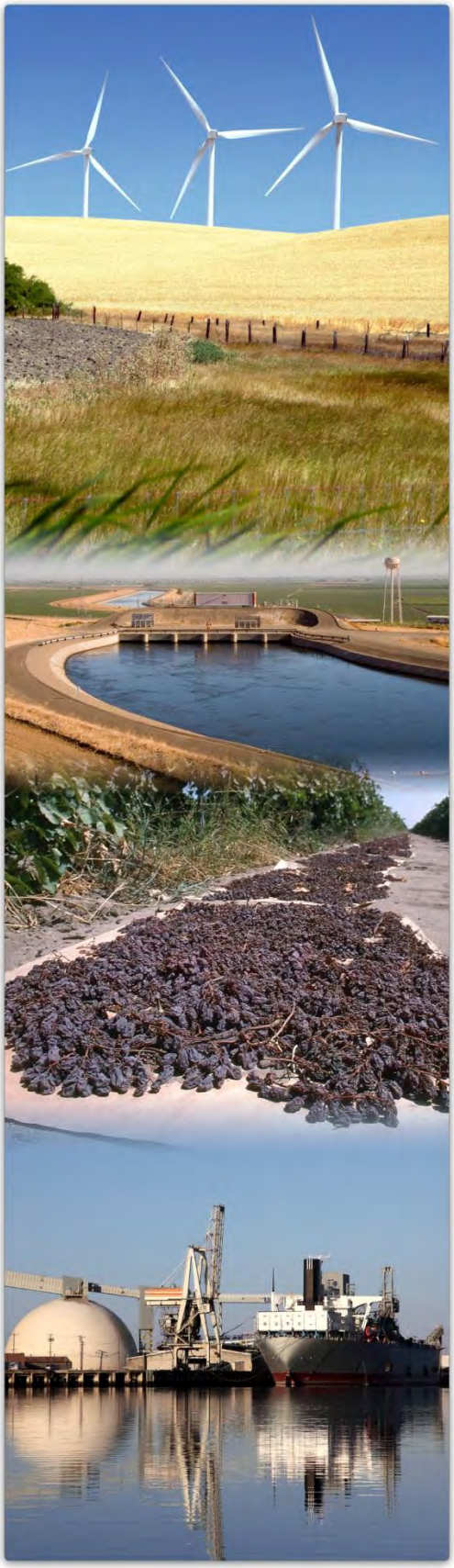

Prepared for:

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ARISIAN DEVELOPMENT

BAY AREA GREEN BUSINESS

Thanks to the many partners who provided their invaluable assistance and guidance for this project, including co-hosting convenings, engaging members and stakeholders, providing information resources and logistical support, and networking:

Adventist Health
Bakersfield College
Building Healthy Communities, South Kern
Business and Entrepreneurship Center
California Center for Applied Competitive Technologies
California Centers for International Trade Development
California Central Valley Economic Development Corp. (CCVEDC)
California Emerging Technology Fund
California State University, Bakersfield
California Strategic Growth Council
California Water Institute
California Workforce Investment Board
Caltrans, District 6
Cambridge Systematics, Inc./Jock O'Connell Consulting
Center for Irrigation Technology, Fresno State
Central California Business Incubator
Central California Center of Excellence (Modesto Junior College)
Central California Community Colleges Committed to Change (C6)
Central California Obesity Prevention Program (CROPP)
Central Region Consortium (California Community Colleges)
Central Valley Business Incubator (CVBI)
Central Valley Health Network
Central California Workforce Collaborative (CCWC)
City of Fresno
Clinica Sierra Vista
Council on Adult and Experiential Learning
Economic Development Corporation serving Fresno County
Employers' Training Resource (Kern County)
Federal Reserve Bank of California, Community Development
Fresno Business Council
Fresno City College
Greater Stockton Chamber of Commerce/REACON
Health Sciences Research Institute, UC Merced
Kern County Economic Development Corporation
Kings County Economic Development Corporation
Fresno Workforce Investment Board (Workforce Connection)
Hospital Council of Northern and Central California
Kaiser Permanente Central Valley
Kern Community College District
Great Valley Center
Local Government Commission
Lyles Center for Innovation and Entrepreneurship
Manufacturers Council of the Central Valley
Merced College Business, Industry and Community Services
Pacific Gas and Electric
Regional Policy Council/Councils of Government
Regional Jobs Initiative Implementation Team
San Joaquin Partnership
San Joaquin Valley Air Pollution Control District
San Joaquin Valley Clean Energy Organization
San Joaquin Valley College
San Joaquin Valley Rural Development Center
Stanislaus Alliance WorkNet
TeamCalifornia
The California Endowment
The Maddy Institute
UC Davis Center for Regional Change
UC Advanced Solar Technologies Institute
UC Merced SBDC Regional Network
University Center to Advance Manufacturing (UCAM)
USDA Rural Development, California
Water, Energy and Technology (WET) Center
West Hills Community College District
Workforce Investment Board of Tulare County

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CHAPTER 5

EXECUTIVE SUMMARY

"CHARTING THE COURSE FOR THE SAN JOAQUIN VALLEY'S ECONOMIC FUTURE"

PROJECT OVERVIEW

In August 2011, the Office of Community and Economic Development (OCED), California State University, Fresno received an Economic Adjustment grant from the Economic Development Administration (EDA), U.S. Department of Commerce, to prepare a valley-wide industry cluster analysis and a regional strategy – Action Plan – to catalyze the growth of priority clusters. They have been prepared for OCED on behalf of the California Partnership for the San Joaquin Valley (Partnership). The Project's goal is to support improved regional economic performance, sustainability, and shared opportunity for Valley residents, businesses and communities.

The Partnership is an unprecedented public-private sector partnership between the Valley and the state of California. It was created in 2005 to address the Valley's persistent economic, environmental and social challenges and disparities compared to other regions in the state and nationally, while acknowledging the statewide and national significance of the Valley, and changing the pathway for its economic future and overall well-being.

As part of its charge, in 2006 Partnership leaders prepared a Strategic Action Proposal (SAP), *The San Joaquin Valley, California's 21st Century Opportunity*. OCED serves as the Secretariat for the Partnership and manages the SAP through the "New Valley" program, through which ten Work Groups were created to develop and implement the New Valley's first five year action plans (2006-2011). Most of the Work Groups are led by OCED partner organizations at the regional level. OCED also manages or supports many other synergistic programs, aligning university resources with Valley initiatives and leveraging state, federal, philanthropic and other resources on behalf of regional and local initiatives.

The Cluster Action Plan provides recommendations for the New Valley's next stage. According to Corwin Harper, Partnership Deputy Chair, Senior Vice President, Kaiser Permanente Central Valley, and co-convenor for one of the project's Health and Wellness Cluster meetings, "This is an opportunity to achieve big outcomes for the Valley, focusing on the key few "big things" the Partnership can do, where the Valley has a regional competitive advantage."

THE NEED FOR A REGIONAL CLUSTER UPDATE

Clusters are geographic concentrations of firms and industries that do business with each other and have common needs for talent, technology, and infrastructure. According to EDA, Regional Innovation Clusters (RIC) are a proven way to create jobs and grow the economy. They benefit from a well-developed regional strategy that leverages core regional strengths.[1]

The Valley has been a leader in cluster-based strategies, starting with *The Economic Future of the San Joaquin Valley* report in 2000 and the Fresno Regional Jobs Initiative (RJI) in 2003. The RJI resulted in the creation of 12 clusters. Building upon these efforts, the SAP identified five regional clusters of opportunity for focused action: agribusiness, health and medical, manufacturing, renewable energy, and supply chain management and logistics. These clusters reflected shared priorities across the Valley and sectors where the region's comparative advantage was considered to be strong or emerging.

The clusters have been a touchstone for the work of the New Valley, in particular for the economic development, education and workforce development partners who serve as champions for several of the New Valley Work Groups. Much progress has been made in terms of regional collaboration around demand-driven cluster and sector strategies. However, a valley-wide regional cluster analysis had not been prepared since 2004, and updated "market intelligence" was needed to help guide the next stage of the New Valley cluster implementation.

This Project addresses a number of concerns and issues:

- The Valley has been more severely impacted by the "Great Recession" than most other California regions and needs to reposition itself for economic recovery.
- The global economy is experiencing structural changes and new opportunities are emerging which demand new responses at the regional level.
- Local budget challenges constrain the ability of many jurisdictions, partners and business champions to manage, implement and support county and regional cluster initiatives.
- There are emerging areas of opportunity that can best be leveraged through collaboration at the regional level, bringing efforts to scale for increased competitiveness. These areas include renewable energy and water technology innovations, and regional food systems.

The planning process involved economic analysis; research; documentation of cluster-related initiatives and resources; cluster stakeholder meetings which were co-convened with many partners throughout the Valley; meetings and ongoing consultation with partners, cluster leaders, subject area experts, state and federal agencies, and Partnership Board members; and review of cluster innovation models.

[1] http://www.eda.gov/AboutEDA/RIC/

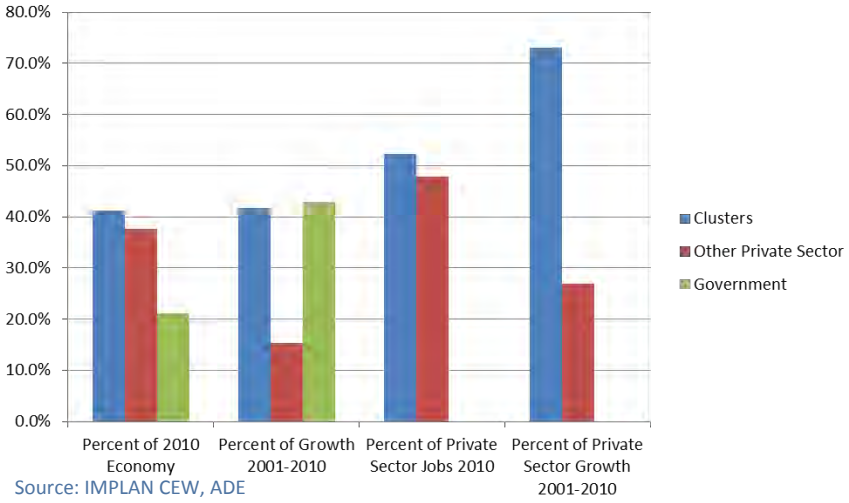
IMPORTANCE OF THE CLUSTERS

The San Joaquin Valley is an economic powerhouse. Recent estimates place the Gross Domestic Product (GDP) of the Valley at $140 billion, and total industry production including intermediate and final goods at $228.6 billion in 2010. [2]

ADE analyzed the Valley's major economic sectors and validated that the five original New Valley clusters continue to be the shared priorities across the region, although they have been adapted or expanded upon through the value chain concept. Each cluster contains several "components," each with sets of industries that comprise the value chain. For example, the Agriculture Cluster includes production, processing and packaging, distribution and diverse support activities. The Health Cluster now incorporates dimensions of wellness. Two clusters have been added – water technology and public sector infrastructure, based on their current and emerging importance and potential for the Valley. The 2012 Action Plan priority clusters are:

- Agriculture
- Energy
- Health and Wellness
- Logistics
- Manufacturing (which is connected to all of the clusters)
- Water Technology
- Public Sector Infrastructure (Construction)

The analysis indicates that as of 2010, these clusters (with the exception of public sector infrastructure, for which information was provided in a separate analysis sponsored by the Central California Workforce Collaborative) represent about 41 percent of total employment in the region, but during the 2001-2010 period were responsible for 73 percent of private sector job growth, as shown below.



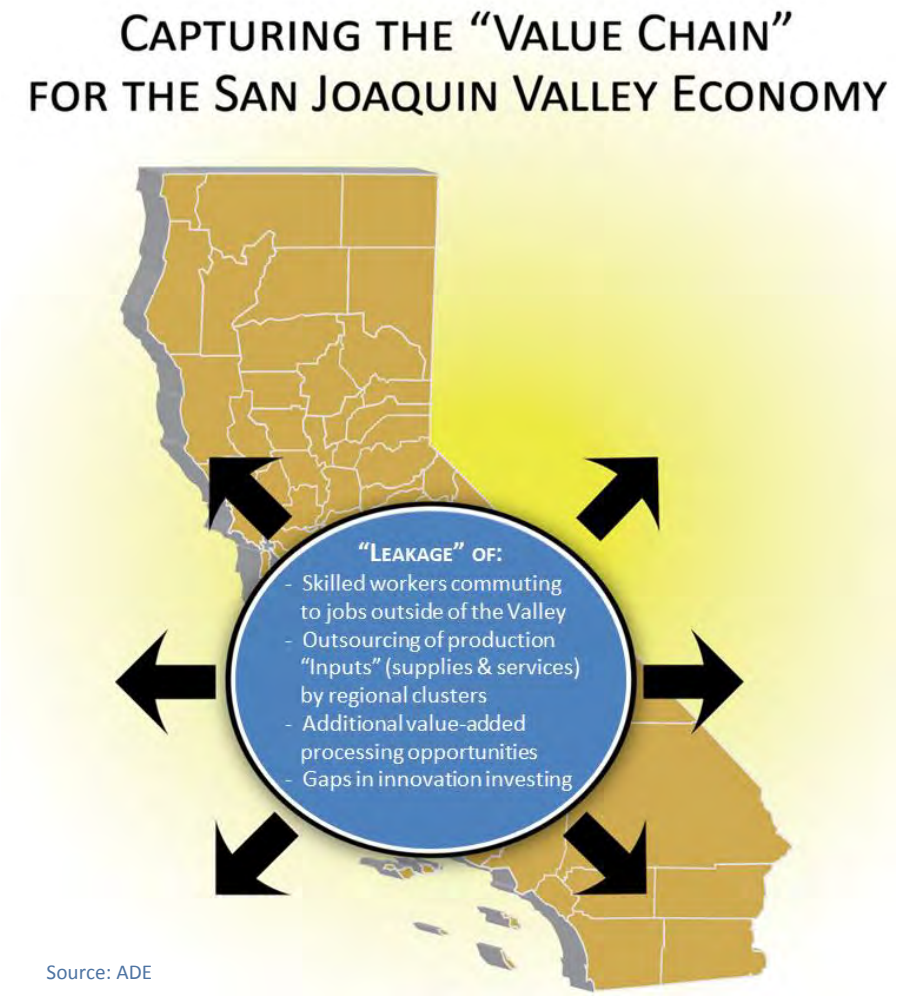
Source: IMPLAN CEW, ADE

[2] GDP obtained from Center for Continuing Study of the California Economy, Numbers in the News, September 2012. Industry output calculated by ADE from the IMPLAN3 input-output model used for the cluster analysis.

CAPTURING THE "VALUE CHAIN"

Even in clusters where the Valley has comparative advantage, such as agriculture and logistics, the Valley is not capturing the "value chain" – where value is added along the continuum of economic activity within the components of a cluster. Instead, goods flow out of the Valley where value is added later, and businesses and industries that buy goods and services from other businesses are buying a significant share of those goods and services outside the Valley, representing a leakage of economic potential.

This report documents other kinds of leakage that occur as well, including skilled workers who commute to jobs located outside of the Valley; jobs within the Valley going to workers who live outside of the Valley; and loss of innovation. This loss of innovation is related to intellectual capital (inventions, patents, etc.) leaving the Valley in pursuit of investment capital or a more supportive entrepreneurial environment, including for specialized research and development, legal and business services.



Source: ADE

The cluster analysis identified areas of potential growth across the Valley and for the eight counties based on trends in size of the clusters; rates of employment growth, especially in specific cluster "components" or industry groupings; concentration in the Valley compared to the state; and rate of growth compared to the state's rate. This information provides insight into the region's areas of comparative advantage. The analysis also identified trade flows indicators – output of goods and services produced by each cluster, and leakage outside of the Valley based on business-to-business supplier inputs of goods and services in 2010. Regional demand for each cluster's goods and services by non-cluster-related consumers (households, institutions and other businesses) also was estimated.

The leakage analysis was conducted for individual clusters, resulting in a potential list of economic development targets for business expansion, start-ups and attraction to meet these gaps. The findings were reviewed at several industry cluster meetings convened by OCED and ADE along with partners across the Valley, and have been validated as a high priority for implementation action. ADE also aggregated these estimates of leakage by commodity type across the clusters to identify those with high levels of leakgage, further screening them for business types that realistically could be developed in the region. The table below summarizes the potential economic development targets by type of commodity supplied from outside the region and the estimated level of "leakage" – and therefore market support – for new or expanded businesses. The gaps are very large in some commodity areas.

AGGREGATED ECONOMIC DEVELOPMENT LEAKAGE TARGETS

Description	Market Support
Lessors of nonfinancial intangible assets	$712,685,000
Scientific research and development services	$699,203,000
Paper mills	$611,657,000
Oilseed farming	$457,940,000
Other basic organic chemical manufacturing	$395,251,000
Petrochemical manufacturing	$388,308,000
Artificial and synthetic fibers and filaments manufacturing	$385,175,000
Software publishers	$375,381,000
Plastics material and resin manufacturing	$363,584,000
Automotive equipment rental and leasing	$336,797,000
Plastics bottle manufacturing	$336,107,000
Management, scientific, and technical consulting services	$323,597,000
Aluminum product manufacturing from purchased aluminum	$303,463,000
Advertising and related services	$284,775,000
Paperboard Mills	$257,934,000
Other plastics product manufacturing	$244,702,000
Semiconductor and related device manufacturing	$241,775,000
Metal can, box, and other metal container (light gauge) manufacturing	$222,663,000
Plastics packaging materials and unlaminated film and sheet manufacturing	$220,031,000
Motor vehicle parts manufacturing	$212,772,000
All other chemical product and preparation manufacturing	$169,215,000
All other basic inorganic chemical manufacturing	$166,139,000
Architectural, engineering, and related services	$165,780,000

Source: IMPLAN 3 I-O Model, ADE

"Lessors of nonfinancial intangible assets" was the largest category shown. Activities in this industry include brand name licensing; franchising agreements, leasing, selling or licensing; oil royalty companies; oil royalty leasing; industrial design licensing; patent buying and licensing; patent leasing; and trademark licensing. This industry represents specialization of business services, including legal expertise, which is sought outside of the Valley.

"Scientific research and development services" was the next largest market gap. Combined with management, scientific and consulting services, these industries provide another professional services target for developing specialized expertise within the Valley. Research and scientific consulting services are a growth opportunity in both the Energy and Health and Wellness Clusters. Oilseed farming was the fourth largest gap and relates to the Agriculture and Energy Clusters, including as an input for biofuels. Most of the other potential targets are in manufacturing industries. The architectural, engineering, and related services industry is another potential growth area, especially with opportunities related to planned public sector infrastructure construction (estimated at more than $36 billion from 2010-2020 across several infrastructure categories).

CLUSTER ACTION PLAN PRIORITIES

The economic and cluster analyses and partner/stakeholder engagement process provide: 1) a platform for the evolution of the Valley's cluster initiatives; 2) a framework to align initiatives and resources to capture value chain opportunities; and 3) articulation of the role for the Partnership and OCED for the next phase of the New Valley, including the organization of the Work Groups to lead or support the clusters.

The Valley has significant assets. There are an almost overwhelming number of initiatives underway across the Valley and related to the clusters, as well as efforts that are increasingly a convergence across the clusters, such as with Agriculture, Energy and Water Technology. A great deal of leadership and expertise resides with the partners involved in these initiatives, but they are dealing with diminished resources, the very large scale of the Valley, a diversity of issues facing the clusters, and the inherent challenges of collaboration such as capacity and dedication of time. However, partners increasingly are developing the capacity to regionalize their networks and ways to engage in specific initiatives on behalf of their networks. This network-to-network process is proving to be very beneficial. The Partnership and OCED's goal should be to connect, support and optimize these assets and initiatives.

The Project planning process led to the identification of many cluster-related issues, opportunities and recommendations. The highlights are discussed in Chapter 5 and are summarized on the following page. They constitute the basis for development or refinement of cluster-specific implementation plans by the New Valley Work Groups and associated cluster leaders and partners. They are a starting point for focusing on a "few big things" in 2013 – a core set of tangible initiatives with targeted outcomes and metrics that are the platform for engagement. There is an especially strong emphasis on education and workforce initiatives, around which the Valley has been mobilizing for several years to meet critical skills gaps and provide a pathway from poverty to prosperity for workers.

KEY CLUSTER ACTION PLAN PRIORITIES		
Cluster	**Issues/Opportunities**	**Recommended Actions**
Agriculture	• All 5 issue areas addressed in Regional Economic Summit	• All actions have designated champions and recommended actions; Partnership & OCED are tracking progress. See www.sjvpartnership.org
Energy	• Regional focus on cluster development & coordination needed; opportunity to develop biofuels; better define cluster components • Conditional Use permits vary by county – frustrating for international companies willing to invest in the Valley; results in project delays or cancellations • Increase entrepreneurial climate; need to create culture of early stage investment, create dialogue with entrepreneurs, & encourage students to create the next generation of solar technology • Leakage of energy use	• SJV Clean Energy Organization should be lead for cluster development action plan; expand networking to connect more stakeholders • Advocate for funding for SJV Regional Energy Plan Roadmap • Coordinate with County Planners (CSAC) working on simpler expedited solar permitting process throughout the state; coordinate locally • Coordinate with UC Solar Research Institute, CVBI, Lyles Center for Innovation and Entrepreneurship, Central Valley Fund, Business and Entrepreneurship Center, UC Merced SBDC Regional Network, CalFOR & others to accelerate technology commercialization & entrepreneurship • Provide input to PUC on energy facilities sitings • See Regional Economic Summit Strategy recommendations
Health and Wellness	• Difficult to coordinate with so many initiatives across the Valley • Need for consistent and regionalized standards and curriculum for same occupations/certificates, & for transferability of credits from Community Colleges to CSUs • Need to standardize residency requirements for nurses • Address gaps in workforce skills – need for better information, programs to increase skill levels • Need to prepare for health information technologies; expand broadband infrastructure • Need improved access to jobs and health care services in rural areas • Wellness/prevention focus will increase demand for services and workers	• Partnership health leaders should convene high level cluster meetings • Advocate for transfers within regional network of accredited courses (C6 project is opportunity to standardize curriculum), including for nursing • Collaborate with hospitals to unify employee competencies, translate to college curriculum • Expand nursing residencies across the Valley; coordinate with hospitals, community colleges, universities • Advocate for Regional Industry Clusters of Opportunity (RICO) funding • Expand mentoring programs • Coordinate with SJV Regional Broadband Consortium, employer networks like Central Valley Health Network, WIBs, etc. for e-health • Collaborate with Councils of Government, employers, transit agencies to develop more regional, coordinated transportation systems • Expand Patient Navigator, Promotora and other model programs • Coordinate with UC Merced Health Sciences Research Institute, CVBI, and entrepreneurship centers
Logistics	• Additional options for goods movement needed (non-truck) • Foreign Trade Zones underutilized • Emissions impact air quality and health • Issues identified at Regional Economic Summit	• Ensure coordination between Regional Policy Council/COGs (stakeholder planning process underway), SJV Air Pollution Control District, CCVEDC, Caltrans, Partnership Sustainable Communities Work Group, railroad companies on planning/projects • See Regional Economic Summit Strategy recommendations
Manufacturing	• Main issue for employers is workforce development • Lack of high-level engineering jobs in the Valley, so many students leave the region • Need cross-pollination of engineering workplace skills with existing workforce • Need appropriate infrastructure to create new products out of recycled products; waste commodities being shipped overseas	• Identify lead cluster partners • Coordinate with C6 and California Center for Applied Competitive Technologies for increased training; including in skilled trades • Match resources of the universities to the manufacturers; connect internships with employers; support UCAM • Develop a strategy to close supplier gaps • Do policy advocacy (coordinated by REACON) on increase markets for recycling in California (Recycling BIN – Build Infrastructure Now)
Water Technology	• Demand for clean water, sustainable water resources & infrastructure is creating new business opportunities beyond agriculture • Issues identified at Regional Economic Summit	• Broaden focus of R&D to address diverse water supply and quality issues across an increased range of industries; coordinate with WET Center, Lyles College of Engineering, CVBI & other partners • Focus on growth of specific technologies (BlueTech Valley) • See Regional Economic Summit Strategy recommendations
Public Sector Infrastructure - (CCWC Project)	• RJI Construction Cluster not active • Lack of awareness regarding aggregated impact of public sector investments • Updated inventory of projects & schedules needed on ongoing basis • Coordination needed with economic development and planning to secure project funding	• Implement CCWC Regional Plan as Cluster Strategy for workforce • Coordinate with Partnership to advocate for public sector investment/local hiring • Identify lead to update project inventory and schedule • Coordinate with Regional Policy Council and SJV Economic Development District to link project priorities with possible funding sources

LEVERAGING COLLECTIVE IMPACT

The recent conference *Meeting of the Minds in Monterey,* sponsored by the California Workforce Association, was framed around the concept of "Collective Impact." Research and practice have documented early successes based on this concept, finding "that large-scale social change comes from better cross-sector coordination rather than from isolated intervention of individual organizations."[3]

The California Partnership for the San Joaquin Valley and many of the regional collaboration initiatives underway across the Valley are in and of themselves innovation models. They exemplify many of the characteristics of successful collective impact initiatives: a common agenda, shared measurement systems, mutually reinforcing activities, continuous communication, and backbone support organizations. They provide a strong foundation for advancing the Cluster Action Plan priorities and charting the pathway for the Valley's future, especially if their knowledge and expertise can be leveraged and brought to scale. They are referenced throughout the report.

Concurrently, there are major new initiatives, especially at the state, federal and philanthropic levels, that are aligning with regional cluster-based economic strategies, including linking economic and workforce development from the ground up. These are catalytic initiatives and the Valley is well-positioned to contribute to and benefit from these initiatives. They also are referenced in the report and a few of the key ones are summarized as follows:

"Doing What Matters for Jobs and the Economy" – an initiative of the California Community Colleges, Division of Workforce and Economic Development. Goals are to supply in-demand skills for employers, create relevant career pathways and stackable credentials, promote student success and get Californians into open jobs. The focus is on spurring job creation and bridging skills gaps in priority/emergent sectors and clusters; taking effective practices to scale; integrating and leveraging programming between funding streams; promoting metrics for students success; and removing structural barriers. This initiative is a collaboration with the California Workforce Investment Board, which is preparing the State Strategic Workforce Plan; a prioirity is supporting regional economies and Regional Industry Clusters of Opportunity (RICO). The Central Region Consortium and the Central California Community Colleges Committed to Change Initiative (C6) include the Valley's Community Colleges which are partners in the development of the Cluster Action Plan. The C6 Initiative is supported by a major federal grant, focused on systemic changes for academic success and skills building in the areas of agriculture, energy, heatlh and manufacturing. The California Workforce Investment Board's investment in the Valley's RICO project is seen as a foundation for health-related cluster efforts.

California Financial Opportunities Roundtable (CalFOR) – is part of a statewide initiative supporting regional industry clusters to provide jobs, entrepreneurial opportunities, business growth, and public and private sector investment in value-chain infrastructure and sustainable communities. CalFOR has developed the "Access to Capital" guide to support innovation in capital markets and provide new

[3] Kania, John and Mark Kramer, "Collective Impact," Stanford Social Innovation Review, 48, Winter 2011, p. 3.

sources of investment; expansion of regional food systems; growth of biomass utilization, biofuels and renewable energies; and improved Rural-Urban collaboration. USDA Rural California is a core partner and one of the lead federal agencies in the Fresno area's Strong Cities Strong Communities Initiative as well in many other Valley initiatives, including the San Joaquin Valley Broadband Consortium managed by OCED, development of the Valley's "Ag Tech Cluster," and support for "buy local/invest local" efforts.

California Stewardship Network – a network of regional collaboratives throughout the State, including the California Partnership for the San Joaquin Valley, participating in the development of the California Economic Action Plan, based on priorities identified through regional economic summits and the statewide Economic Summit held in May 2012. The Action Plan is moving forward.

With consideration of opportunities to leverage collective impact through the implementation of the Cluster Action Plan, the following section addresses the roles of the Partnership, OCED and the New Valley Work Groups in driving the progress and success of the Valley's Regional Innovation Clusters for the next five years of the New Valley initiative.

ROLE OF THE PARTNERSHIP

Given its mission and role, how and where can the Partnership best add value at the regional level for successful on-the-ground implementation and long-term impact on the Valley's key measures of economic, environmental and community progress? Participants in the Project planning process identified the following desired roles for the Partnership in advancing an agenda for regional prosperity:

Network – Help connect the many efforts across the region that are cluster-based or support the clusters (cluster foundations such as infrastructure – including broadband, sustainable communities, financing, environmental quality, and education and workforce).

Convene – Play a convening role for the bigger valley-wide issues that are not being addressed in other forums, to drive the agenda for the growth and vitality of the clusters.

Integrate – Provide synergy across the region, helping to knit together the clusters, the issues and the initiatives to pursue shared priorities.

Advocate – Promote and advocate regarding cluster priorities on behalf of the Valley, including the removal of barriers, elevation of regional issues and opportunities, resource needs, and networking with partners and investors outside of the region.

Catalyze – Be a catalyst for collaboration and the diffusion of innovation, including through the elevation of models.

The Partnership plays many of these roles already. The next step is for more intentional engagement around cluster-based economic strategy. Cluster processes are by their nature vehicles for engagement of champions, businesses, stakeholders and partners in regional strategies. During the course of the project, ADE found that awareness of the Partnership was varied. Proactive engagement of the Partnership in the implementation of the Action Plan will increase this awareness and expand its impact.

This process can be guided by the Executive Committee of the Partnership. At the Partnership's September 2012 Board meeting, Executive Committee members indicated they would convene specifically to discuss the next steps for Action Plan implementation, including the identification of a set of tangible strategic initiatives for 2013, and its role in overall implementation. Participation of individual Partnership Board members in the New Valley Work Groups, especially as OCED coordinates with the Work Groups to identify their priorities for 2013 implementation initiatives, will be most valuable, building on their expertise and leadership role provided during the Project planning process.

ROLE OF OCED/NEW VALLEY WORK GROUPS

One of the key elements for successful collective impact efforts is the presence of backbone support organizations. Successful collaboration requires a supporting infrastructure. This requirement is extremely important for effective cluster initiatives. As Secretariat for the Partnership, OCED plays a critical backbone role. Implementation of the Cluster Action Plan will require an increase in or realignment of existing OCED capacity to support or lead the New Valley Work Groups; continue OCED's outreach, networking, coordination and consultation process around the cluster opportunities; and engage new partners, stakeholders and leaders in Work Group and Action Plan initiatives.

The Work Groups are at varying levels of capacity and operational status; some need to be revitalized or refocused. Several of the Work Groups have updated their work plans within the past year, while others are in process of updating them. The Health and Human Services Work Group has not been active and is being reorganized by OCED as the Health and Wellness Work Group, to align with Action Plan recommendations. It will be managed by OCED during this process. OCED will continue as the lead for the San Joaquin Valley Regional Broadband Consortium (Advanced Communications Work Group) and the Housing Work Group, and will continue in its support of the other Work Groups.

OCED has been discussing with partner organizations, including those which currently lead or support the Work Groups, the role they can and would like to play in Action Plan implementation. Staff will be following up with the Work Group leads and key partners to discuss specific Action Plan findings and recommendations, to see how they fit with Work Group goals and activities, and determine how OCED can support the Work Groups to integrate Action Plan recommendations into their existing scopes of work. A key OCED role will be to help connect and coordinate partners and initiatives across the Work Groups and with other major initiatives, and to be a liaison with the Partnership Executive Committee. OCED will designate a lead staff for this role.

NEXT STEPS

OCED has been working on implementation next steps since the summer of 2012, based on the emerging findings of the Cluster Analysis; the results of the Cluster stakeholder meetings; ongoing consultation and meetings with partners – especially economic and workforce development networks (CCVEDC, CCWC, Central Region Consortium, and C6); and connecting with new initiatives such as

"Doing What Matters for Jobs and the Economy." As noted, the Partnership's Executive Committee will play an important role in the Project's implementation, along with individual Board members engaged with specific clusters. OCED is working with the Committee and the Board on this process. The following is a list of recommended next steps for the Partnership and OCED to carry forward the Action Plan.

1.	**Work Group Leads/Work Plans.** OCED staff will meet with Work Group leads and partners to review Project findings and recommendations and alignment with existing work plans; confirm lead partners and expanded/refined roles; identify 2013 priority cluster initiatives; and support work plan updates and expanded engagement of stakeholders. OCED should convene the stakeholders from the June meeting of the Manufacturing/Energy/Logistics Clusters to identify cross-cluster priorities and actions. This process will be coordinated with the Partnership's Executive Committee. OCED should coordinate with USDA Rural Development and other champions on the implementation of the Ag Value Chain Regional Economic Summit action priorities.
2.	**Health and Wellness Cluster Work Group.** OCED should work with Partnership board members to convene the Cluster stakeholders to identify priorities, develop the work plan around Action Plan recommendations, and drive the implementation of the work plan.
3.	**Economic Development Targets.** OCED is working with CCVEDC and other partners on the process to develop a strategy for the Economic Development Targets (aggregated and cluster-specific), and identify a lead for implementation of the strategy. Partners should coordinate with TeamCalifornia to enhance marketing and outreach opportunities on the Valley's cluster priorities.
4.	**Economic Development/Education/Workforce Coordination.** OCED should develop a process for increased, systemic linkages between economic development, education, and workforce development partners (CCVEDC, CCWC, Central Region Consortium, C6, universities) around regionalized cluster-focused issues. The partners should collaborate to seek funding support for: research to identify priority workforce gaps and occupational demand; designated staff to facilitate the coordination process across the clusters and the systems; expanding the reach of innovative training programs. OCED should facilitate integrated connections with state partners such as the California Workforce Investment Board, California Labor and Workforce Development Agency, Chancellor's Office, the Employment Training Panel, and the U.S. Dept. of Labor.
5.	**Public Sector Infrastructure/Logistics.** OCED should convene the CCWC, the SJV Regional Policy Council, CCVEDC, Caltrans, labor, and other partners to link the interregional goods movement planning process and CCWC's Public Sector Infrastructure Workforce Plan, including for identification of project funding priorities, funding sources for construction projects, and workforce development needs. Leverage the new Economic Development District.
6.	**Work Group Coordination.** OCED should convene the leadership of the New Valley Work Groups quarterly for updates on their work plans, and facilitate coordination across Work Groups and initiatives on an ongoing basis.
7.	**Regional/State Economic Summits.** The Partnership and OCED will continue coordination with the statewide economic summit process, and align the annual outcomes of the Work Group work plans for the Valley's next regional economic summit (fall of 2013) and state-wide summit (late 2013). OCED and the Work Groups should report on the progress of the 2013 cluster initiatives at the next Regional Economic Summit.
8.	**Reporting Process.** OCED should develop a process to report on Cluster Action Plan activities, metrics and progress to the Partnership's Executive Committee on an ongoing basis. The growth of the clusters should be tracked as an annual metric.
9.	**Communications.** OCED should create a dedicated location on the Partnership's website for the Cluster Action Plan and resource materials, building upon the Regional Economic Summit materials. It should use the Cluster Action Plan implementation as a vehicle for communications about the Partnership, and as a portal to partner initiatives and resources.

CHAPTER 1
PROJECT OVERVIEW, FRAMEWORK AND REGIONAL CLUSTER PRIORITIES

1.1 PROJECT OVERVIEW

This report presents an analysis of the San Joaquin Valley economy and the San Joaquin Valley Regional Industry Cluster Action Plan, prepared for the Office of Community and Economic Development (OCED), California State University, Fresno on behalf of the California Partnership of the San Joaquin Valley. The Cluster Action Plan identifies emerging opportunities for the region's comparative advantage industry clusters – the foundation for innovation, competitiveness, and future well-being – within the context of global, national, state and regional drivers and conditions. Among these drivers is the increasing imperative for improved health, sustainability, energy self-sufficiency, and shared prosperity.

The Partnership is an unprecedented public-private sector partnership between the Valley and the state of California, involving the Valley's eight counties and 62 cities, home to more than four million Californians in 2012. It was created in 2005 with Governor Schwarzenegger's Executive Order S-05-05. The creation of the Partnership was designed to address the region's persistent economic, environmental and social challenges and disparities compared to other regions in the state and nationally, while changing the pathway for the Valley's economic future and overall well-being. Its creation also acknowledged the critical importance of the Valley to the state and national economy.

Since the formation of the Partnership, the San Joaquin Valley has been particularly hard hit by the Great Recession, the implosion of the housing and financial markets, and state and local budget deficits. Unemployment and poverty rates are among the highest in the State. The region is a federal non-attainment area for air quality, and has other significant challenges including the availability and quality of water and energy resources, aging infrastructure, and continuing conversion of important farmlands.

At the same time, the Valley is a region of statewide and national significance. It is one of the fastest growing and increasingly diverse regions in the State. Its agricultural industry is a global economic powerhouse. The Valley holds great potential as a center for renewable energies, and clusters such as the Water Technology Cluster are increasingly recognized as industry leaders in technology innovation, providing solutions for water quality, energy efficiency and resource scarcity issues that communities worldwide are facing. It is a major goods movement corridor. The Sacramento-San Joaquin Delta on the western edge of the Valley provides water for a large percentage of Californians, the Central Valley Water Project is one of the state's major infrastructure systems, and the eastern side of the Valley is the gateway to the majestic Sierra.

The California economy has begun to recover and signs of this recovery are beginning to emerge in the Valley, which will have a lower trajectory due to the nature of its regional economy. However, some sectors have shown resiliency during the recession. State and federal agencies and philanthropic partners are investing in the San Joaquin Valley in a concerted investment and capacity building effort to shift the future of the Valley from one of poverty and stagnation to one of prosperity and opportunity. These major efforts, most of which are being managed by OCED or in which it is a core partner, are intended to catalyze and accelerate the Valley's economic recovery and revitalization. The Valley is poised for a new stage of renewal.

THE NEXT STAGE FOR THE "NEW VALLEY"

As part of the Governor's Executive Order, in 2006 Partnership leaders prepared a Strategic Action Proposal (SAP), *The San Joaquin Valley, California's 21st Century Opportunity*. The SAP developed three overarching goals for the Valley: to develop a prosperous economy, create a quality environment, and achieve social equity. The Partnership implements the SAP through the "New Valley," with ten work groups facilitating the Valley's improvement in ten core inter-related areas, supported by OCED in its role as Secretariat for the Partnership in serving the region. OCED manages or supports several initiatives in this mission, including alignment of university resources with Valley initiatives and leveraging of resources such as state and federal funding.

In August 2011, OCED received an Economic Adjustment grant from the Economic Development Administration (EDA), U.S. Department of Commerce, for several activities, including the preparation of a regional industry cluster analysis. The grant recognizes the vital organizing, convening, and resource role that OCED plays in San Joaquin Valley economic development efforts, and the unique leadership role that the Partnership serves in elevating and advancing regional priorities, giving a voice to the

Valley, and fostering a culture of collaboration and innovation. The Plan is intended to be the implementation strategy for the next stage – the second five years – of the Partnership's "New Valley" initiative (2011-2016).

According to EDA:

"Regional Innovation Clusters (RICs) are a proven way to create jobs and grow the economy. They are geographic concentrations of firms and industries that do business with each other and have common needs for talent, technology, and infrastructure. This is a new framework for economic development, and investing in RICs is critical to our nation's future economic competitiveness. Whether the investment comes from the federal or state government, or the private sector, or – ideally – all of the above, those dollars would be best put to use if they serve a well-developed regional strategy that leverages core regional strengths." (http://www.eda.gov/AboutEDA/RIC/)

The success of regional clusters is well documented and has become the standard of practice across California, as well as national and international regions. The Valley has been a leader in cluster-based strategies, starting with *The Economic Future of the San Joaquin Valley* report in 2000, the Fresno Regional Jobs Initiative (RJI) in 2003-4, the California Regional Economies Project in 2004, and the *Central San Joaquin Valley Innovation Economy Agenda* in 2006. The practice of economic development in the Valley has evolved from a focus on industry targets to strategic clusters, led by county economic development organizations. Many of the Valley EDCs and counties are leading their economic strategies through a very proactive, analytically-driven cluster-based approach.

Building upon these and other efforts, the SAP identified five key regional clusters of opportunity for focused action: agribusiness, health and medical, manufacturing, renewable energy, and supply chain management and logistics. These clusters reflected shared priorities across the Valley and represented sectors where the region's comparative advantage was considered to be strong or emerging. The clusters have been a touchstone for the work of the New Valley Work Groups and partners, in particular for the economic development, education and workforce development partners who serve as champions for several of these Work Groups.

It is customary for cluster initiatives to periodically review their progress, adjust to changing conditions and opportunities, update the baseline economic data, and renew leadership and stakeholder. OCED has referenced that the clusters can help drive regional solutions to the Valley's sustainability and livability challenges, stimulate the creation of new businesses and jobs, and provide opportunities to raise the skills levels and standard of living for the Valley's workforce.

The major impetus for this project was the need to better understand the competitiveness position of the SAP clusters given the current economic climate and structural shifts. While an update on the five year progress of the RJI towards its job creation goals was prepared in 2009 it was not a full industry cluster analysis. Likewise there have been several county and valley-wide sector-specific analyses conducted over the past few years, but it has been many years since a comprehensive economic analysis has been conducted of innovation clusters in the Valley.

In addition, even with the economic recovery slowly beginning to take root in the Valley, several recent innovation indicators make the case for a concerted effort to reposition the Valley:

- *The 2012 California Green Innovation Index* shows venture capital investment in clean technology for California by region, with $14.5 billion invested in 2011; the Valley does not have enough investment to be included in the breakout.[4]
- According to the Cluster Mapping Project sponsored by EDA, the Fresno-Madera Economic Area had 1.91 patents per 10,000 employees in 2009, versus 6.96 for the U.S. The number of establishments in traded industries grew slightly less than the US (1.36% vs. 1.47%, ranking the area 84 out of 179). Patenting growth per year from 1998-2009 was 0.81% vs. 0.05% for the US (ranking 84 out of 179).[5]
- The Next 10 reports on the regional distribution of jobs in the core green economy shows that the Valley's rate of job growth has slipped from 55% (from 1995-2009) to 22% from 1995-2010 (January), even while some other regions such as Sacramento, the North Sacramento Valley, Orange County and San Diego improved.[6]

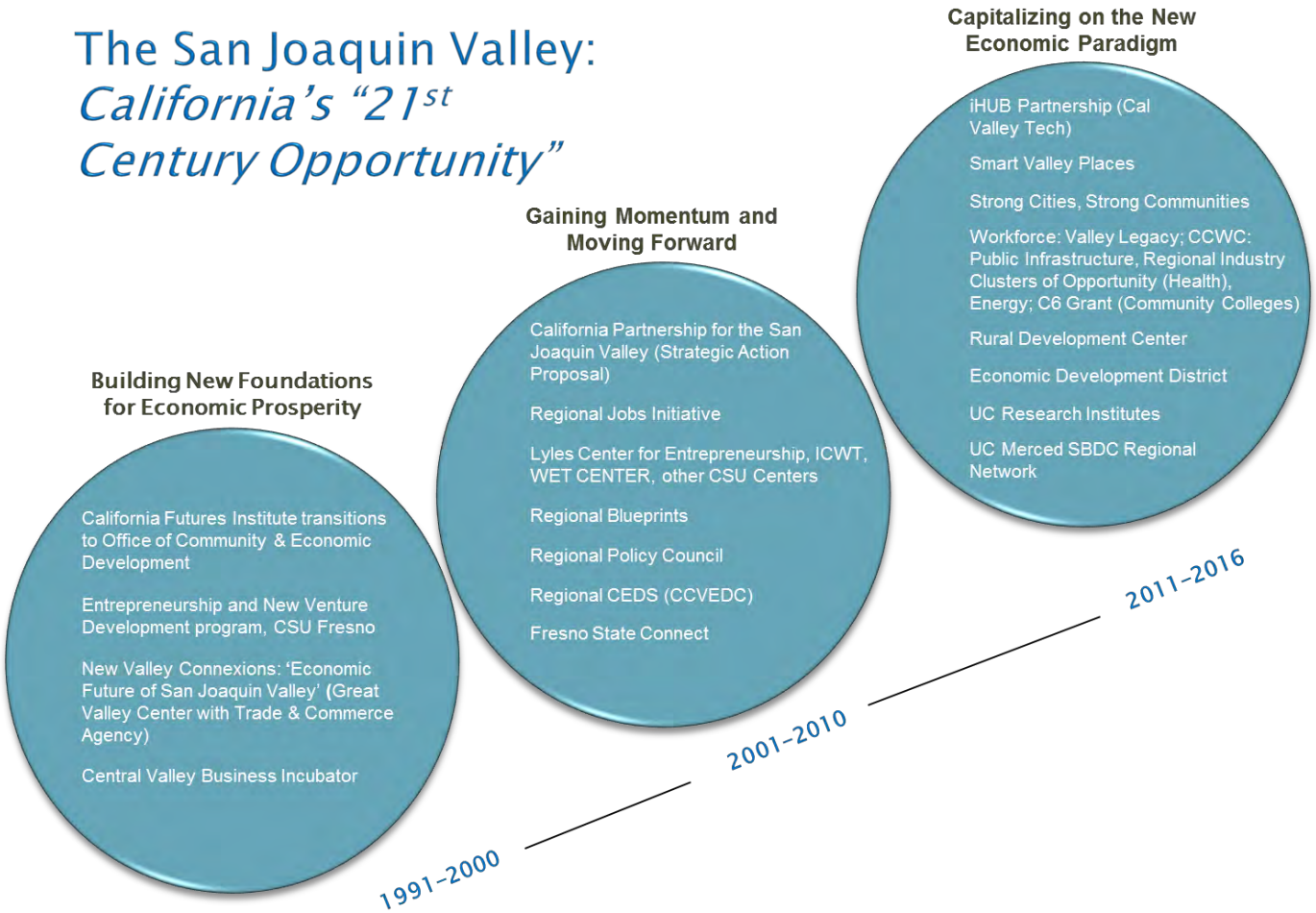
The California Central Valley Economic Development Corporation (CCVEDC – representing the county economic development organizations) also identified persistent outsourcing of revenues from the clusters as businesses purchase needed inputs/supplies of goods and services for their output (goods and services) from outside the Valley, or as products are exported outside of the Valley where additional "value" is added. This analysis documents estimated levels of this "leakage" in outsourcing of commodities and opportunities to "recapture the value chain." The report also documents the leakage of talent (workers), jobs (Valley jobs going to residents from outside of the Valley), and innovation/intellectual capital outside of the region – and opportunities to close these gaps through job creation, investing in education and workforce skills, and fostering an entrepreneurial climate that promoting increased innovation and access to capital.

Given these imperatives, the focus of this project was to:

- Identify key structural changes, emerging market opportunities, the "greening" of the economy, shifting policy priorities, and convergence across the clusters such as agriculture, energy and water;
- Inventory the many county and valley-wide cluster priorities and initiatives;
- Review various cluster methodologies and data sources to improve consistency;

[4] *2012 California Green Innovation Index*, Next 10, pp-15-17, 2012.
[5] Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School, sponsored by EDA, 2012.
[6] *Many Shades of Green, 2011*, Next 10, p. 13, and *Many Shades of Green, 2012*, Next 10, p. 21.

- Assess the capacity and effectiveness of existing cluster efforts, including leadership and resources;
- Incorporate new policy drivers such as AB 32 and state and federal partnerships that emphasize regional innovation clusters;
- Identify the high-growth innovation clusters and value chains which offer comparative advantage strengths across the Valley and sub-regionally, and that are responsive to business and community needs;
- Identify opportunities to align and leverage business and organizational capacity to support effective cluster implementation; and,
- Engage the participation of cluster champions, leaders and partners in the development and implementation of the Regional Cluster Action Plan.



1.2 PROJECT FRAMEWORK

This project is a cluster-based approach for synergistic regional economic strategy and Action Plan implementation. Clusters are both an analytical tool for understanding the regional economy and seeing the linkages between industries, and an organizing and engagement tool. The process allows firms to identify common competitiveness issues, develop a demand-driven action plan, and collaborate jointly to address those issues. Because the Valley has experience with clusters, there are many networks of partner organizations supporting sector-based strategies and initiatives. A strong need identified through this project is to better connect and leverage these networks and scale up models that are working on the local and sub-regional levels. This is an important role for the Partnership and OCED. More detail is provided in Chapter 5, in the recommendations for the Action Plan focus and organizational approach.

The Cluster Action Plan focuses on "capturing the value chain" across the Valley's core set of clusters for the next phase of the New Valley. The conceptual approach and analytic methodology used for the project are described in Chapter 4. This section provides an overview of the framework used as the basis for the development and implementation of the Action Plan. These are the Building Blocks of Comparative Advantage shown below. In 2005, state administration under the leadership of the Business, Transportation and Housing Agency, in partnership with the other state agencies, convened 17 regional Economic Vitality Conversations (12 regional and five statewide). The resulting vision for state economic prosperity produced a construct of "building blocks" to generate comparative economic advantage for California and its regions.

BUILDING BLOCKS OF ECONOMIC COMPARATIVE ADVANTAGE

Source: CA Business Transportation and Housing Agency
"Framework for California Prosperity," 2005

As shown in the Building Blocks, industry (economic) clusters are the drivers of economic growth, springing from the research excellence and knowledge base of educational institutions, business innovators, investors and entrepreneurs. Infrastructure and smart growth/sustainability are key pillars for the clusters, along with efficient governmental processes and regulatory environment. Effective governance within the regions and civic leadership are the catalysts for success across the clusters. In the Valley, this capacity is characterized by the Partnership, OCED/Fresno State, and the rich array of regional partner networks, business and cluster leaders, and state and federal agency partners, among others.

The Building Blocks provided the framework for the first Joaquin Valley Economic Summit, sponsored by the Partnership in late March 2012. More than 300 leaders came together to select a series of state and regional actions as a platform for work within the region and to elevate as the region's input for the first State Economic Summit, held in May 2012, convened by the California Stewardship Network and California Forward. Valley leaders selected the Agriculture Value Chain Cluster (described in Chapter 4.1) as the cluster of opportunity for the Summit. The Valley will convene its next regional economic summit in the Fall of 2013, leading to the next state economic summit in late 2013. The San Joaquin Valley Cluster Action Plan will help guide the selection of action priorities for the Valley's core clusters which will constitute the basis for the 2013 Summit.

1.3 REGIONAL CLUSTER PRIORITIES

The study process and findings (described in Chapter 2) validated that the five original New Valley clusters continue to be the shared priorities across the region, although they have been adapted or expanded upon through the value chain concept. Each cluster contains several "components," each with sets of industries that comprise the value chain. For example, the Agriculture Cluster includes production, processing and packaging, distribution and diverse support activities. The Health Cluster now incorporates dimensions of wellness. Two clusters have been added – water technology and public sector infrastructure, based on their current and emerging importance and potential for the Valley. Therefore, the Action Plan priority clusters are:

- Agriculture
- Energy
- Health and Wellness
- Logistics
- Manufacturing (which is connected to all of the clusters)
- Water Technology
- Public Sector Infrastructure (Construction)

An analysis of each cluster is presented in Chapter 4, including a reference to many of the initiatives and networks that are involved in these clusters. They are too numerous to list individually but they are listed illustratively as leaders and partners in the Action Plan implementation recommendations, and also in the list of partners at the beginning of the report. They include both core economic initiatives and those that provide core support foundations for the clusters (such as infrastructure and sustainability).

The next stage of Action Plan implementation will need to continue the outreach and engagement activities of the cluster planning process initiated by the Partnership and OCED. While the Partnership and OCED have many strong existing partnerships, including through the New Valley Work Groups, there are additional initiatives and networks active in the cluster areas, especially at the sub-regional level, that need to be engaged in the cluster work. There also are new roles for existing partners that need to be explored to take the clusters to the next level of productivity and beneficial outcomes.

As part of this outreach and engagement process, there are new cluster-related initiatives sponsored by state, federal and other partners that will benefit the region. They include the "Doing What Matters for Jobs and the Economy" initiative of the Chancellor's Office of the California Community Colleges, Workforce and Economic Development Division, and the California Financial Opportunities Roundtable (CalFor).

The Cluster Inventory Analysis presented in Chapter 2.3 and the consultation process with key partners identified the resource and capacity challenges of supporting cluster initiatives, especially across a wide geographic region and diverse but interconnected clusters. While increasing use of and access to information technologies can help to bridge this gap, there is still the "glue" of face to face interaction to establish the foundations of effective regional collaboration, including trust building, networking and information sharing. A clearly identified role for the Partnership and OCED is to help connect and convene these assets at a higher level in order to identify those shared regional priorities and opportunities that will be garnered most effectively from a regional collaborative strategy and voice.

The California Partnership for the San Joaquin Valley *Connect 2012 Annual Report* has a valuable discussion and overview of many of the regional partners and initiatives that will be an important part of the San Joaquin Valley Cluster Action Plan. Additional description of initiatives is available in cluster meeting presentation materials that will be posted on the Partnership website, and through Appendix C, Reference and Resource Materials. Other information generated through the cluster action planning process will be provided by ADE to OCED for use by the New Valley Work Groups/Cluster Action Teams.

CHAPTER 2
PLAN PROCESS AND METHODOLOGY

This chapter describes the planning process used to engage regional, local and other partners and stakeholders; conduct analyses; and develop the recommendations for the Cluster Action Plan. It includes an overview of the methodology used for the technical aspects of the analyses and presents the results of an inventory of cluster initiatives and priorities at the county and regional level. The inventory provided a base for validating the selection of the project's priority clusters for more detailed economic analysis, reviewing analytic findings, and assessing existing and potential implementation capacity.

2.1 PROJECT PLANNING PROCESS

The project planning process began in October 2011. The first activities were to conduct the inventory and assessment of existing cluster initiatives and priorities; identify partner network contacts and leads across the various systems and initiatives (economic development, education, workforce development, industry associations, and so forth); and conduct research to prepare the project's demographic and socio-economic overview and overview of the regional economy.

OCED's priority was to engage these partners and stakeholders proactively throughout the planning process - many of whom already are leads and/or partners for several of the Partnership's New Valley Work Groups - and identify and bring into the process new partners, as the foundation for development and implementation of the Cluster Action Plan. Starting with the California Central Valley EDC (CCVEDC), consultation began immediately with partner network leaders and representatives to discuss their cluster priorities, activities and capacity; gain their perspective on cluster drivers and challenges; learn about new initiatives and upcoming activities; and coordinate on cluster stakeholder meetings.

The consultation was framed to identify the desired role for the Partnership and OCED and the actions that would advance a regional industry cluster strategy, based on shared regional priorities intended to result in more overall opportunities for the Valley. This strategy in turn would be strengthened through regional collaboration and resource leveraging, and provide support for the partners in their on-the-ground implementation efforts. Core partners included the CCVEDC, the Central California Workforce Collaborative (CCWC), the Central Region Consortium (California Community Colleges), the C6 Project (Central California Community Colleges Committed to Change) and the Central Valley Business Incubator (CVBI). As the project proceeded, many additional partners were an integral part of the process.

The Cluster Inventory (see Section 2.3) validated that the Partnership's five core clusters, with some adjustments, were shared priorities across the Valley. ADE added two additional cluster areas – the Water Technology Cluster, which was the Valley's first cluster, and Public Sector Infrastructure, for which a workforce plan was being developed for CCWC. An analysis was conducted for each cluster except Infrastructure (see Section 2.2 for discussion of methodology).

Working closely writh OCED, ADE coordinated with concurrent cluster-related planning activities, which are integrated into the Cluster Action Plan. These included the C6 Project, a major new cluster-based education and workforce project funded by the U.S. Department of Labor, led by West Hills Community College District. Project cluster meetings provided a venue to assist the C6 project with its rollout through presentations on the project and information dissemination.

Another was the San Joaquin Valley Regional Economic Summit held in late March 2012, hosted by the Partnership, organized to provide recommended regional and state-level actions for a state economic summit (held in May, 2012). Valley leaders focused on one cluster – the Agriculture Value Chain – due to the size and importance of the cluster to the Valley and state economy. ADE participated in the Summit Planning Committee, provided additional cluster analysis information, and coordinated the session on workforce needs. The Summit resulted in recommendations across five areas: infrastructure, workforce needs, innovation, regulations and sustainability, and access to capital, that constitute the action plan for this cluster. The Partnership is coordinating the follow-up with designated champions in each of the action areas. These areas were used to help develop recommendations for the other clusters.

ADE participated as an advisor to the planning process for the Public Sector Infrastructure Regional Workforce Plan, prepared for CCWC by the Council on Adult and Experiential Learning (CAEL). This plan provides a basis for revitalizing the construction sector in the Valley. ADE also coordinated with the San Joaquin Valley Regional Planning Council and its consultants Cambridge Systematics (and team) preparing the San Joaquin Valley Interregional Goods Movement Plan.

Once the cluster analyses were completed, the ADE project team along with OCED organized four cluster meetings between May and June of 2012 and a wide range of convening partners to review cluster findings, learn about related initiatives, and highlight issues and recommendations for the Action Plan. The partners conducted additional outreach to their networks. Approximately 150 partner and stakeholder organizations and employers participated (see Appendix A for list of participants).

Three meetings were held for the Health and Wellness Cluster, due to the size of the cluster (the second largest after Agriculture) and high level of focus on healthcare issues, with many initiatives underway, especially related to education and workforce development. One cluster meeting was held combining the Manufacturing, Energy and Logistics clusters, given the intersection between these areas and the fact that manufacturing is a part of all the clusters (including Agriculture and Health and Wellness); the Water Technology Cluster, currently defined with manufacturing-related components, is also highly interconnected, especially with the Agriculture and Energy clusters.

The Health and Wellness Cluster meetings were hosted by and held May 24th at Fresno State, June 6th in Modesto at the Great Valley Center, and June 21st at the Weill Center, Bakersfield College. Additional convening partners included: CCVEDC, CCWC, C6, Building Healthy Communities South Kern, Central Valley Health Network, Clinica Sierra Vista, CSU Bakersfield, Employers' Training Resource, Career Services Center, Hospital Council of Northern and Central California, Kaiser Permanent Central California, Kern Community College District, Kern Economic Development Corporation, and Stanislaus Alliance/Worknet.

The Manufacturing, Energy and Logistics Cluster meeting was held June 11th at the San Joaquin Valley Air Pollution Control District, Fresno (host). Additional convening partners included: CCVEDC, CCWC, C6, Center for Applied Competitive Technologies, International Center for Water Technology, San Joaquin Valley Clean Energy Organization, San Joaquin Valley Regional Policy Council, the Water, Energy and Technology Center, and Valley REACON (Recycling, Energy, Air, Conservation).

In addition to cluster findings, the presentations included an overview of key regional initiatives and sub-regional projects, especially sector initiatives that are potential models for scaling to the regional level, and updates by convening partners and participants on projects, issues, opportunities and priorities. The materials for the meetings, including meeting summaries, will be available on the Partnership website.

The Water Technology Cluster convenes on a regular basis. The ADE team lead for this cluster has been involved with the cluster since its inception, and for this project, conducted interviews by phone and met with numerous cluster leaders; conducted research on recent innovations and trends; and participated in two cluster meetings, in late 2011 and on June 20th 2012, the latter to review results of ADE's cluster analysis and discuss recommendations for expanding the impact of the cluster.

As part of its outreach and information gathering process, the ADE project team also attended several conferences and meetings that addressed the clusters, and presented updates and/or findings to the Partnership Board, the CCVEDC, the CCWC, the RJI Implementation Team, Kings County Economic Development Corporation, and the President and Provost of Fresno State. This included a discussion of implementation next steps and interests in terms of roles and capacities.

ADE also conducted extensive research on issues and trends related to the project cluster areas; conditions and initiatives in the Valley; overall economic and workforce reports related to the California economy, including emerging trends in the green economy; cluster methodologies; national analyses which included the Valley from a comparative standpoint; and cluster innovation models. Appendix C contains a listing of references and resource documents.

The next section describes the analytic methods for conducting the cluster analyses. The discussion of each cluster in Chapter 4 provides additional information on cluster-specific analytic approaches and resources.

2.2 CLUSTER METHODOLOGY

The quantitative analysis of the clusters relied on several data sources and analytical models. ADE defined each cluster as a group of industries at the six-digit NAICS (North American Industrial Classification System) level of detail. NAICS is a system used by government and business to classify business establishments by type of economic activity. The definitions were based in part on past cluster analysis work in the region; a review of the relevant literature on emerging cluster components, including around the "green economy" but also for existing clusters that are evolving based on the

"value chain" concept; and discussions with cluster stakeholders, including economic development professional in each county who work with these clusters.

In order to refine the cluster definitions, ADE conducted selected input-output studies to determine the portion of supplier inputs needed by the core industries in each cluster. For example, this approach helped to define how much of the wholesale industry is engaged by the Agriculture Cluster in the region. In some cases, this analysis led to assigning portions of the NAICS industries to clusters rather than the whole employment amount.

The next step was an analysis of employment change for each cluster using the Census of Employment and Wages (CEW) obtained from IMPLAN, (Impact Analysis for PLANning), which provides a consistent data set of employment wages and establishments annually by county. Using this data, ADE calculated not only employment growth rates for each industry in each cluster, but also location quotients and industry shift-share rates using the State of California as the point of reference. The industries in each cluster were organized into groupings – key components – reflecting different types of activities within the cluster (such as manufacturing, wholesale and distribution, services, retail). This way, the performance within the cluster can be differentiated and growth areas better identified.

The last major step in the analysis was to use the IMPLAN3 Input-Output (I-O) model to calculate the trade flow data for each cluster for the region as a whole. Using the cluster NAICS definitions to create parallel industry aggregations in the I-O model, ADE estimated the dollar value of total output for each cluster as well as several other production and market factors. For example, the model can be used to estimate the production input requirements for each aggregated cluster. Using the regional purchase coefficients in the model, ADE estimated the portion of these inputs (commodities) that are acquired from within the region and the portion purchased (outsourced) outside of the region (leakage). ADE then evaluated the outsourced dollar amounts using the 2007 Economic Census to determine whether the leakage is sufficient to support full establishments in the supplier industries.

ADE also used the I-O model to evaluate the San Joaquin valley as a consumer region, calculating the amount of goods and services produced by the clusters that are actually needed by the population, businesses and institutions in the region. These calculations and related analysis of export trade flows for each cluster led to indicators regarding the destination of intermediate and final products for the clusters in the analysis.

A listing of the NAICS codes used to define each cluster is attached in Appendix B. More detailed county employment data for each cluster component may be found in Appendix D.

2.3 CLUSTER INVENTORY

This section of the Report documents the primary industry cluster targets and initiatives in the Valley. As noted in the Introduction to this report, the San Joaquin Valley has been a leader in cluster-based strategies for more than a decade. Therefore, one of the first activities of Industry Cluster Action Plan project was to identify and inventory the existing cluster initiatives in the Valley, including the RJI clusters, the Partnership clusters, and individual county clusters; key leaders, participants and resources; types of cluster-based activities; and implementation status of the clusters.

This inventory provided a core base for validating the selection of the project's priority clusters for more detailed economic analysis; engaging partners and stakeholders in review of the cluster analytic findings; and assessing existing and potential implementation capacity. This information also provided a foundation for developing the Industry Cluster Action Plan, including recommendations for the role of OCED, the Partnership and the New Valley Work Groups and their alignment with and support of local and regional priorities and capacities. Emerging cluster initiatives and activities also were incorporated into this inventory and subsequent planning and engagement activities of the project.

The economics of clusters are dynamic and ever-changing, as well as the resources and capacity present locally and regionally to engage businesses, partner organizations and stakeholders in developing, leading and supporting cluster initiatives. Cluster analyses, initiatives and activities require periodic updating, renewal and alignment of resources to reflect these important realities, which were a key impetus for this project.

The inventory was prepared based on the following activities by ADE and OCED:

- **Ongoing consultation with California Central Valley Economic Development Corporation (CCVEDC) and its members (county economic development organizations).** This process led off with participation in CCVEDC's November 2011 meeting to discuss the purpose of the inventory and to obtain information about local cluster networks or cluster targets; each EDC/agency was asked to review a draft matrix of industry targets or cluster networks prepared by ADE. As a starting point, ADE utilized each EDC's website to obtain information on targets and initiatives, as well as cluster reports and research to ascertain the most recent analyses and the analytic techniques and methodologies used to prepare the reports and select the targets. ADE subsequently followed up with each EDC to discuss cluster targets/initiatives, activities, research and data bases, capacity issues, and and planned changes. ADE continued to consult with CCVEDC and individual county EDC's throughout the project to refine the inventory, including most recently at the CCVEDC July 2012 meeting.
- **Ongoing coordination with OCED.** As noted, OCED provides leadership and staff support to several cluster efforts and partners, and has been in ongoing consultation with cluster leaders and partners about the status and capacity of existing and emerging cluster initiatives and next steps. The Partnership's 2010-2011 Annual Report was also a resource on the status of the Work

Group, as well as the website which contains quarterly updates on most of the Work Groups' implementation plans.

- **Research, and Interviews and Meetings.** ADE conducted several interviews with regional partnership organizations leading or supporting cluster initiatives, including representatives of Central California Workforce Collaborative (CCWC – the Workforce Investment Boards) and the Valley's Community Colleges (Central California Regional Consortium and the California Community Colleges Committed to Change – C6). ADE also conducted extensive research on local and regional cluster analyses, including county Comprehensive Economic Development Strategies (CEDS) and the Valley-wide CEDS prepared by ADE. ADE participated in several sector-specific meetings and conferences, especially related to the Health and Wellness Cluster. ADE also was a member of the CCWC Advisory Team working on the development of the Public Sector Infrastructure Strategy as a possible Valley-wide cluster initiative.

SUMMARY OF CURRENT CLUSTER ACTIVITIES

Table 2.3-1 identifies the clusters that have been selected by each County economic development organization as sectors that are competitive or have the potential to be successful in that county. The Table also identifies the key Valley-wide clusters. To recap, the Partnership's five core New Valley clusters were: agribusiness, including food processing, agricultural technology and ag-biotechnology; manufacturing; supply chain management and logistics; health and medical care; and renewable energy.

The key points of the Cluster Inventory can be summarized as follows:

- Every county has a set of target clusters which guide business retention, expansion and attraction activities; only a few support more formalized cluster initiatives or networks.
- The Partnership's New Valley clusters continue to be the most commonly shared cluster priorities across the region.
- Ongoing organizational support of cluster initiatives or networks is a challenge, especially given the impacts of the recession and local budget cuts.

All told, there are approximately fifteen clusters that are targets across the eight counties. The county Economic Development Corporations and county-led economic development agencies are the leads for business retention, expansion and attraction activities regarding these clusters. Fresno County has the most clusters (twelve). Almost every county includes all five of the five New Valley clusters as targeted clusters although there are some local variations within the cluster groups. For example, renewable/clean energy is a priority cluster for almost all of the counties but in Kern County the cluster also includes chemical energy and natural resources, such as oil. In San Joaquin County logistics includes air freight transportation and aircraft maintenance.

Several counties have other clusters of focus that could provide an opportunity for future attention across the Valley, including the water technology cluster (primarily centered in Fresno and Tulare Counties), renewables and recyclables which present an opportunity to expand the potential for manufacturing (San Joaquin County), and entrepreneurship (Stanislaus County).

Overall, the types of cluster initiatives vary significantly throughout the Valley, especially with regard to the degree of organizational support; networking of stakeholders and partners; and engagement of employers, especially as "cluster champions" within the context of a cluster strategy implementation plan. While every county has identified a set of target industries for the purpose of focusing business expansion and recruitment activities, only a few have the capacity to support on-going cluster initiatives or networks through staffing and other resources.

The most formally organized cluster efforts are in Fresno and Kern Counties. The Regional Jobs Initiative (RJI) has designated private and public sector cluster chairs, and cluster managers, the latter of which are provided by several partner organizations, including the Economic Development Corporation serving Fresno County, OCED, the City of Fresno, Workforce Connection and Fresno State. The RJI clusters are under review as some clusters have been more active than others due to capacity leadership and other issues. Kern County's clusters are managed by Kern Economic Development Corporation, in a partnership with Kern County and Employers Training Resource.

Most counties/EDCs have incorporated cluster analysis as a tool for economic development planning and as a means of selecting target industries, which also are driving education and workforce sector initiatives. Kern County has the most recently updated cluster strategy (2010). Some of the EDCs such as the San Joaquin Partnership have been been refining the targets identified in earlier cluster and target industry analyses to reflect changing market opportunities and to better focus efforts. The level and timing of cluster-related research also varies across the Valley, a challenge that this Project is intended to help address by providing updated, consistent cluster analyses and industry detail for each county.

In terms of a Valley-wide focus for ongoing cluster initiatives, the CCVEDC, which also serves as the Partnership's Economic Development Work Group, has the following cluster priorities in its current role in marketing and business attraction for the Valley: manufacturing, logistics, food processing, and renewable energy. The Partnership's New Valley regional clusters also have been used to catalyze state and federal investments in the region, especially for innovative approaches to workforce and economic development supporting the region's cluster priorities. One example is the Partnership's Valley Legacy project which received discretionary funding from the State to support economy recovery strategies at a series of demonstration sites throughout the Valley, including skills building in emerging areas of opportunity such as the green economy (completed earlier in 2012).

TABLE 2.3-1

INVENTORY OF EXISTING TARGETED INDUSTRY CLUSTERS BY COUNTY AND VALLEY-WIDE

COUNTY	Ag, Food Processing, Biotech	Clean Energy	Health Care/ Medical Equip.	Logistics, Distribu-tion	Manu-facturing	Water Tech	Construction	Info Tech	Software	Tourism, Arts & Culture[1]	Other
FRESNO	√	√	√	√	√	√	√	√	√	√	Public Sector
KERN	√	√[2]	√	√						√	Aerospace
KINGS	√	√	√	√	√					√	
MADERA	√		√	√	√					√	
MERCED	√	√	√	√	√						
SAN JOAQUIN	√	√	√	√[4]	√			√[3]			Manufacturing includes Renewables & Recyclables
STANISLAUS	√	√	√	√	√					√	Entrepreneurship
TULARE	√	√		√	√						

Source: California Central Valley EDC (CCVEDC), County Economic Development Organizations, Central California Workforce Collaborative (CCWC), ADE.

Valley-Wide Clusters:

- Manufacturing, Logistics, Food Processing, Renewable Energy (California Central Valley EDC – CCVEDC; C6 – Central California Community Colleges Committed to Change – C6).
- Energy, Recylables/Renewables (State Energy Sector Partnership Grant, Central California Workforce Collaborative - CCWC)
- Public Sector Infrastructure (CCWC)
- Health (Regional Industry Clusters of Opportunity – RICO, CCWC; C6)

Notes:

1. Arts and Culture and Tourism clusters are sometimes separate
2. Includes Chemical Energy, and Natural Resources
3. Includes Back Office Activities
4. Includes Air Freight Transportation and Aircraft Maintenance

Regional partners such as the CCWC, which serves as co-partner for the Partnership's Higher Education and Workforce Development Work Group, and the California Community Colleges, are leveraging cluster-focused planning and implementation resources for the region for systems change. Two major valley-wide cluster initiatives led by members of the CCWC that are engaging employers and a wide range of network partners are focused on health and public sector infrastructure. They include the Regional Industry Clusters of Opportunity project for the health cluster, managed by the Workforce Connection (Fresno Regional Workforce Investment Board) (for which the CCWC is seeking additional funding), and the Public Sector Infrastructure Strategy managed by the Workforce Investment Board of Tulare County.

Other recently-funded Valley-wide education and workforce sector projects are focusing on the agriculture, health, manufacturing, and renewable energy clusters, including the State Sector Energy Grant managed by the Stanislaus Workforce Alliance, and the California Community Colleges Committed to Change (C-6) project, a collaboration of several of the Valley's Community Colleges, led by the West Hills Community College District. These projects are building institutional capacity to operationalize cluster strategies and will be an important resource for the implementation of the Cluster Action Plan.

The cluster inventory documentation process highlighted the difficulty in sustaining cluster-based networking initiatives either at the county or the regional levels, primarily due to resource and capacity issues, also because cluster strategies are collaboration-based and it takes time, effort and trust to build cluster networks, especially across such a large and diverse region as the Valley. Participants in the Cluster Strategy Project planning process articulated that the Partnership has a vital role to play in helping to knit together and support the various cluster opportunities, partners and resources within the framework of shared regional cluster priorities.

OCED plays an important leadership and supporting role for implementation of several on-the-ground cluster activities, especially those of the RJI, as well as the overall management of the Partnership's New Valley Work Groups which, in addition to specific cluster-focused economic, workforce development and higher education activities, address cross-cutting issues that support the overall vitality of the Valley economy. Through the findings of the cluster inventory, partner engagement and consultation, cluster meetings and development of Cluster Action Plan, the Action Plan will provide recommendations for alignment of organizational capacity and resources, especially for OCED and the New Valley Work Groups to advance the Valley's regionally competitive advantage clusters and support local efforts.

Chapter 3 provides a demographic and socioeconomic overview and an overview of the regional economy of the Valley, including overall industry sector jobs trends, and cluster versus non-cluster job growth for the priority regional/local industry clusters. This analysis provides the context for the more in-depth analysis of the region's priority clusters in Chapter 4.

CHAPTER 3
REGIONAL OVERVIEW

The San Joaquin Valley was one of the state's fastest growing regions during the last decade and this growth is projected to continue in the coming decades. The dimensions and nature of this growth are shaping the landscape of challenge as well as opportunity for the Valley's future. The Valley's challenges have been well documented, and have catalyzed unprecedented regional collaboration in response, as exemplified by the mission and endeavors of the California Partnership for the San Joaquin Valley.

Reflecting the ongoing dynamics of change in the Valley and conditions as the Valley begins to emerge from the "Great Recession," this chapter recaps key trends and patterns across the Valley as context for the analysis of key comparative advantage clusters in Chapter 6, and recommendations for the Cluster Action Plan presented in Chapter 7. It includes the following sections:

- Overview of demographic/socioeconomic conditions and trends as reflected by key indices, including those tracked by the Partnership and the CCVEDC, and interregional workforce flows (commute patterns) based on estimates from the Local Employment Dynamics data. The commute patterns illustrate the "leakage" of San Joaquin Valley workers to jobs outside the region, and the workers that commute into the Valley from other regions for jobs located in the Valley.
- Overview of the regional economy from 2001 through 2011, including jobs in the Valley, "supersector" employment trends, and cluster performance compared to other sectors of the economy.

3.1 DEMOGRAPHIC/SOCIOECONOMIC OVERVIEW

In 2005, the Congressional Research Office prepared an analysis documenting the fact that the San Joaquin Valley receives significantly less Federal Direct Spending than the national or state average, even lower than comparable regions such as the Appalachian Regional Commission area, despite exhibiting many socioeconomic indicators of concern. Among those indicators were high poverty rates, lower median incomes, and high levels of immigrant workers with generally low education levels and limited English language skills.

With the formation of the California Partnership for the San Joaquin Valley, the level of state and federal attention to the Valley has increased since 2005. However, economic improvements, particularly in the face of the severe national recession, have been slow to materialize. As shown in Table 5.2-1, the Valley continues to suffer high unemployment rates compared to the state average and per capita and median household incomes are well below state levels.

Along with the Sacramento region, the San Joaquin Valley was the the state's fast growing region between 2000 and 2010, except for the Inland Empire, adding more than 700,000 new residents over the decade - a growth rate of more than 20 percent, compared to 14 percent for California. [7] Growing racial, ethnic and cultural diversity characterizes California and the Valley is leading the way. Most of the Valley's population increase was due to growing communities of color, particularly Latinos who in 2010 comprised 48.6 percent of the Valley's population, compared to 37.6 percent of California's population and 16.3 percent of the U.S. population.[8]

The Valley's population continued to grow between 2011 and 2012, reaching an estimated population of 4,025,476 in January, 2012, or 10.7 percent of California's population. All counties except for Kings County experienced growth. If the Valley were ranked as a state, it would be the country's 27th largest state (based on the 2010 U.S. Census). Population growth will continue to be an economic driver for the region. According to a new estimates prepared for the eight San Joaquin Valley Metropolitan Planning Agencies (MPOs), the region is projected to grow to more than 6 million people by 2040, increasing by more than 50 percent.[9] This will increase demand for "employment, production, distribution, and consumption of consumer products, and housing, and logistics and warehousing of consumer products"[10]

While unemployment rates have dropped in all counties since 2011, in May of 2012 they still ranged from 13.5 percent in Kern County - which has the strongest economy of the Valley's eight counties – to 17.3 percent in Merced County, compared to 10.4 percent for the State. More than 270,000 residents were unemployed. [11] The number of persons living in poverty was estimated at 19 percent in 2008, compared to 14.5 percent for California.[12] The region's poverty rates continue to be among the highest in the nation, and are present in both urban and rural areas. These conditions reflects lower levels of educational attainment and skills of the Valley's workforce compared to many other regions, especially when matched to the demands of an increasingly complex and technology-driven global economy and compounding the impacts of the recession, with the implosion of housing, construction and financial sectors hitting the Valley particularly hard.

[7] *2010 California Regional Progress Report,* California Deparment of Transportation and California Strategic Growth Council, p. 8.
[8] *Toward 2050 in California, A Roundtable Report on Economic Inclusion and Political Participation in the San Joaquin Valley,* Center for American Progress, Julie Ajinkya, March 2012, p. 3.
[9] *San Joaquin Valley Interregional Goods Movement Plan, Task 5, Commodity Growth,* Cambridge Systemactics, June 2012, p. 1-3
[10] *San Joaquin Valley Interregional Goods Movement Plan, Task 1. Existing Conditions Technical Memorandum,* Cambridge Systematics, January 2012, p. 3-1.
[11] EDD, Labor Market Information Division, Current Economic Statistics Group, June 2012, p. 12 (not seasonally adjusted).
[12] *2010 California Regional Progress Report*, p. 10.

TABLE 3.1-1

VALLEY DEMOGRAPHIC AND SOCIOECONOMIC INDICTATORS

2012	Fresno	Kern	Kings	Madera	Merced	San Joaquin	Stanislaus	Tulare	Region	California	% of State
Pop. Jan 2012 DOF	945,711	850,006	152,419	152,074	258,736	695,750	519,940	450,840	4,025,476	37,678,563	10.7%
Labor Force 2011Annual Ave.	442,100	382,000	61,000	66,400	110,200	297,600	236,600	208,100	1,804,000	18,384,900	9.8%
Unemployment Rate 2011 Annual Avg.	16.5	14.9	16.1	15.3	18.3	16.8	16.8	16.6	16.4	11.7	140%
Private Sector Jobs 2011 Annual Avg	214,200	171,500	21,100	21,500	40,000	149,100	118,100	74,300	809,800	11,661,800	6.9%
Manufacturing Jobs 2011 Annual Avg.	23,900	13,400	4,100	3,000	8,100	17,500	19,900	11,000	100,900	1,245,800	8.1%
Per Capita Income ($) 2011 CRS	$31,049	$30,041	$26,856	$26,326	$27,156	$31,467	$31,629	$28,058	$29,072	$42,907	67.75%
Median Household Income ($) Most current-2010	$45,221	$45,524	$44,609	$48,268	$42,449	$50,011	$48,044	$43,397	$45,940	$57,708	80%
K-12 Enrollment 2011-2012	195,980	175,627	29,328	30,525	55,035	137,161	105,455	99,115	828,226	6,217,883	13.3%
SAT Scores (Avg.)DOE 2010	1,412	1,439	1,369	1,424	1,383	1,355	1,495	1,397	1,409	1,513	93%
Taxable Sales ($ 000s) (2010) DOF	10,154,265	11,057,910	1,188,331	1,201,908	2,134,070	7,602,090	6,098,614	4,496,880	43,934,068	477,347,986	9.20%
Median Home Price ($) 2011 Annual Avg. CRA	$145,000	$125,000	$135,000	$130,000	$112,000	$157,000	$130,000	$124,500	$132,312	$258,275	51.2%

Source: California Department of Finance, DOE, US Bureau of Labor Statistics, edd.ca.gov updated 5-16-12 by California Central Valley EDC 661-366-0756

In spite of lower levels of average median income in the Valley than in the state as a whole, over the last decade median household income grew throughout the Valley, increasing by over 30 percent, generally consistent with statewide trends. According to the *San Joaquin Valley Interregional Goods Movement Plan*, they are projected to nearly double by 2040. "Continued increases in household income will increase demand for consumer products, food, waste and other commodities exported from and imported to the Valley."[13] Combined with population and labor force growth, the Report also noted that "these trends will create pressure on the transportation system, as well as contribute to increasing congestion, emissions, and air quality concerns."

Measures of personal, community, and environmental health and well-being in the Valley related to these and other trends and conditions, including lack of access to clean air and water, healthy foods, and recreation and health services for many communities, are well documented. For example, residents in the San Joaquin Valley have less access to primary health care, and have higher levels of diagnosed asthma and pollution-related hospitalizations and higher percentages of overweight and obese population than the state as a whole. (See the *California Partnership for the San Joaquin Valley 2010-2011 Report* and the *2010 California Regional Progress Report*.) Research by the Central Valley Health Policy Institute, the UCSF-Fresno School of Medicine, the Center for Race, Poverty and the Environment, the, Center for Regional Change (U.C. Davis) and others have also documented the disparities in health outcomes for within the Valley, especially for communities of color.

While highly challenging, the Partnership and many leadership, business and community partners throughout the Valley are endeavoring to address these trends and conditions through innovative and inclusive regional collaboration initiatives across many inter-related areas. As will be described in the Section 4 of the report on Cluster Findings, these circumstances also present significant economic and job creation opportunities through meeting these challenges by strategies and actions to advance the Valley's key competitive advantage clusters. Examples include increasing access to healthy foods by expanding regional and local food systems (Agriculture Cluster); expanding wellness and prevention activities and services (Health and Wellness Cluster); and improving the sustainability and quality of water resources (Water Technology Cluster).

WORKFORCE COMMUTE PATTERNS

According to the California Employment Development Department, the Valley had approximately 1.2 million jobs in 2011 and 1.5 millon employed workers (whether their jobs are in or outside of the Valley). The new Local Employment Dynamics (LED) Partnership between the states, the U.S. Bureau of Labor Statistics and the U.S. Census Bureau integrates several sources of information on jobs, workers and local economics. One data set relates to labor flows (commute patterns) for the 2010 workforce, depicted in Tables 3.1-2 and 3.1-3. From a workforce perspective, the San Joaquin Valley economy has a

[13] *San Joaquin Valley Interregional Goods Movement Plan*, p. 2-1.

very mobile workforce of both in and out-commuters. Viewing available LED data for a substantial sample of the jobs and workers, it is clear that the Valley is exporting labor to adjacent metropolitan areas – Sacramento to the north, the San Francisco Bay Area to the west and the Los Angeles metropolitan area to the south.

This has been a significant trend over the past two decades based on both the Valley's housing affordability compared to the Bay Area and other metropolitan areas, and the lack of adequate jobs in the Valley for the growing workforce. Table 3.1-2 shows the residential location of workers who held approximately 1.2 million jobs in the San Joaquin Valley in 2010.

As an example starting with Fresno County at the upper left of the table, 234,356 workers who lived in Fresno County also worked in the County. Further down the column, 11,527 Fresno jobs were occupied by workers coming from the north in Madera County and 13,659 by commuters from the south in Tulare County. Below the eight San Joaquin counties, the major areas of workers commuting in for San Joaquin Valley for jobs starts with the Central Coast. Workers commuting in from the Bay Area and from Los Angeles were about equally split at about 13,000 and 12,000, respectively.

In Kern County, the commute in by workers in the south from the Greater Los Angeles area was much larger, at 29,155 workers. Fresno and Kern also had substantial number of workers commuting in from the Central Coast, at 5,078 and 4,557, respectively. For counties to the north end of the Valley, such as San Joaquin and Stanislaus, the in-commute was predominantly from the Bay Area, with Sacramento a close second. All told, an estimated 18 percent of the jobs in the Valley (almost 216,000 jobs) were held by workers living outside the Valley.

TABLE 3.1-2

IN-COMMUTE CENTRAL VALLEY JOBS - LOCATION OF WORKER RESIDENCE

Place of Residence	Jobs Location								
	Fresno	Kern	Kings	Madera	Merced	San Joaquin	Stanislaus	Tulare	Total
Fresno	234,356	4,015	5,229	8,307	2,724	2,411	3,338	12,779	273,159
Kern	4,626	185,787	827	282	383	292	593	6,279	199,069
Kings	6,719	1,960	21,755	206	193	231	368	4,168	35,600
Madera	11,527	373	388	20,143	1,848	720	922	692	36,613
Merced	4,067	500	184	1,787	39,489	2,670	11,621	683	61,001
San Joaquin	2,502	436	243	307	974	118,599	12,483	737	136,281
Stanislaus	3,129	699	232	545	7,041	15,520	100,777	871	128,814
Tulare	13,659	8,802	5,252	600	534	700	1,081	92,705	123,333
Central Coast	5,078	4,557	702	660	1,087	2,262	2,330	1,895	18,571
Greater Los Angeles	12,048	29,155	1,499	1,082	1,855	6,554	2,791	9,587	64,571
Sacramento MSA	5,864	1,161	312	517	1,298	17,280	5,480	1,375	33,287
SF Bay Area	13,092	3,237	912	1,244	3,113	23,268	12,441	3,627	60,934
Other	7,901	6,528	798	1,553	2,591	9,591	6,154	3,320	38,436
Total	324,568	247,210	38,333	37,233	63,130	200,098	160,379	138,718	1,209,669

Source: Local Employment Dynamics, U.S. Census Bureau, Applied Development Economics

Table 3.1-3 shows the commute pattern for the LED data's estimated 1.3 million workers in the San Joaquin Valley in 2010. Based on the sampling process, the LED estimate is less than EDD's data on the number of employed workers residing in the Valley but is illustrative of the commute patterns. Twenty-four percent of employed persons in the Valley commuted to jobs outside the region (almost 322,000 workers). In Fresno County, the out-commute to the Bay Area and Los Angeles was larger than the in-commute from those areas. This was true for nearly all the commute patterns described above. The San Joaquin Valley is a net exporter of labor, due to the lack of well-paying jobs for the size of its labor force. The net jobs gap based on the estimated LED data was at least eight percent in 2010 (106,000 jobs) and was likely larger.

TABLE 3.1-3

OUT-COMMUTE CENTRAL VALLEY LABOR FORCE - LOCATION OF JOBS

Place of Job	Labor Force								
	Fresno	Kern	Kings	Madera	Merced	San Joaquin	Stanislaus	Tulare	Total
Fresno	234,356	4,626	6,719	11,527	4,067	2,502	3,129	13,659	280,585
Kern	4,015	185,787	1,960	373	500	436	699	8,802	202,572
Kings	5,229	827	21,755	388	184	243	232	5,252	34,110
Madera	8,307	282	206	20,143	1,787	307	545	600	32,177
Merced	2,724	383	193	1,848	39,489	974	7,041	534	53,186
San Joaquin	2,411	292	231	720	2,670	118,599	15,520	700	141,143
Stanislaus	3,338	593	368	922	11,621	12,483	100,777	1,081	131,183
Tulare	12,779	6,279	4,168	692	683	737	871	92,705	118,914
Central Coast	5,574	4,665	955	1,002	2,763	2,986	2,495	2,755	23,195
Greater Los Angeles	16,969	51,192	3,929	1,342	2,333	8,407	4,276	10,875	99,323
Sacramento MSA	6,917	1,701	895	1,173	2,468	17,582	7,247	2,513	40,496
SF Bay Area	16,040	2,924	1,351	3,049	10,505	61,106	30,342	3,812	129,129
Other	5,215	6,735	799	1,342	1,851	6,846	4,465	2,333	29,586
Total	323,874	266,286	43,529	44,521	80,921	233,208	177,639	145,621	1,315,599

Source: Local Employment Dynamics, U.S. Census Bureau, Applied Development Economics

3.2 OVERVIEW OF REGIONAL ECONOMY 2001-2011

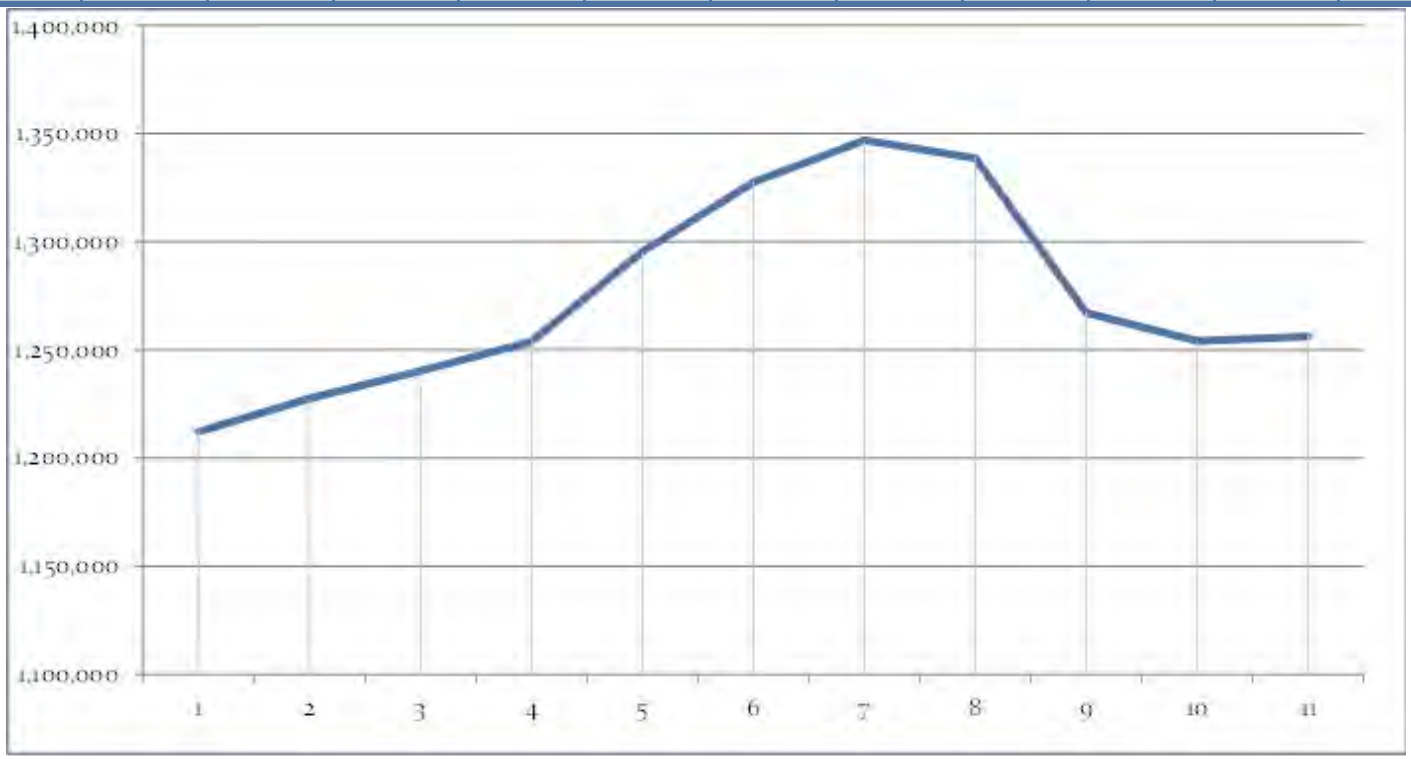
The San Joaquin Valley began the decade in 2001 with about 1.2 million jobs in both the public and private sectors, excluding self-employment. As shown in Figure 3.2-1, employment grew steadily but slowly until 2005 when the region gained more than 40,000 jobs in the one year, compared to a growth of 13,500 in 2004. Job growth continued at an accelerated rate through 2007 when it reached a peak of more than 1.35 million jobs. During the recession between 2008 and 2010, the Valley lost 92,000 jobs and the total job level fell to 2004 levels. In 2011, the Valley added 1,100 jobs overall to begin what is anticipated to be a slow recovery. This pattern is unlike some other regions such as the Bay Area which have posted strong job gains over the past year and are leading the State's economic recovery.[14]

[14] "July Jobs Report," Steve Levy, Center for the Continuing Study of the California Economy, August 17, 2012.

FIGURE 3.2-1

SAN JOAQUIN VALLEY EMPLOYMENT TRENDS, 2001- 2011

San Joaquin Valley Region	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total All Industries	1,212,200	1,227,600	1,240,300	1,253,800	1,295,500	1,327,500	1,346,900	1,338,700	1,267,100	1,254,100	1,256,200



Source: California Employment Development Department, Quarterly Census of Employment and Wages (CEW)

All told, net job growth over the last decade was approximately 44,000 jobs, for a 3.6 percent rate of growth. Non-farm private sector jobs increased by 25,700 over this period, while public sector jobs increased by 11,700; the balance of job growth (6,700 jobs) was in farm industries which are counted separately. From 2010 to 2011, private sector jobs (farm and non-farm) both increased while public sector jobs decreased, a trend that has occurred since 2008, primarily in local government jobs. Over this period, more than 13,000 public sector jobs have been lost, reflecting the severity of the state and local budget crises. As noted in Section 3.1, there are more employed workers residing in the Valley than jobs available, leading to significant levels of out-commuting.

Figure 3.2-2 illustrates how the major sectors in the economy performed during this period (detailed data may be found in Table 3.3-1). They are considered "Supersectors" as they include groupings of industry sectors. For example, "Trade, Transportation and Utilities" includes Retail Trade, Wholesale Trade, Transportation and Warehousing, and Utilities. Professional and Businesses Services includes Professional, Scientific and Technical Services, Administrative Services (including Waste Management and Remediation Services), and Management of Companies and Enterprises.

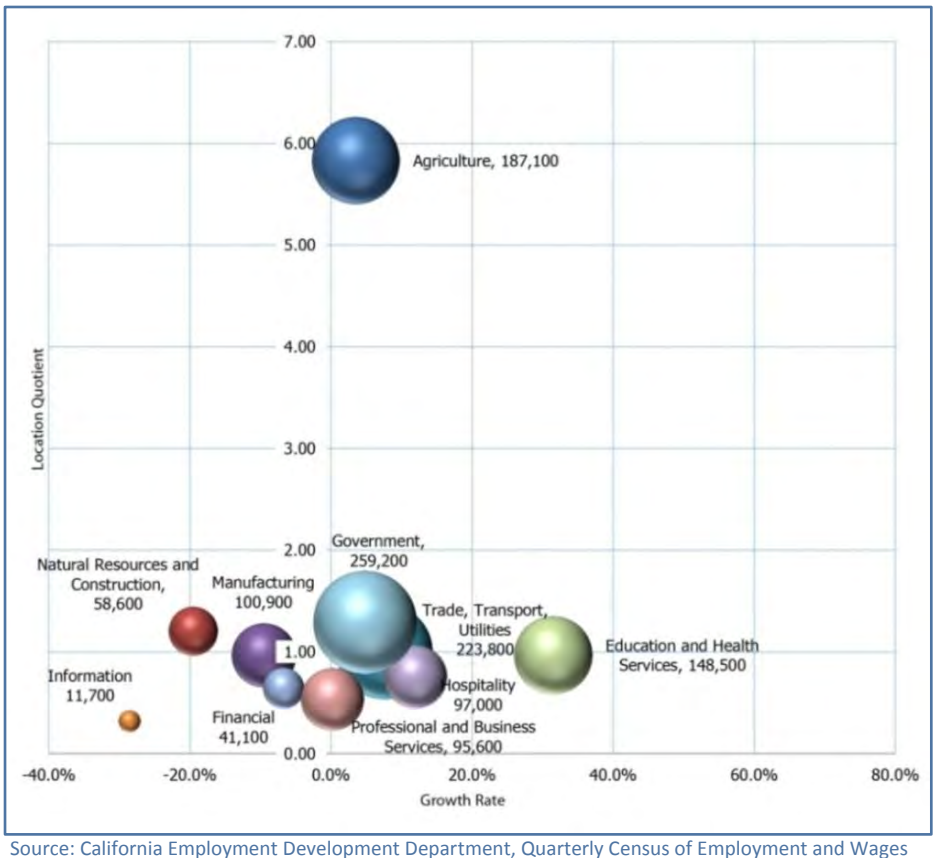
The figure uses “bubbles” to show:

- The size of the sector by number of jobs - the bigger the bubble the larger the sector
- The growth of the sector – the vertical axis at zero (O) percent is the starting point; a bubble to the left of this axis displays negative growth or less jobs, while a bubble to the right of the axis displays positive growth during 2001-2011 period
- The concentration of the cluster or Location Quotient – the Location Quotient (LQ) is a measure calculated as a ratio that regional economists use as a way to compare industrial activity levels across different areas. In this case, the LQ compares the concentration of employment in the Valley to the state, in order to identify specialization in the regional economy. The horizontal axis at 1.0 (100 percent) represents parity with state levels. Above 1.0 represents the increased degree of specialization in the Valley. It also helps to identify the export orientation of an industry, emerging export industries that could bring more money into the region, or industries facing decline that could erode the region’s economic base (sources: U.S. Bureau of Labor Statistics, EMSI – Economic Modeling Specialists Int.).

Not surprisingly, the Agriculture sector, at the top of the chart, is six times more concentrated in the San Joaquin Valley than it is statewide, although it had little net growth from 2001 to 2011. Agriculture actually entered the past decade on a down note, dropping from 202,400 jobs in 2000 to 172,100 in 2004. From there it began to grow again and reached 191,700 in 2008. It had only one down year in the recession, losing 11,300 jobs in 2009, but then has added jobs again in both 2010 and 2011. The performance of the Agriculture sector has been very strong from an economic standpoint, especially in terms of exports. Employment is affected by technology, immigration and other issues. The dynamics within the components of the sector are discussed in greater detail in Chapter 4.1 Agriculture Cluster.

FIGURE 3.2-2

SAN JOAQUIN VALLEY EMPLOYMENT TRENDS BY SUPERSECTOR, 2001-2011



Source: California Employment Development Department, Quarterly Census of Employment and Wages

Most of the other sectors were close or slightly below the state levels of employment concentration. The sectors which are comparable to state levels including trade, goods movement and logistics, food processing (manufacturing), energy, education and health and education services. Government employment was slightly more concentrated.

The sectors that had the most rapid net growth during the 2001-2011 period were Education and Health Services, with health as the largest component; Hospitality; and Trade, Transport and Utilities. Most of these sectors had a pattern similar to the overall job base, with growth through 2007 and then a leveling off with a small job gain between 2010 and 2011.

Trade, Transportation, and Utilities was the second fastest growing supersector. While retail trade comprised almost 60 percent of the sector in 2011, the fastest rates of growth were in wholesale trade and transportation, warehousing and utilities. This is due to the fact that more than 44 percent of jobs in the Valley are associated with goods-movement dependent industries. In addition to transportation and utilities, and wholesale and retail trade, these industries include agriculture, manufacturing (especially food manufacturing and processing), mining and construction.[15]

[15] San Joaquin Valley Interregional Goods Movement Plan, Task 1: Existing Conditions Assessment Technical

Leisure and Hospitality was the next fastest growing sector, followed by Professional and Business Services sector. Additional employment data detail from the IMPLAN analysis shows that within this latter sector, Professional, Scientific and Technical Services represented 36 percent of the sector's employment in 2011 and was the fastest growing subsector, growing approximately 30 percent over the decade. This may reflect an increase in the diversification of the regional economy and the ability to provide more of these types of services within the Valley than in the past.

Government, which is the single largest employment sector, continued to lose jobs between 2010 and 2011 but still ended up at a job level similar to where it was in 2006. Manufacturing, consistent with national trends, had an overall decline but there has been growth within some subsectors which is discussed in Chapter 4 regarding the various clusters. Natural Resources and Construction, of which construction was more than 75 percent of the cluster in 2011, lost 40,000 jobs between peak employment in 2006, and 2011. Losses in construction and financial services were tied to the implosion of the housing market and financial market crises.

SAN JOAQUIN VALLEY'S CLUSTER-BASED ECONOMY

Industry clusters provide a more functional and comprehensive way of viewing the regional economy. The main industry clusters in the San Joaquin Valley are depicted conceptually in Figure 3.2-3 and are described in detail in the next Chapter 4 of the report. Unlike Figure 3.2-2 above, this conceptual portrait of the economy conveys the relative size of the clusters in 2011 and their interrelationships but does not indicate growth or change dynamics. From a functional standpoint, the clusters in the upper part of the chart are generally the export industries that draw income and wealth into the regional economy, which in turn supports the local serving sectors shown underneath the cluster, including retail, services and local education. All of these industry clusters in turn are supported by the economic foundations including infrastructure, workforce, capital, the regulatory framework, research universities, quality environment, vibrant communities and all the factors that contribute to the region's quality of life.

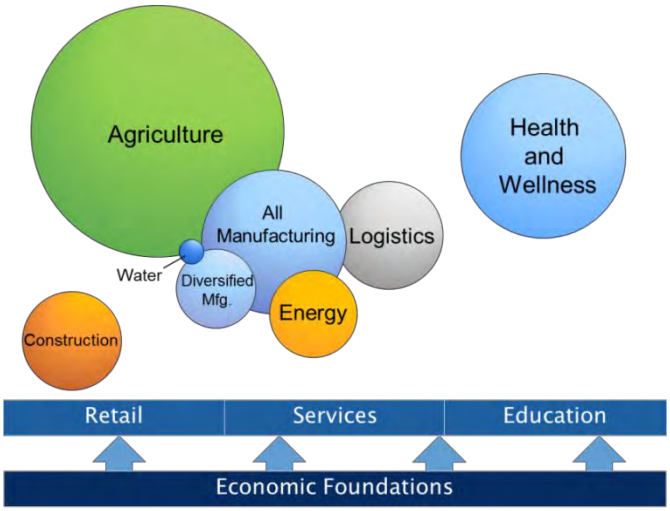
Memorandum, Cambridge Systematics, Inc., January 2012, pp. 4-4 – 4-5.

TABLE 3.2-1

SAN JOAQUIN VALLEY EMPLOYMENT TRENDS, 2001- 2011

Industrial Supersectors	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total Farm	180,900	176,500	178,300	172,100	180,700	182,800	186,900	191,700	180,400	184,500	187,100
Mining, Logging, and Construction	72,900	73,900	78,700	85,200	94,100	98,400	89,100	77,500	60,500	56,200	58,600
Manufacturing	111,600	110,300	112,300	113,100	112,900	113,200	115,100	114,200	105,400	101,700	100,900
Trade, Transport & Utilities	208,200	212,300	216,300	219,500	227,700	235,000	239,600	234,400	221,400	221,100	223,800
Information	16,400	15,800	15,300	16,100	15,500	15,100	15,100	15,500	13,500	12,300	11,700
Financial Activities	44,100	45,300	46,200	46,200	47,700	49,200	48,800	47,300	44,200	41,800	41,100
Professional & Business Services	95,500	95,400	94,900	97,900	101,500	106,100	107,100	105,500	97,300	95,000	95,600
Educational & Health Services	113,000	118,200	122,500	124,800	128,000	131,500	138,100	142,400	143,200	145,600	148,500
Leisure & Hospitality	86,700	88,500	89,000	91,900	95,900	100,200	102,400	101,900	97,900	96,600	97,000
Other Services	36,100	37,200	36,300	36,100	36,500	36,200	37,500	36,800	34,800	33,900	33,100
Government	247,500	254,100	251,000	251,200	255,600	260,300	267,500	272,400	268,800	265,500	259,200
Total All Industries	**1,212,900**	**1,227,500**	**1,240,800**	**1,254,100**	**1,296,100**	**1,328,000**	**1,347,200**	**1,339,600**	**1,267,400**	**1,254,200**	1,256,600

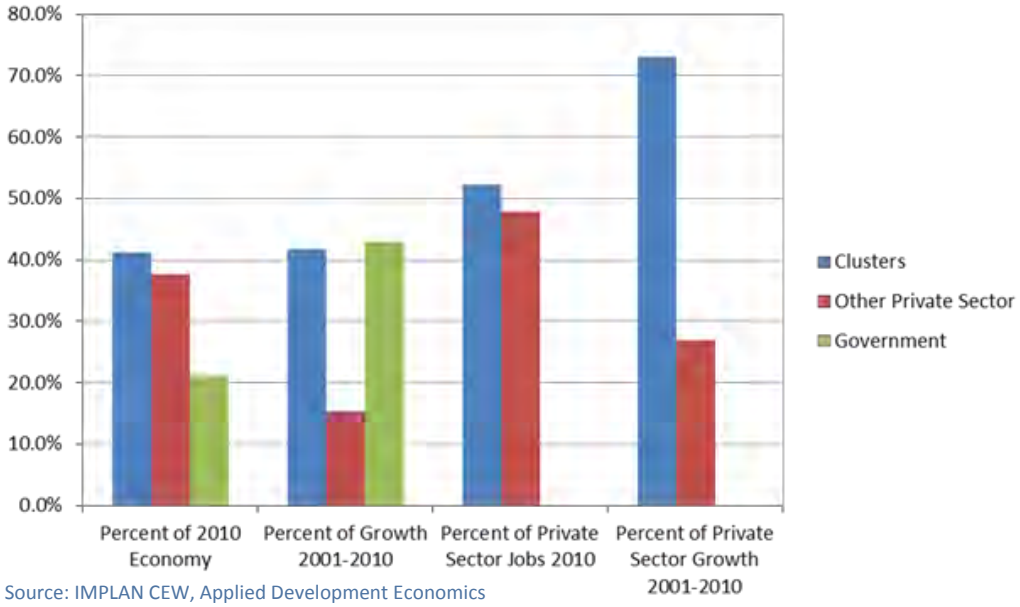
FIGURE 3.2-3
SAN JOAQUIN VALLEY REGIONAL ECONOMY, 2010



Source: IMPLAN CEW, Applied Development Economics

Clusters are important because they are the economic drivers that propel the economy forward and are the source of innovation and regional competitiveness needed to enhance economic prosperity. As shown in Figure 3.2-4, the six major clusters in the regional economy (combining manufacturing and excluding construction) constituted 41 percent of the jobs in the region and also supplied a similar amount of job growth during the 2001-2010 period.[16]

FIGURE 3.2-4
CLUSTER VS NON-CLUSTER EMPLOYMENT GROWTH, 2001-2010



Source: IMPLAN CEW, Applied Development Economics

[16] Detailed data needed to analyze the clusters is not yet available for 2011. Also, construction is excluded from these figures due to the circumstances of the recession that decimated this industry in the past several years.

In contrast, the other industry sectors shown in the middle of Figure 3.2-3 comprise about 38 percent of the jobs in 2011 but only supported 15 percent of the job growth during the decade. Since government was actually a growth sector in the Valley during this period, the figures are even more pronounced if we look just at the private sector economy. In that view, shown in the right hand side of Figure 3.2-4, the clusters represented 52 percent of the employment but produced 73 percent of the private sector job growth.

Table 3.2-2 shows the detailed growth and decline within the various components of the clusters. Among the clusters, Health and Wellness provided most of the job growth followed by Agriculture and then Logistics. Manufacturing, Water Technology, and Energy all showed net cluster job losses, although energy-related research was a growth area in the Valley during the last decade. Manufacturing has components within all the other clusters, with the balance being "diversified manufacturing." As noted, there has been growth in food processing, a subcomponent of overall manufacturing.

TABLE 3.2-2

CLUSTER EMPLOYMENT GROWTH COMPARED TO NON-CLUSTER GROWTH, 2001-2010

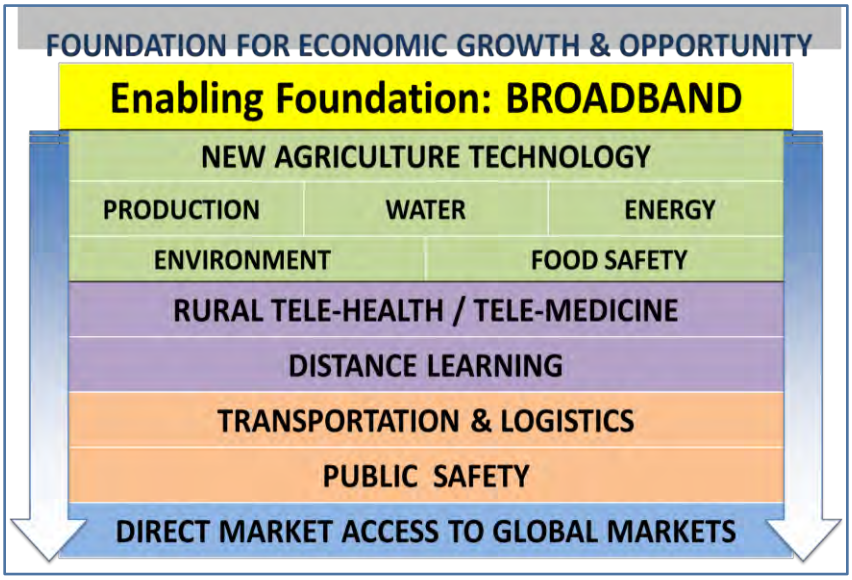
Cluster Components and Other Economic Sectors	Regional Employment--2001	Regional Employment--2010	Change in Regional Employment 2001 to 2010
Agriculture Cluster Total	280,905	289,014	8,109
Support	116,076	119,394	3,318
Production	87,532	81,795	-5,737
Processing and Packaging	57,499	62,579	5,080
Distribution	19,798	25,246	5,448
Health and Wellness Cluster Total	105,497	128,178	22,681
Services Delivery	93,477	114,585	21,108
Medical Device Manufacturing	1,675	1,269	-406
Pharmaceutical	127	311	184
Supplies and Support Services	1,347	2,434	1,087
Wellness and Fitness	8,871	9,579	708
Logistics	28,803	31,429	-12,474
Diversified Manufacturing	43,903	29,503	-14,400
All Manufacturing	111,786	101,382	-10,404
Water Technology	3,651	2,668	-983
Energy Cluster Total	35,823	33,353	-2,470
Energy Core	33,837	30,846	-2,991
Energy Related - Services	82	78	-4
Energy Related - Research	1,904	2,429	525
All Clusters Subtotal	498,582	516,035	17,453
Other Private Sector	466,118	472,565	6,447
Government	247,500	265,500	18,000
Total Employment	**1,212,200**	**1,254,100**	**41,900**

Source: ADE

BROADBAND: THE ENABLING INFRASTRUCTURE FOUNDATION

The previous section referenced the economic foundations that support all of the Valley's clusters. The definition of 21st century infrastructure includes broadband as a critical platform for regional growth and competitiveness. USDA Rural Development, California is one of the lead federal partners for the Strong Cities, Strong Communities "SC2" Pilot Project for Fresno. The federal project team works with local government, the private sector and other institutions such as the Partnership and OCED to leverage federal resources and encourage economic growth and community development, drawing upon regional economic underpinnings. This includes advanced communications services supported by broadband infrastructure and deployment.

The Valley has many unserved and underserved areas in terms of broadband infrastructure, especially in rural areas, and lags in access to and adoption of broadband technologies (digital literacy). OCED received funding from the California Public Utilities Commission to develop and implement a regional broadband strategy to address these gaps. This effort is led by OCED through the San Joaquin Valley Regional Broadband Consortium, which serves as the Partnership's Advanced Communications Services Work Group. USDA Rural Development, California is collaborating with the Consortium and the California Emerging Technology Fund on the strategy. Special Projects Lead Robert Tse provided the Partnership with an illustration of how broadband is the enabling foundation for both the clusters and the cluster foundations. Widespread broadband infrastructure and deployment will enable the adoption and use of innovative technologies for new Ag Technology, as shown below, for production, food safety, sustainable use of energy and water resources, and reduced impact on the environment. It will enable innovation in other clusters such as Health and Wellness and Logistics, and support improved access to education and other services, direct market access to global markets, and improved public safety.



Source: Robert Tse, USDA Rural Development, California, Special Projects Lead

CHAPTER 4

KEY CLUSTER AND OVERALL CLUSTER LEAKAGE FINDINGS

Chapter 4 provides a detailed analysis of the six Regional Industry Clusters of innovation summarized above in Table 3.2-2:

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

Each section includes:

- The definition of the cluster (as grouped by NAICS codes), and subcomponents for most of the clusters.
- Number of jobs (size of the cluster), rate of employment growth, and concentration compared to the state (location quotient), and geographic concentration by County.
- Trade flow information which describes the output for each cluster (commodity value), supplier purchases/inputs required to support the output for each cluster (business to business), and total regional demand from consumers (households, governments, non-cluster businesses).
- "Leakage" outside the region of supplier purchases/production inputs required for cluster output. This leakage represents an important economic development opportunity for these leakage gaps to be filled through retention, expansion and start-ups of local firms or attraction of new firms. ADE has identified the commodity areas that offer potential priority targets, based on further analysis.
- Aggregation of supplier purchases/production inputs across the clusters which provides additional economic development potential, when brought to higher levels of scale.

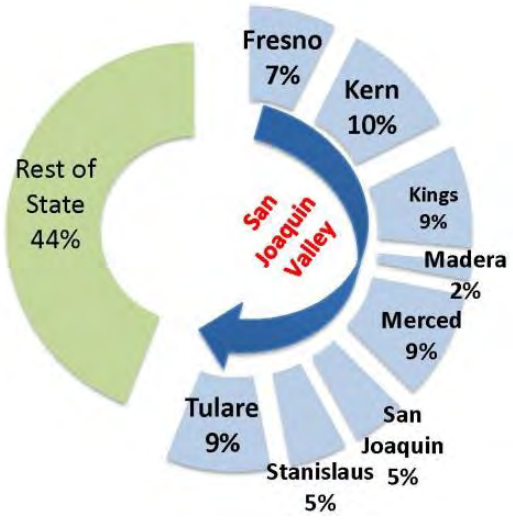
There is also discussion of the potential for public sector infrastructure investments to support a Valley-wide construction cluster, based on the economic and workforce analysis and regional workforce strategy prepared in 2011-2012 on behalf of the Central California Workforce Collaborative (CCWC).

4.1 AGRICULTURE CLUSTER

Agriculture is the heart of the economy in the San Joaquin Valley and a major contributor to the California economy, including through the rich diversity of its products, continuing innovation, and the strengths of the Valley's global exports. According to an analysis by the Central California Region Center of Excellence (California Community Colleges), the statewide economic impact of the agriculture "value chain" (discussed in detail below) - calculated on both employment and industry output - reached more than $300 billion in 2008.[17] California's agricultural industry leads the United States in both production and exports. In 2010, California had an agricultural farmgate value of more than $37.5 billion, and exports valued at $12.8 billion, 14 percent of U.S. total agricultural exports.[18]

Recently published research provided by USDA Rural Development California using data from the National Agricultural Statistics Service (NASS) shows the San Joaquin Valley dominates California crop production, with Fresno County leading the way. The Valley produced 56 percent of all crops grown in California in 2010, including 56 percent of field crops, 61 percent of state fruit and nut production, and 87 percent of livestock products (see Figure 4.1-1). [19] The Centers of Excellence estimated in another report that the Valley also garnered 28.7 percent of food processing employment in the state in 2011, highest among all the state's regions.[20]

FIGURE 4.1-1
SAN JOAQUIN VALLEY SHARE OF CALIFORNIA CROP PRODUCTION, 2010



Source: USDA, National Agricultural StatisticService.

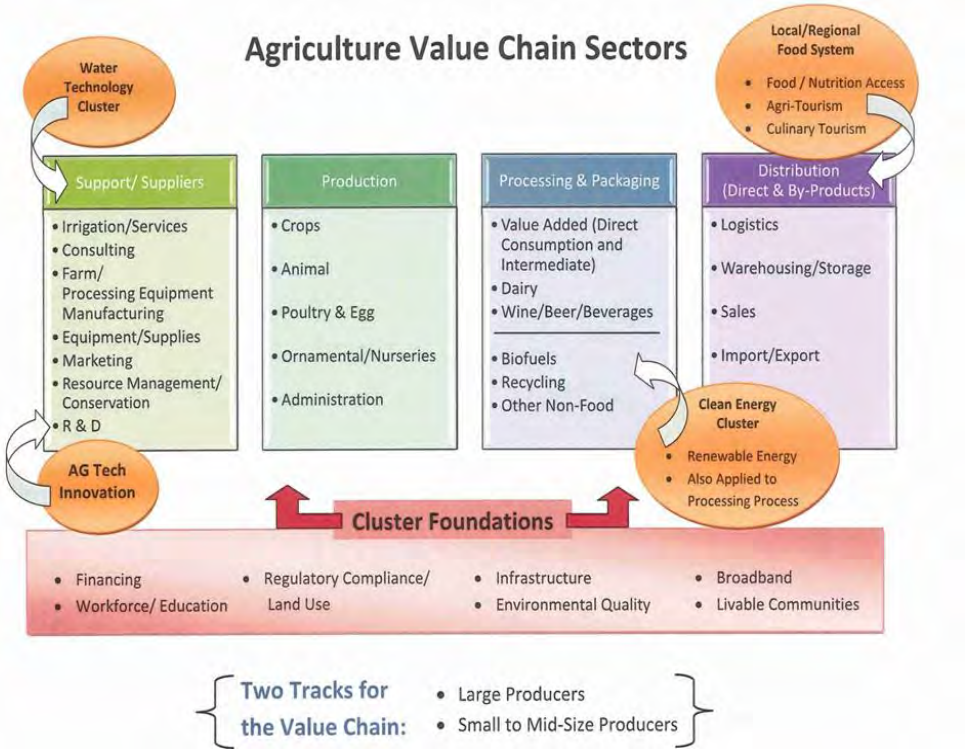
[17] *Agriculture Value Chain, Environmental Scan*, Center of Excellence (Modesto Junior College) June 2011, p. 10.
[18] *San Joaquin Valley Regional Economic Summit, Issues, Opportunities and Recommendations*, USDA ERS Estimate, p. 1 Background, California Partnership for the San Joaquin Valley, March 29, 2012.
[19] 2010 USDA National Agricultural Statistics Service (NASS), provided at SJV Regional Economic Summit, March 29, 2012.
[20] *Food Manufacturing in California,* California Community Colleges Centers of Excellence, 2010, p. 9.

Acknowledging the importance of the Agriculture Cluster to the Valley (and California) economy, the Partnership focused on the Agriculture Value Chain at the first San Joaquin Valley Regional Economic Summit in March of 2012. The report prepared for the *Summit Issues, Opportunities and Recommendations* is used to provide the recommendations for the Cluster Action Plan in Chapter 5. This chapter provides more in-depth economic information on the Valley's Agriculture Cluster to support Action Plan implementation at both the Valley-wide and county levels.

AGRICULTURE CLUSTER COMPONENTS

The Valley's Agriculture Cluster is a complex mix of both agricultural commodity producers and food processors, and also a wide variety of related support industries, logistics and transportation systems, and related research and business activities in water technology, energy and other related manufacturing. Raw commodities and resources pass through a series of systems that add value at each stage and result in not only food products but energy feedstocks, bio-medical products, fiber materials and other outputs. This value-added process constitutes the conceptual basis for the Agriculture Value Chain, illustrated in Figure 4.1-2. It also illustrates the "Cluster Foundations" such as a trained workforce, transportation and broadband infrastructure, availability of financing, and a productive regulatory process that are critical elements in supporting the success of the cluster (and all Valley clusters).

FIGURE 4.1-2
AGRICULTURE VALUE CHAIN SECTORS



Source: Applied Development Economics

For purposes of this analysis, the Agriculture Cluster is comprised of the following four industry components:

CLUSTER COMPONENTS	INDUSTRY TYPES
Support	Agricultural services, farm contract labor, farm equipment and other manufacturing, utilities, professional services, repair services, marketing, research and development, and resource conservation and management
Production	Crop and livestock production, poultry and egg production, ornamental/nurseries, forestry, fishing, and hunting
Processing and Packaging	Food product and packaging, manufacturing, dairy, wine, beer and other beverages, and non-food commodities such as cotton
Distribution	Wholesale trade, retail trade, transportation, warehousing, and sales, including imports/exports

The specific industries that are included in each cluster component as defined by their NAICS codes for the cluster economic analysis are included in Appendix B. The economic analysis does not capture all of the inter-related elements shown in Figure 4.2-1. The Value Chain graphic is a broader conceptual representation of the evolving dynamics of agriculture and its interconnectedness to multiple facets of the Valley's economy and quality of life, including its potential to address multiple issues and challenges such as health and nutrition, food insecurity, water supply and quality, air quality and conservation and management of important resources. The figure does illustrate that the cluster has existing or potential connections to other clusters such as Health, Water Technology, Clean Energy and Tourism. The other cluster analyses capture some but not all of this related employment and economic out-put.

Other important activities such as research and development conducted through the public university system and supported by state and federal agencies also are not captured in the cluster analysis and merit additional exploration. Broadband will further support the opportunity for development of a Valley "Ag Tech Cluster." The Action Plan should capitalize on the potential for the Agriculture Cluster to be an even more catalytic economic driver for innovation and new business and job creation in the Valley, which in turn will improve the region's environmental and health outcomes and help it comply with environmental requirements such as meeting federal air quality standards.

As described in the Regional Economic Summit report, "In addition to its role as an agriculture powerhouse in the international arena, the Valley is a potentially burgeoning market for locavores, or those interested in buying locally grown foods. Whether the incentive is freshness, economic development, food safety, food resilience, healthy ecosystems, minimization of carbon footprint, or simply the desire for stronger community, the demand for regional foods is booming."[21]

[21] *San Joaquin Valley Regional Economic Summit*, ibid., p. 1 Background.

The Value Chain figure notes two tracks of cluster foundations may be needed – one for large producers and one for small to mid-sized producers – since currently, as documented in the Regional Economic Summit Report, the increase in local and regional demand not being met in California through existing production and distribution channels. "Bringing much of that value chain activity back to California will help produce jobs for both our urban and rural communities."[22] The Valley is well-positioned to "capture the value chain." Next sections of this chapter describe the employment, output and input indicators and the economic development opportunies for the Valley's Agriculture Value Chain Cluster.

EMPLOYMENT INDICATORS

As described in Chapter 3, Agriculture is the largest cluster in the Valley. It is challenging to account for all of the agricultural-related employment in the Valley across the four cluster components, for several reasons. These include: the seasonal nature of employment, especially in production; the fact that many workers are undocumented and are not included in the job counts; and the categorization of contract labor as being in the "Support" cluster component rather than in the "Production" component, even though many in this workforce are actually working on production activities – this is due to the federal classification of contract labor as a support service.

Table 4.1-1 presents Agriculture Cluster Employment trends across the four Cluster components from 2001 through 2010, including employment changes and rate of growth, concentration (compared to the state), and shift-share (a ratio derived from the region's rate of growth compared to that of the state). The table is followed by a summary of key trends in the Cluster:

TABLE 4.1-1
AGRICULTURE CLUSTER EMPLOYMENT INDICATORS, 2001-2010

Cluster Component	Employment 2001	Employment 2010	Employment Change 2001 to 2010	Percentage Change 2001 to 2010	Location Quotient 2010	Shift-share
Support	116,076	119,394	3,318	2.9%	5.50	-0.53%
Production	87,532	81,795	-5,737	-6.6%	4.93	2.61%
Processing and Packaging	57,499	62,579	5,080	8.8%	3.26	19.00%
Distribution	19,798	25,246	5,448	27.5%	1.98	12.13%
Agriculture Cluster Total	280,905	289,014	8,109	2.9%	4.12	4.87%

Source: Source: ADE; data from IMPLAN CEW/ES202 County Employment Database

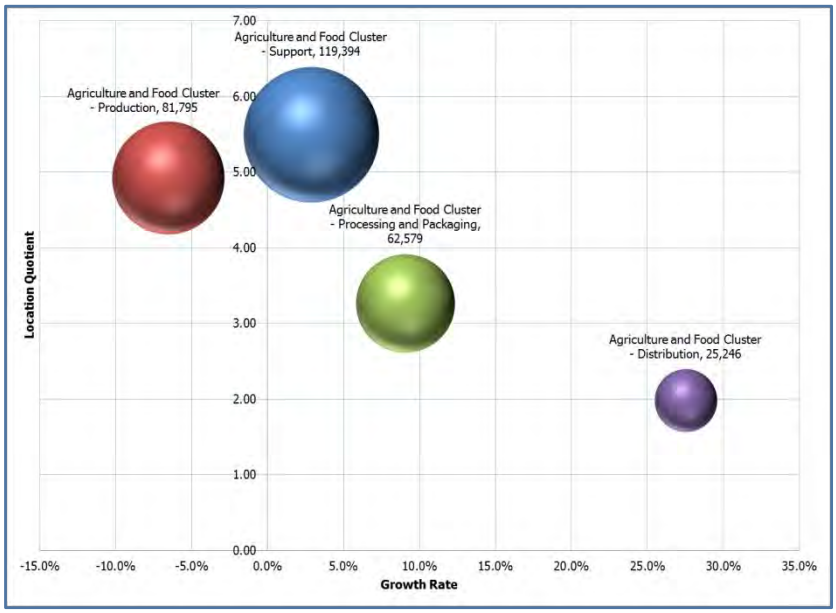
[22] Ibid, p. 2 of Background.

- The Agriculture Cluster accounted for over 289,000 jobs in the San Joaquin Valley in 2010 - 23.1 percent of overall regional employment.
- The Cluster accounted for 19.7 percent of the overall regional job growth that occurred between 2001 and 2010.
- As a whole, the Cluster grew by 2.9 percent between 2001 and 2010, faster than across the rest of California. During this period, the Cluster added more than 8,100 jobs.
- All cluster components except for production grew during this period. The processing and packaging and distribution components outperformed the State's growth in these two components, in terms of relative rate of growth (shift-share).
- Related to the issue regarding categorization of production versus support-related employment, the Valley's production component included 61,400 farm labor jobs in 2010, down from 70,600 in 2001, while the support component included 73,200 jobs classified under the NAICS code for "Farm Labor Contractors and Crew Leaders," up from 67,000 in 2001. All of these support jobs are engaged in farm production, so on a combined basis the net loss of farm production employment was about 3,000 jobs rather than the 5,700 indicated in Table 4.1-1.
- The concentration of employment in the overall Agriculture Cluster was four times the statewide average. The concentration for all of the cluster components was significantly greater than the statewide average (Figure 4.1-4). As indicated in Chapter 3, Figure 3.2-2, "Agriculture" sector employment as defined by EDD was nearly six times more concentrated in the Valley than the state; however, this does not account for the distribution and processing systems that are part of the Cluster and are more widely distributed in other parts of the state – indicating that some value-added aspects of the Cluster are occurring outside of the region.

Figure 4-1.-3 illustrates the size, concentration and growth rate for the four Agriculture Cluster components from 2001 through 2010.

FIGURE 4.1-3

SIZE, CONCENTRATION AND GROWTH RATE FOR AGRICULTURE CLUSTER COMPONENTS, 2001-2010



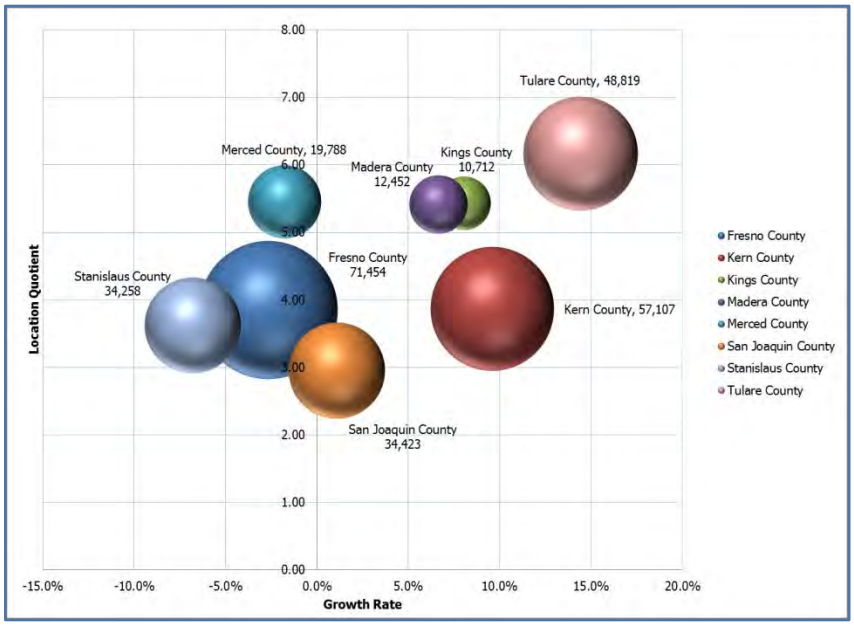
Source: ADE, Inc.; data from IMPLAN CEW/ES202 County Employment Database

GEOGRAPHIC CONSIDERATIONS

Figure 4.1-4 illustrates the growth trends geographically of the overall Agriculture Cluster by each county in the Valley, Figures 4.1-5 through 4.1-8 show the detail by each Component for each county.

FIGURE 4.1-4

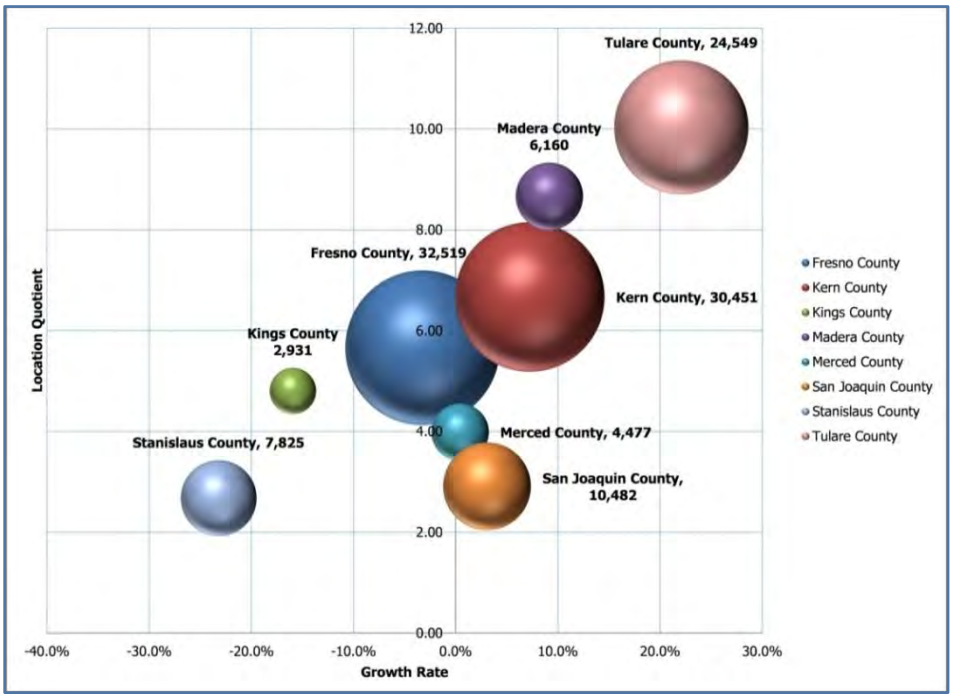
AGRICULTURE CLUSTER SIZE, CONCENTRATION AND GROWTH RATE BY COUNTY, 2001-2010



Source: ADE, Inc.; data from IMPLAN CEW/ES202 County Employment Database

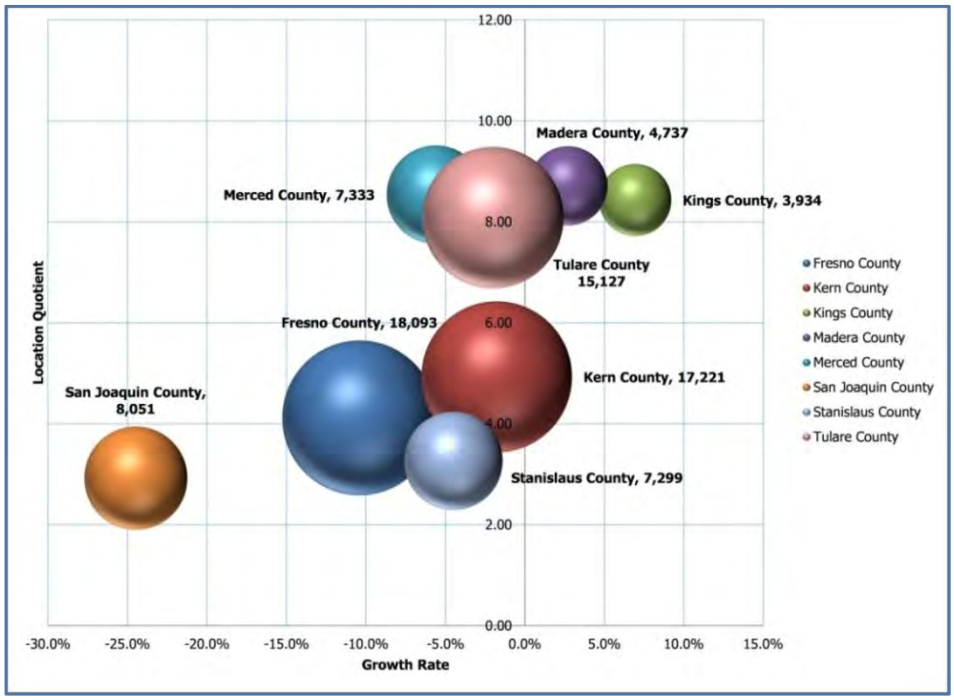
- The Agriculture Cluster had the largest employment groupings in Fresno, Kern, San Joaquin, Stanislaus, and Tulare counties, with each county accounting for more than 34,000 jobs. Fresno County has the largest employment, followed by Kern County and then Tulare County.
- Tulare County had the fastest rate of growth, followed by Kern County, Kings County and Madera County. Fresno, Merced and Stanislaus counties all experienced job loss within the Cluster, while San Joaquin County had a small level of growth.
- The job concentration compared to the state was highest in Tulare County; however, the concentration factors are well above the statewide average in all of the Valley's counties.
- The following summarizes key trends and characteristics for the eight counties for each of the four cluster components, followed by four figures (Figures 4.1-5 through 4.1-8) with graphical illustration.
- Support industries were highly concentrated in Tulare, Madera and Kern counties, followed by Fresno and Kings counties, as shown in Figure 4.1-5. All counties were above the state level. These three counties also had the fastest rates of growth. Fresno, Kings and Stanislaus counties saw a loss of employment, with Stanislaus County having the largest rate of loss.
- A number of the counties were highly concentrated in production activity, which includes crop production. However, only Madera and Kings County showed positive relative growth rates (Figure 4.1-6). San Joaquin County had the largest loss of employment, followed by Fresno County. As noted earlier in this chapter, production activity was understated due to the way contract labor is categorized.
- The processing component was most concentrated in Stanislaus, Merced and Kings Counties (Figure 4.1-7). Along with Kings County, Tulare and Kern counties showed the highest relative growth in processing activity. Employment growth was minimal or small in Stanislaus, Fresno and San Joaquin counties, while Merced and Madera counties both lost some employment in this component.
- Distribution activity was most concentrated in San Joaquin and Merced counties, while Kern Madera, San Joaquin and Kern counties showed the fastest relative growth rates in this cluster component (Figure 4.1-8). This cluster component, while the smallest, had the fastest rates of growth overall. Only Kings County has a loss of employment in this component.

FIGURE 4.1-5
AGRICULTURE CLUSTER SUPPORT COMPONENT BY COUNTY, 2001-2010



Source: ADE, Inc.; data from IMPLAN CEW/ES202 County Employment Database

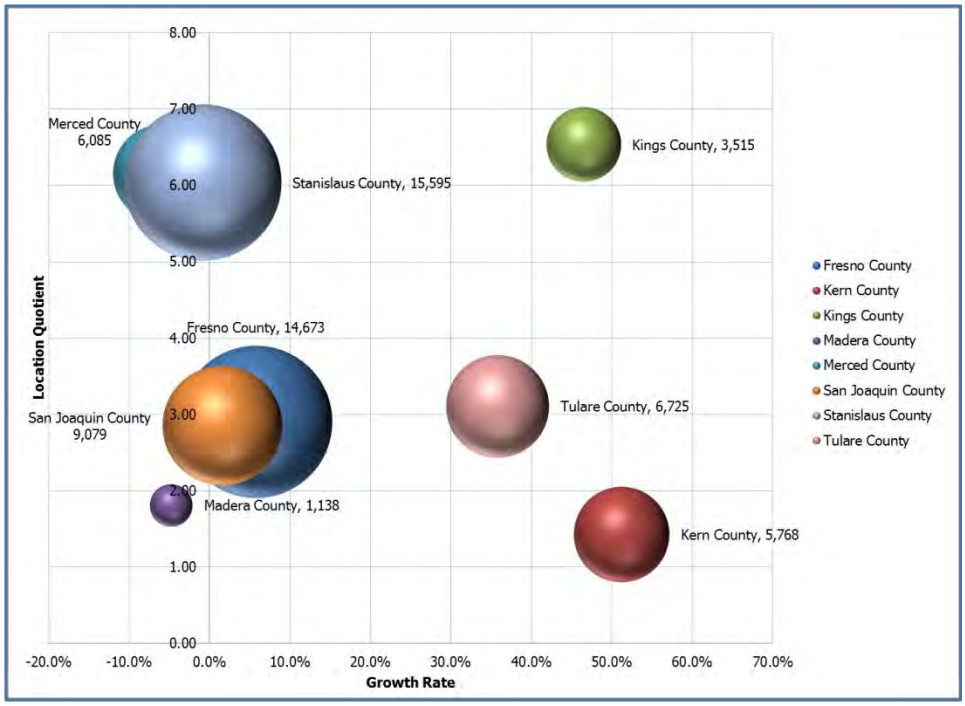
FIGURE 4.1-6
AGRICULTURE CLUSTER PRODUCTION COMPONENT BY COUNTY



Source: ADE.; data from IMPLAN CEW/ES202 County Employment Database

FIGURE 4.1-7

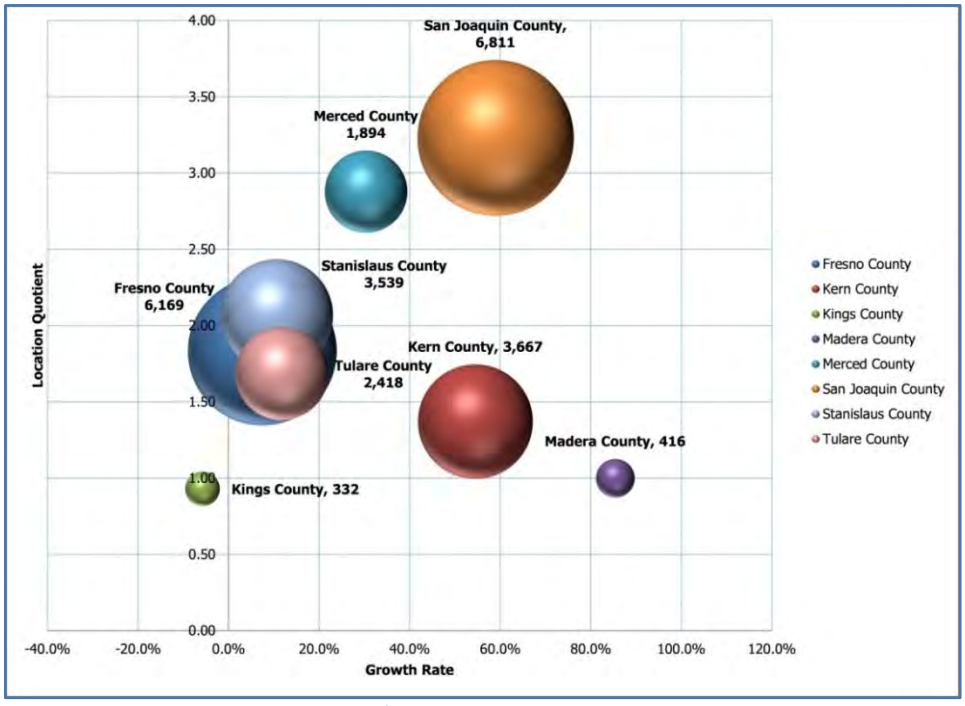
AGRICULTURE CLUSTER PROCESSING COMPONENT BY COUNTY, 2001-2010



Source: ADE, Inc.; data from IMPLAN CEW/ES202 County Employment Database

FIGURE 4.1-8

AGRICULTURE CLUSTER DISTRIBUTION COMPONENT BY COUNTY, 2010



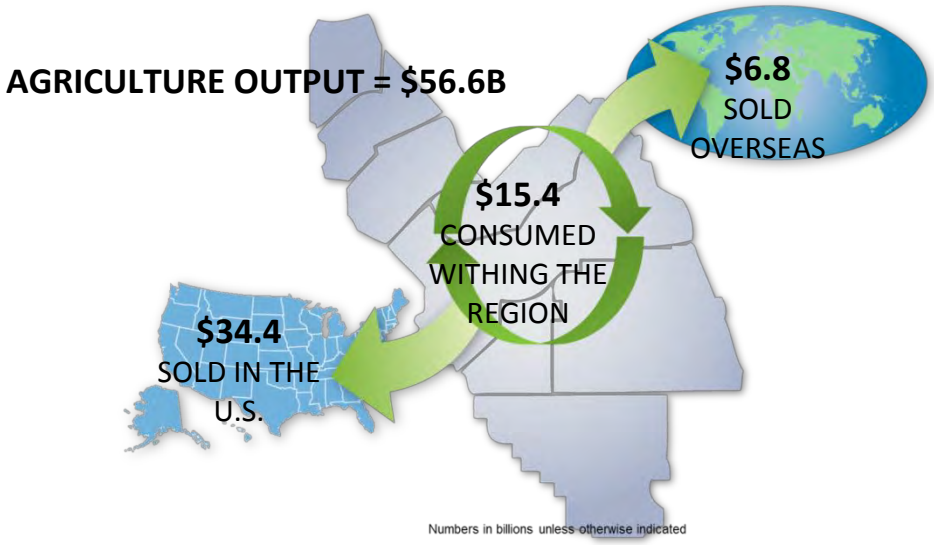
Source: ADE, Inc.; data from IMPLAN CEW/ES202 County Employment Database

TRADE FLOW INDICATORS

This section presents information on the regional trade flows – outputs, supplier inputs required to produce the Agriculture Cluster's outputs, and the gaps in regional supplier purchasing that represent potential economic development opportunities in terms of filling the sales leakage out of the region. This information is based on an analysis of the IMPLAN data for 2010, the most recent year available. As shown in Figure 6.1-9, the total commodity value of the Valley's Agriculture Cluster (inclusive of core production and processing and selected distribution and support sectors) was $56.6 billion in 2010. The Cluster's foreign export value was $6.8 billion, while another $34.4 billion in cluster commodities was sold domestically elsewhere in the US. About $15.4 billion of the Cluster's "output" was consumed within the region, some as intermediate inputs for value-added food products (food processing/manufacturing) and some as final food products to consumers (more on this below).

FIGURE 4.1-9

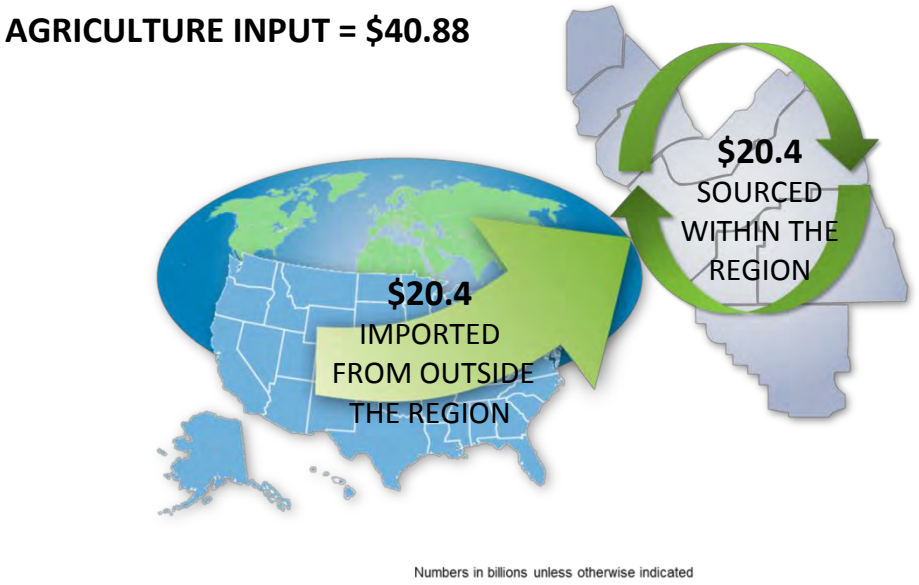
AGRICULTURE OUTPUT, 2010



Source: ADE, Inc.; data from IMPLAN3 input-output model

The supplier purchases required for production inputs for the Agriculture Cluster had a total value of $40.8 billion in 2010, of which $20.5 billion came from within the region (Figure 4.1-10). That is, in order to produce the $56.6 billion in output, the Cluster required commodities, supplies and services totaling $40.8 billion. The IMPLAN input-output model estimated that the Cluster businesses obtained half of this production input requirement from other businesses within the Valley. An additional $20.3 billion in commodity demand (leakage) was provided from businesses located outside the region.

FIGURE 4.1-10
AGRICULTURE INPUT, 2010



Source: ADE, Inc.; data IMPLAN3 input-output model

For an additional perspective, an analysis conducted for the Regional Economic Summit by Dr. Antonio Avalos, Chair of the Department of Economics at Fresno State University, further identified regional and county level leakages by cluster component. Using the NAICS-based definition of Agriculture Cluster components compatible with the Center of Excellence report on California's Agriculture Value Chain (similar to ADE's subsequent cluster component definitions), Dr. Avalos analyzed the Valley regional purchase coefficients (RPCs) using 2010 IMPLAN data. The RPC is an indicator of regional food systems integration. The RPC for the Valley is "the proportion of total demand by consumers in the Valley that is supplied by producers located within the Valley. A large RPC means the Valley experiences less leakages (a sign of stronger regional integration) and thus implies larger employment and income multipliers (since more dollars stay and circulate within the Valley)."[23]

According to Dr. Avalos' analysis, the RPCs for the Valley's Agriculture Cluster components showed the greatest level of integration for the Support component, and the least for the Processing and Packaging component, signaling an important opportunity for filling the gaps:

- Support – 55%
- Production – 51%
- Distribution – 49%
- Processing and Packaging – 15%

23 Ibid., p 3 Background, provided by Dr. Antonio Avalos, March 2012.

RPCs were above 40 percent for all the counties for Support industries, but below 30 percent for Processing and Packaging industries. Across the entire Cluster, San Joaquin and Stanislaus counties had the highest RPCs (48 and 44 percent respectively), while all others except Madera ranged from 32 to 28 percent. Madera, as the smallest county, had an overall RPC of 27 percent.[24] Table 4.1-2 identifies some of the top leakage industries that could serve as targets for economic development in the region, based on ADE's analysis.

TABLE 4.1-2

CLUSTER SUPPLIER PURCHASES – TOTAL DEMAND AND LEAKAGE FOR SELECTED INDUSTRIES

DESCRIPTION	GROSS COMMODITY DEMAND	REGIONAL PURCHASE PERCENTAGE	REGIONAL COMMODITY INPUTS	COMMODITY LEAKAGE
Total Commodity Demand	$40,810,930,000	N/A	$20,497,000,000	$20,313,930,000
Other agriculture and food cluster establishments	$19,874,814,000	53.2%	$10,581,557,000	$9,293,250,000
Wholesale trade businesses	$3,391,348,000	65.4%	$2,217,394,000	$1,173,954,000
Management of companies and enterprises	$1,640,922,000	47.4%	$777,257,000	$863,665,000
Petroleum refineries	$878,273,000	15.1%	$132,191,000	$746,082,000
Paper mills	$625,130,000	2.2%	$13,473,000	$611,657,000
Artificial and synthetic fibers and filaments manufacturing	$385,200,000	0.0%	$25,000	$385,177,000
Plastics bottle manufacturing	$372,030,000	9.7%	$35,923,000	$336,107,000
Real estate establishments	$1,091,755,000	70.8%	$772,679,000	$319,076,000
Aluminum product manufacturing from purchased aluminum	$319,417,000	6.7%	$21,487,000	$297,929,0900
Other basic organic chemical manufacturing	$286,332,000	2.3%	$6,519,000	$279,813,000
Paperboard Mills	$299,983,000	14.0%	$42,049,000	$257,934,000
Metal can, box, and other metal container (light gauge) manufacturing	$473,344,000	53.6%	$253,766,000	$219,578,000
Plastics packaging materials and unlaminated film and sheet manufacturing	$237,198,000	14.4%	$34,202,000	$202,996,000
Other basic organic chemical manufacturing	$286,332,000	2.3%	$6,519,000	$279,813,000
Paperboard Mills	$299,983,000	14.0%	$42,049,000	$257,934,000
Metal can, box, and other metal container (light gauge) manufacturing	$473,344,000	53.6%	$253,766,000	$219,578,000
Plastics packaging materials and unlaminated film and sheet manufacturing	$237,198,000	14.4%	$34,202,000	$202,996,000
Semiconductor and related device manufacturing	$196,066,000	0.2%	$297,000	$195,768,000
Other basic organic chemical manufacturing	$286,332,000	2.3%	$6,519,000	$279,813,000
Paperboard Mills	$299,983,000	14.0%	$42,049,000	$257,934,000
Metal can, box, and other metal container (light gauge) manufacturing	$473,344,000	53.6%	$253,766,000	$219,578,000

24 Memo from Dr. Antonio Avalos, California State University, Fresno, Department of Economics, January 28, 2012.

DESCRIPTION	GROSS COMMODITY DEMAND	REGIONAL PURCHASE PERCENTAGE	REGIONAL COMMODITY INPUTS	COMMODITY LEAKAGE
Plastics packaging materials and unlaminated film and sheet manufacturing	$237,198,000	14.4%	$34,202,000	$202,996,000
Semiconductor and related device manufacturing	$196,066,000	0.2%	$297,000	$195,768,000
Other plastics product manufacturing	$204,092,000	6.2%	$12,686,000	$191,406,000
Other basic organic chemical manufacturing	$286,333,000	2.3%	$6,519,000	$279,813,000
Paperboard Mills	$299,983,000	14.0%	$42,049,000	$257,934,000
Metal can, box, and other metal container (light gauge) manufacturing	$473,344,000	53.6%	$253,766,000	$219,578,000
Plastics packaging materials and unlaminated film and sheet manufacturing	$237,198,000	14.4%	$34,202,000	$202,996,000
Semiconductor and related device manufacturing	$196,066,000	0.2%	$297,000	$195,768,000
Other plastics product manufacturing	$204,092,000	6.2%	$12,686,000	$191,406,000
Plastics material and resin manufacturing	$184,228,000	0.9%	$1,617,000	$182,611,000
Transport by rail	$433,086,000	58.9%	$255,253,000	$177,834,000
Lessors of nonfinancial intangible assets	$200,922,000	16.5%	$33,132,000	$167,790,000
Scientific research and development services	$191,362,000	19.2%	$36,712,000	$154,649,000
Other agriculture and food cluster establishments	$19,874,814,000	53.2%	$10,581,557,000	$9,293,258,000

Source: ADE, based on 2007 Census of Agriculture and USDA Economic Research Service, Direct and Intermediated Marketing of Local Foods in the United States, November 2011.

"LOCAL FOOD" DEMAND

Consumer and institutional demand for food and agricultural products in the San Joaquin Valley region is estimated at $7.4 billion annually.[25] Based on the availability of food produced in the Valley, the IMPLAN input-output model suggests that more than half of this demand could be sourced from within the Valley. However, modern food distribution and retailing systems are much more centralized and it is likely that less than 5% of food consumed within the region is produced there.

USDA studies have calculated that about $4.8 billion in food products are sourced locally throughout the nation (2007), amounting to about 3% of national agricultural production. Local food sales occur both through direct farm-to-consumer sales and also when farmers sell products through intermediated channels that focus on retailing the products in a local region. This latter approach accounts for three times the sales as direct-to-consumer marketing.

The U.S. Census of Agriculture tracks direct farm-to-consumer sales, which are shown for the San Joaquin Valley counties in Table 4.1-3. If the relationship of intermediated sales to direct sales holds true in the Valley, then total sales of Valley agricultural products to local consumers totaled about $269 million in 2007, equivalent to about $275 million in 2010 dollars. This would be equal to 4.2 % of estimated food demand in the Valley.

[25] Commodity demand estimate from IMPLAN Input-Output Model aggregated for the San Joaquin Valley region.

TABLE 4.1-3

LOCALLY CONSUMED FOOD IN THE SAN JOAQUIN VALLEY, 2007 ($ MILLIONS)

County	Direct-to-Consumer	Intermediated	Total
Fresno	$17.17	$51.51	$68.68
Kern	$5.82	$17.45	$23.26
Kings	$0.47	$1.42	$1.89
Madera	$1.73	$5.20	$6.94
Merced	$14.25	$42.74	$56.98
San Joaquin	$11.84	$35.51	$47.35
Stanislaus	$4.23	$12.69	$16.92
Tulare	$11.68	$35.03	$46.71
Total	$67.18	$201.54	$268.72
Adjusted to 2010			$275.33

Source: ADE, based on 2007 Census of Agriculture and USDA Economic Research Service, Direct and Intermediated Marketing of Local Foods in the United States, November 2011.

It is reasonable to believe that this percentage might be higher in the San Joaquin Valley than for the nation as a whole, given the substantial concentration of agricultural production in the region. In addition, the type of commodities grown, such as fruits, nuts and fresh vegetables, are particularly conducive to direct-to-consumer sales, compared to the grain products that are predominant in the mid-western states. Even if the percentage were somewhat higher, there is still a large gap between demand for and supply of local grown and sourced food in the Valley, representing a strong market opportunity to develop local and regional food systems, not to mention numerous other benefits such as improved access to healthy foods for underserved communities, job creation, community building, and keeping more dollars in the regional economy.

4.2 ENERGY CLUSTER

According to the Partnership's Energy Action Plan, the San Joaquin Valley's growing population and expanding economy will require increased supplies of reliable, diverse, clean energy, which is defined as "increasing the energy use efficiency of our homes and businesses and other resources; and producing more electricity and fuel in the Valley from renewable energy resources such as solar, wind and biomass."[26] With the growth of the Valley's population and economy over the past decade, the use of and demand for energy has been steadily increasing. Between 2000 and 2010, while California's total electricity consumption (residential, commercial and industrial) grew by 3.5 percent, the Valley's consumption increased by more than 20 percent.[27] The transport of water across state, regional and local water systems also is a major source of energy use.

Compared to other regions, both non-residential electricity and natural gas per capita consumption are particularly high in the Valley, partially due to the strong concentration of agriculture and food processing in the region.[28] At the same time, higher electricity rates have been documented for some parts of the region compared to other California regions and states, constraining business expansion and attraction and putting agricultural value-added activities among others at a competitive disadvantage.[29]

The demand for energy is increasing globally, along with increasing price and supply volatility and increasing concerns about the impacts of climate change and air and water pollution related to the use of fossil fuels. There is an increasing imperative toward development of a low-carbon economy. California is leading the way in the development and transmission (through the "Smart Grid") of renewable energies; fostering adoption of energy and water efficiency technologies; and creating a clean energy future to address these challenges. In addition to market forces, drivers include legislative requirements and policy and funding incentives in the areas of energy, air quality, transportation, land use and health, among other areas. As the state continues to move in this direction, jobs are projected to increase in the energy and utilities sectors throughout the State (Centers of Excellence and other sources).

The San Joaquin Valley has been an important source of oil and national gas production for the nation for many years; has an abundance of renewable energy resources and assets; and is an important part of this future. In 2010, Dr. Shawn Kantor of UC Merced estimated that clean energy projects in the Valley could bring more than 100,000 jobs to the area and "fundamentally change the trajectory of economic development and job creation in the region." A significant portion of these jobs would be due

to construction of renewable energy facilities and the High Speed Rail system, a "clean transportation"

[26] *California Partnership for the San Joaquin Valley Energy Action Plan*, www.sjvpartnership.org.
[27] *California Regional Energy Profile, 2010.* U.S. Energy Administration, Annual Energy Review, 2011, with data from the California Energy Commission, Energy Consumption Data Management System.
[28] *2010 California Regional Progress Report*, Ibid., p. 67-69.
[29] *San Joaquin Valley Regional Economic Summit*, p. 7, Infrastructure Section.

project. Research focusing on clean energy and environmental sustainability through the universities and other organizations could lead to additional jobs in the future. [30]

The Energy Cluster, especially the development of innovative renewable and clean energies and energy efficiency technologies for use and transmission of water and in the built environment, is a high priority for the Partnership and the San Joaquin Valley (SJV) Clean Energy Organization (established through the Partnership in 2007). It is also a high priority for the San Joaquin Valley Regional Policy Council, which is seeking to develop a "Regional Energy and Economy Development Roadmap" for the San Joaquin Valley. Other partners include the CCVEDC, the San Joaquin Valley Air Pollution Control District, utilities, education and workforce development partners, the Water, Energy and Technology Center (WET), Central Valley Business Incubator, UC Advanced Solar Technologies Institute (UC Solar), California Wind Energy Association, and many other partners across the Valley including state and federal partners.

The Partnership's annual 2010 report indicated that more than $100 million in federal funding for clean energy investments was brought into the Valley during the 2009-2010 time period, including significant levels of ARRA funding. Additional investments from state and federal agencies and utilities have supported workforce training, energy efficiency improvements, local government programs, and development of renewable energies, as described in the Partnership's 2010-2011 annual report related to the accomplishments of the SJV Clean Energy Organization and other Partnership Work Groups.[31]

ENERGY CLUSTER COMPONENTS

Despite the high level of focus on energy, it is challenging to find both a consistent definition of the Energy Cluster "value chain" in terms of component groups of industries, and to identify the NAICS codes that comprise the Cluster. This is in part because Energy is a rapidly evolving cluster and there are not yet specific NAICS codes for some of the industries, especially in the production of renewable energies. In some cases such as the solar industry, activities cover many NAICS codes and are difficult to classify. In other cases, activities fall under categories that can involve non-energy-related functions. [32] For example, installation of solar panels on roofs of buildings is classified under a NAICS code for roofing contractors, which is a more encompassing area than solar panel installation. The development of biofuels is sometimes categorized within the agriculture value chain.

To identify the components of the Energy Cluster for this report, ADE conducted a review of diverse reports, research and methodologies related to defining the "green" components of the Energy Cluster in California and nationally, building on our database of previous cluster analyses. Key resources included California's Labor Market Information thorough review and sorting of draft "green industries"

[30] *The Economic Opportunity from Clean Energy Jobs in California's San Joaquin Valley,* Dr. Shawn Kantor, UC Merced, October 2010.
[31] *California Partnership for the San Joaquin Valley 2010-2011 Report*, p. 37.
[32] Draft "Green Industries" sorted by NAICS, California Employment Development Department, Labor Market Information Division, p. 30.

sorted by NAICS; reports on the green economy and green innovation prepared for Next 10 (*Many Shades of Green 2012* and *2012 Green Innovation Index*) and the California Economic Strategy Panel; research by the Brookings Institution with the Battelle Technology Partnership Alliance *(Sizing up the Green Economy: A National and Regional Green Jobs Assessment, 2011*); and several cluster studies in California and other states and regions.

As defined for this project, the Energy Cluster is comprised of nine sector components, listed below with a reference to some of the key industries. The specific industries included in each cluster component are included in Appendix B by their NAICS code. They include core and energy-related activities:

CLUSTER COMPONENTS	INDUSTRY TYPES
Alternative energy distribution	Electrical apparatus and equipment, wiring supplies, other electronics parts and equipment merchant retailers, plumbing and heating equipment and supplies
Alternative energy generation (production)	Ethyl alcohol manufacturing, water and sewer line and related structures construction, roofing contractors
Energy efficiency	Electrical contractors and other wiring installation contractors, plumbing, heating and air-conditioning contractors, and drywall and insulation contractors
Equipment Manufacturing	Oil and gas field machinery and equipment manufacturing, turbine manufacturing, heating equipment manufacturing, automatic environmental control manufacturing, power, distribution and specialty transformer manufacturing
Petroleum Production	Crude petroleum and natural gas extraction, natural liquid gas extraction, drilling oil and gas wells, support activities
Petroleum Distribution	Bulk stations and terminals, merchant wholesalers, and pipeline transportation of crude oil, natural gas and refined petroleum products
Power generation and transmission	Hydroelectric power generation, fossil fuel electric power generation, nuclear electric power generation, electric bulk power transmission and control, electric power and natural gas distribution, and other electric power generation
Research, Energy-Related	Professional, scientific and technical services
Services, Energy-Related	Financial and equipment repair services

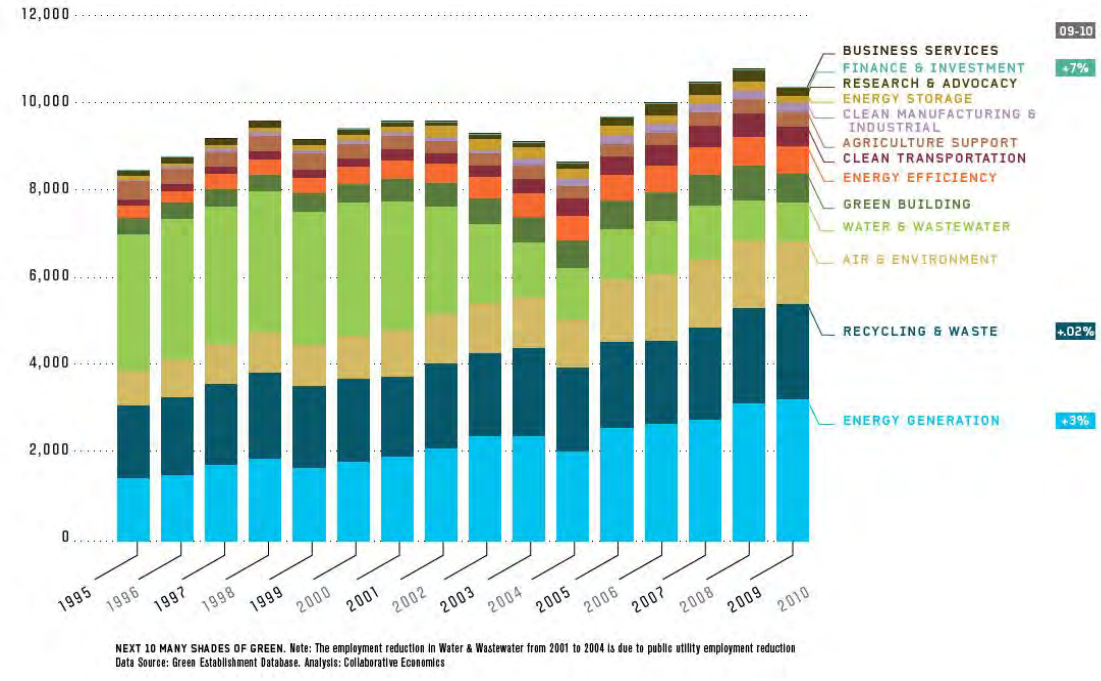
The southern San Joaquin Valley historically has been a center of substantial petroleum production and

processing, with Kern County being the leading energy provider for California. More recently, this area has seen significant development of wind power resources; Kern County is California's largest single wind energy source, with further expansions planned. Efforts to develop solar power facilities along with biomass (ag-based and other sources such as biogas), power generation plants, geothermal facilities and transmission capabilities have occurred throughout the Valley, with many facilities planned and coming on-line over the next few years. As documented in the CCWC Public Sector Infrastructure analysis, the largest employment impact in the development and transmission of renewable energy resources is during the construction phase (see section 4.8.)

Next 10's new green economy report *Many Shades of Green 2012* provides a profile of the San Joaquin Valley "Green Economy." Alternative energy generation was the largest segment of the Valley's employment in the "core green economy" in 2010. This segment has increased by 126 percent since 1995. Solar and wind generation accounted for the majority of the jobs. Even with a contraction of jobs by four percent in 2010 reflecting the trends in the overall regional economy, employment by energy generation increased by three percent from 2009 to 2010, adding almost 100 new jobs.[33] Figure 4.2-1 shows trends in employment by green segment for the Valley between 1995 and 2010. While the methodologies and data bases used to determine these employment estimates differ in part from this the analysis in this report, the trends are consistent.

FIGURE 4.2-1

EMPLOYMENT BY GREEN SEGMENT/SAN JOAQUIN VALLEY



[33] Many Shades of Green, 2012, Next 10, prepared by Collaborative Economics, 2012, pp. 34-35.

EMPLOYMENT INDICATORS

This section presents a summary of key employment trends in the Cluster. Table 4.2-1 below presents Energy Cluster employment across the seven core cluster components and energy-related research from 2001-2010, including employment changes and rate of growth, concentration (compared to the state), and shift-share (a ratio derived from the region's rate of growth compared to that of the state). Figure 4.2-2 is a graphic illustration of these trends.

- The Energy Cluster accounted for about 33,350 jobs in the San Joaquin Valley in 2010; total jobs declined by nearly 2,500 between 2001 and 2010, almost seven percent.
- Cluster employment accounted for 2.7 percent of total regional employment.
- Almost all of the Cluster's loss was in the energy efficiency component, the Cluster's largest, in part related to the downturn in construction. These losses were offset partially by strong growth in equipment manufacturing, power generation, research and petroleum distribution.
- Although the Cluster lost some ground over the decade, the region fared relatively better than the state, with a lower rate of loss compared to the state's rate, showing resiliency during the recession. Overall, the region outperformed the state, with several components growing faster relative to the state.
- The concentration of employment in the Cluster compared to the state was about average.

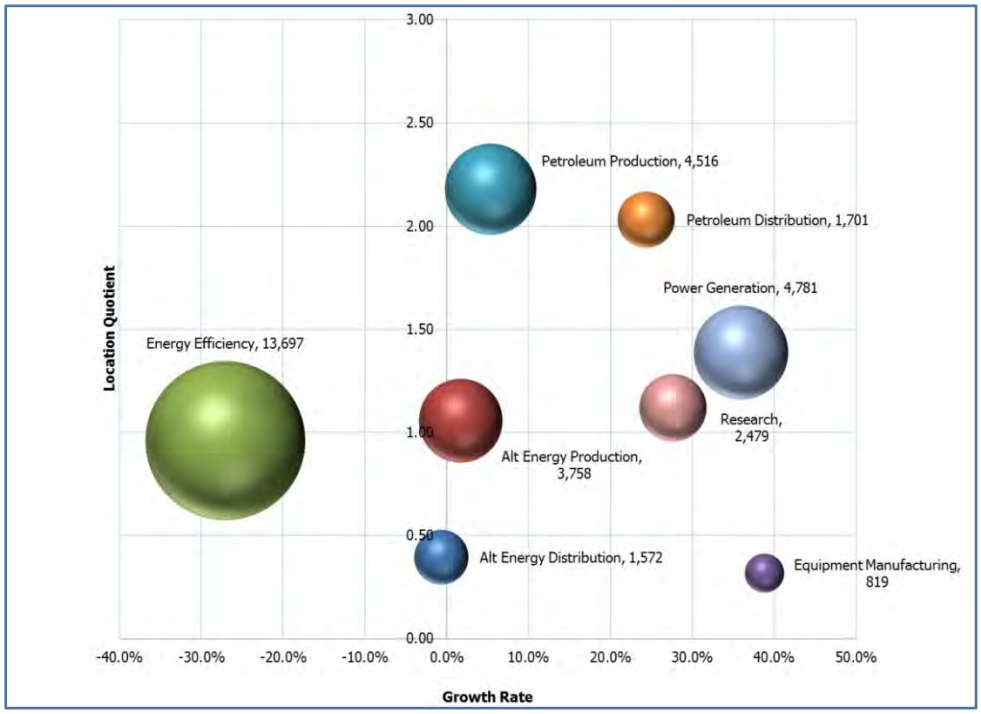
TABLE 4.2-1
ENERGY CLUSTER EMPLOYMENT INDICATORS

Cluster component	Employment 2001	Employment 2010	Employment Change 2001 to 2010	Percentage Change 2001 to 2010	Location Quotient 2010	Shift-share
Alternative Energy Distribution	1,584	1,572	-12	-0.7%	0.40	20.55%
Alternative Energy Production	3,696	3,758	62	1.7%	1.06	-5.55%
Energy Efficiency	18,789	13,697	-5,092	-27.1%	0.96	-0.33%
Equipment Manufacturing	593	820	227	38.8%	0.32	80.76%
Petroleum Production	4,289	4,516	227	5.3%	2.18	2.80%
Petroleum Distribution	1,368	1,701	333	24.3%	2.03	21.39%
Power Generation	3,518	4,781	1,263	35.9%	1.39	50.89%
Energy Related - Services	82	78	-4	-4.5%	0.82	5.09%
Energy Related - Research	1,904	2,429	525	27.6%	1.12	22.52%
Energy Cluster Total	**35,823**	**33,353**	**-2,470**	**-6.9%**	**1.01**	**13.32%**

Source: ADE, Inc. IMPLAN CWS, ES 202 County Employment Database

FIGURE 4.2-2

SIZE, CONCENTRATION AND GROWTH RATE FOR ENERGY CLUSTER COMPONENTS, 2001-2010



Source: ADE, Inc., Data from IMPLAN CEW/ES 202 County Employment Database.
Note Energy-related services not included due to its small size.

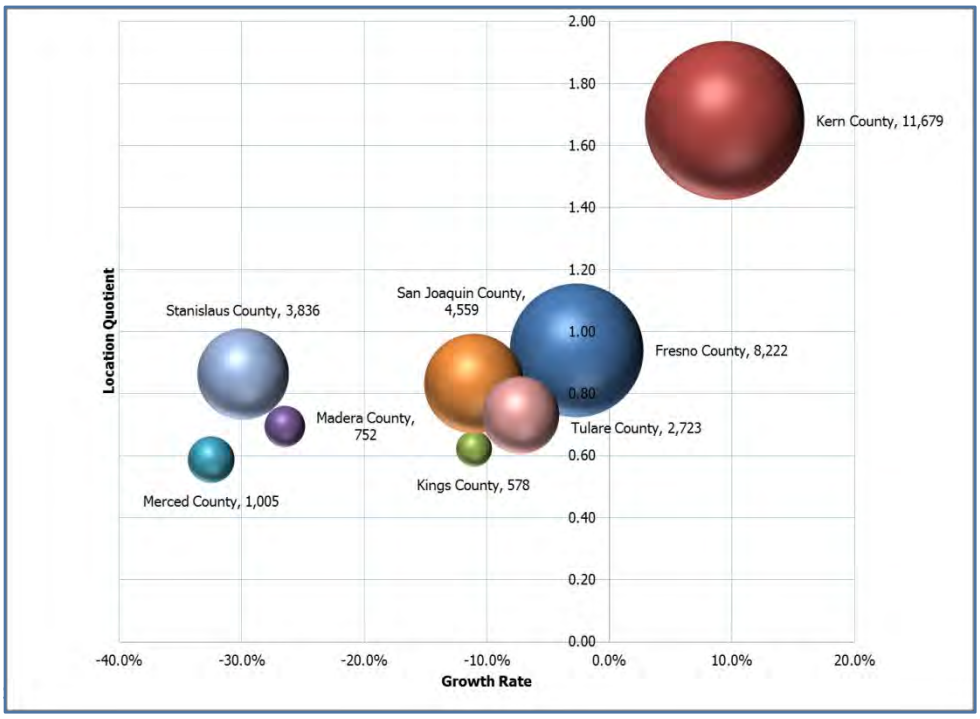
GEOGRAPHIC CONSIDERATIONS

Figure 6.2-3 illustrates employment growth trends and geographic concentration of the Energy Cluster by each county in the Valley:

- The Energy Cluster is highly concentrated in Kern County, with almost 11,700 jobs in 2010 and an employment concentration nearly twice the state average, which was an increase from 2001. Kern County has most of the petroleum production and processing in the region but also has seen substantial investments in wind energy.
- Another large grouping existed in Fresno with 8,200 jobs; San Joaquin and Stanislaus counties were next with 4,600 and 3,800 jobs, respectively.
- Only Kern County had job growth between 2001 and 2010, adding 1,000 jobs during this time. Stanislaus County lost more than 1,600 jobs.
- All counties but Kern had a lower employment concentration than that of the State, but Fresno County was almost the same as the State in 2010, a slight increase from 2001.

FIGURE 4.2-3

ENERGY CLUSTER EMPLOYMENT BY COUNTY, 2001-201O



The Brookings Institution report on the green economy and regional green jobs provides some additional insights on some challenges and emerging strengths in energy-related activities for the Valley's four largest metropolitan areas, part of an assessment that included the nation's 100 largest metropolitan areas. Table 4.2-2 provides information on Energy Cluster-related indicators. Overall, these areas ranked toward the bottom of the list nationally, except for Fresno. The fastest growing segments were in energy-saving building materials and solar photovoltaic, the latter for which job numbers are currently small. The share of traded sector establishments for all segments of the green economy that are clustered are not present, except for Fresno; clustering was shown to improve economic performance.

The *2012 Green Innovation Index* reported that Fresno was ranked fourth among California's top solar cities by generation capacity and ranked fifth by number of installations (through August 2011), which is an indication of growing significance.[34]

[34] *2012 Green Innovation Index,* Next 10, 2012, p. 58.

TABLE 4.2-2

CLEAN ECONOMY ENERGY-RELATED INDICATORS FOR SAN JOAQUIN VALLEY METRO AREAS, 2003-2010

Valley Metro Area	Ranking of top 100 U.S. Metro Areas (All Clean Jobs)	Fastest Growing Energy-Related Segments	Share of Traded Sector Establishments that are Clustered, 2010 (All Segments)
Bakersfield-Delano	89	Energy-Saving Building Materials, Solar Photovoltaic	0.0
Fresno	57	Solar Photovoltaic (; (Energy-Saving Building Materials had growth)	51.1
Modesto	93	Energy-Saving Building Materials	0.0
Stockton	82	Energy-Saving Building Materials, Photovoltaic	0.0

Source: Sizing the Green Economy: A National and Regional Green Jobs Assessment, Mark Muro, Jonathan Rothwell and Sevashree Saha, Brookings Institution with Battelle Technology Partnership Alliance, 2011, Appendix A, pp. 52-54 and interactive mapping tool: **www.brookings.edu/metro/clean-Economy/map.aspx**

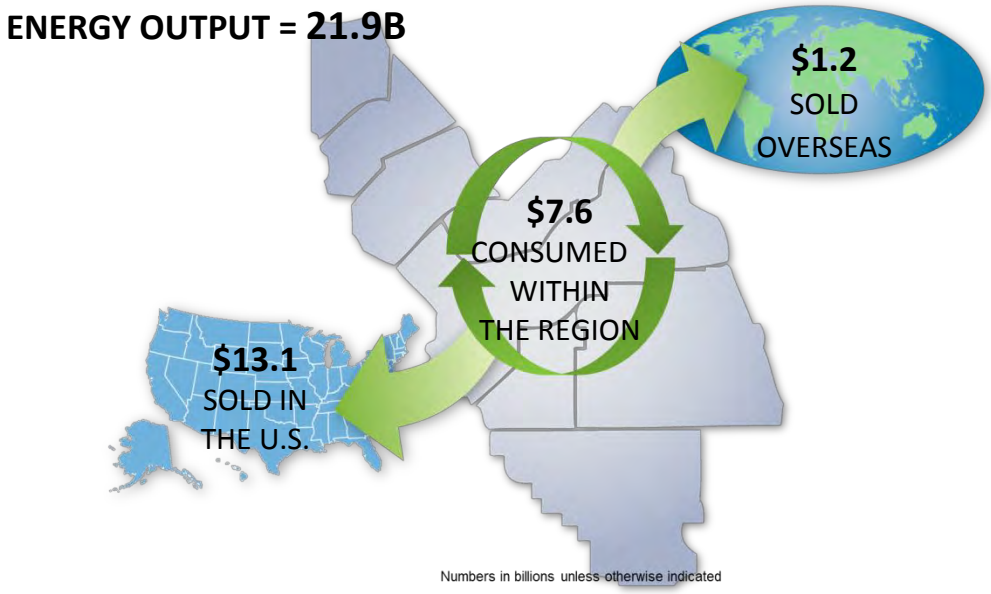
TRADE FLOW INDICATORS

This section presents information on the regional trade flows – outputs, inputs required to produce the Energy Cluster's outputs, and the gaps, or leakage – that represent potential economic development opportunities in terms of filling the leakage. This information is based an analysis of the IMPLAN data for 2010, the most recent year available.

- The Energy Cluster produced $21.9 billion in output in 2010, of which $7.6 billion was sold within the Valley. The Cluster exported $1.2 billion overseas and sold another $13.1 billion elsewhere in the U.S. (Figure 4.2-4).
- Of the amount sold within the Valley, $2.6 billion was in business-to-business transactions and $1.9 billion was to serve institutional or consumer demand, totaling $4.5 billion (Figure 4.2-5).
- The SJV economy consumed $13.1 billion in energy-related commodities, outside of internal demand from the energy cluster itself[35] (Figure 4.2-4). As noted above, approximately $4.5 billion of this need was obtained from regional energy firms, with the remaining $8.6 billion in demand met by imports. Of this amount, businesses imported $4.9 billion, while $3.7 billion represents direct consumer demand that was met by imports.
- The Energy Cluster required $14.7 billion in supplier inputs to produce its output, and obtained just over one-third of that from within the region. It imported the remainder – 63 percent – from outside the region (Figure 4.2-6).

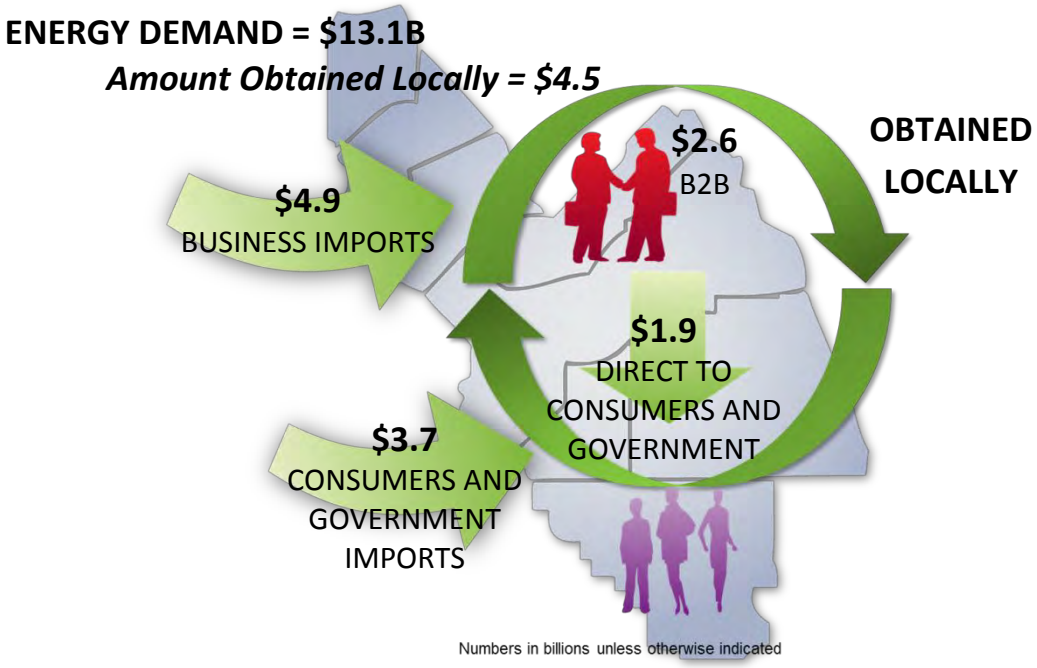
[35] The difference between the $7.6 billion in Figure 6.2-2 and this $4.5 billion is the internal demand from the energy cluster itself.

FIGURE 4.2-4
ENERGY CLUSTER TOTAL PRODUCTION VALUE AND MARKETS



Source: ADE, Inc.; data IMPLAN3 input-output model

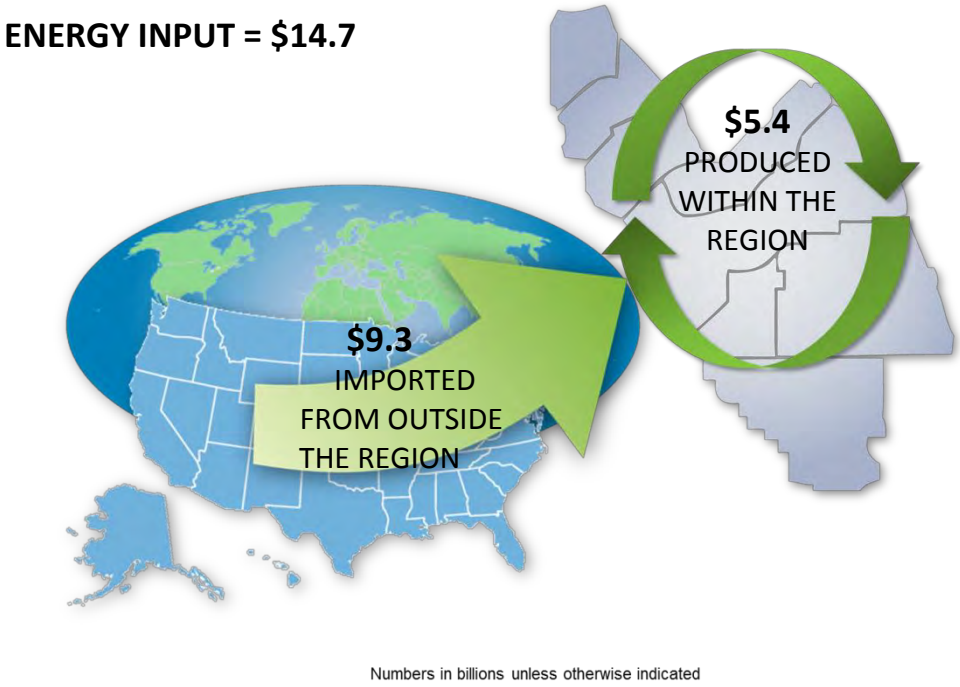
FIGURE 4.2-5
DEMAND FOR ENERGY AND SOURCES OF SUPPLY IN THE SAN JOAQUIN VALLEY



Source: ADE, Inc.; data IMPLAN3 input-output model

FIGURE 4.2-6

REQUIRED PRODUCTION INPUTS FOR THE ENERGY CLUSTER



Source: ADE, Inc.; data IMPLAN3 input-output model

Table 4.2-3 shows some of the industries where the largest amounts of imports occurred. This represents an economic development and jobs growth opportunity to replace some of this "leakage," which reached more than $9 billion, with new or expanded companies and services. Oilseed farming, the third largest category, is an input for renewable energy production (biofuels).

TABLE 4.2-3

CLUSTER SUPPLIER PURCHASES – TOTAL DEMAND AND LEAKAGE (SELECTED INDUSTRIES)

Description	Gross Commodity Demand	Regional Purchase Percentage	Regional Commodity Inputs	Commodity Leakage
Total Commodity Demand	$14,693,901,000	NA	$5,389,322,000	$9,304,579,000
Other energy cluster industries	$8,884,664,000	34.46%	$3,061,185,000	$5,823,479,000
Petrochemical manufacturing	$372,367,000	1.64%	$6,123,000	$366,244,000
Oilseed farming	$259,196,000	3.97%	$10,293,000	$248,902,000
Lessors of nonfinancial intangible assets	$291,933,000	16.50%	$48,156,000	$243,777,000
Wholesale trade businesses	$617,067,000	64.51%	$398,072,000	$218,995,000
Professional and technical services	$346,621,000	49.87%	$172,857,000	$173,764,000
Iron and steel mills and ferroalloy manufacturing	$158,163,000	7.07%	$11,174,000	$146,989,000
Management of companies and enterprises	$303,278,000	51.58%	$156,419,000	$146,859,000
Mining coal	$144,083,000	0.00%	$0	$144,084,000
Legal services	$141,180,000	46.64%	$65,850,000	$75,330,000
Transport by rail	$208,620,000	66.73%	$139,206,000	$69,414,000
Valve and fittings other than plumbing manufacturing	$66,505,000	3.44%	$2,289,000	$64,216,000
All other basic inorganic chemical manufacturing	$57,725,000	3.09%	$1,782,000	$55,943,000
Petroleum lubricating oil and grease manufacturing	$52,575,000	3.27%	$1,719,000	$50,855,000
Monetary authorities and depository credit intermediation	$149,974,000	67.95%	$101,909,000	$48,065,000
Coating, engraving, heat treating and allied activities	$49,534,000	3.94%	$1,953,000	$47,581,000
Semiconductor and related device manufacturing	$46,083,000	0.17%	$76,000	$46,007,000

Source: Applied Development Economics, Inc.; data from IMPLAN3, Input-Output Model

4.3 HEALTH AND WELLNESS CLUSTER

Healthcare has been one of the most resilient sectors of the national economy over the past decade and continues to show strong positive growth and career opportunities. Many of the fastest growing careers in the country and California are in health care sector. As the International Council for Economic Development noted, "The impressive expansion of the nation's healthcare sector has proven resistant to economic downturns. Over the last two business cycles, health care employment has grown by more than 30 percent nationally. Total non-farm employment, on the other hand, has increased by just 3 percent. Optimistic growth prospects are well supported by demographic trends."

According to the California Community Colleges Centers of Excellence (COE) *2012 Healthcare Sector Profile,* "The Healthcare sector plays a critical role in maintaining the health and well-being of a population as well as contributing to the economic development of communities in California." [36] To reflect new trends and opportunities in this sector, ADE has expanded the definition of the cluster to include wellness-related actitivies. The Health and Wellness Cluster is the second largest cluster in the Valley and was the source of most of the region's net job growth over the past decade (see Table 5.4-2).

In the Profile, COE listed some of the major drivers affecting the Cluster's future growth:

- The implementation of the Affordable Care Act (ACA), which will "create more demand for health care services and change the way services are delivered. This will expand the need for primary care workers – nurses and medical assistants as well as medical doctors and nurse practitioners."
- Technology innovations in health information, e-health and telemedicine, which are changing the delivery of health care services and requiring new skills in the allied health occupations.
- An aging healthcare workforce that may cause severe shortages upon retirement of this large cohort. For example, more than one-third of California's nursing workforce is older than 50 and over half are expected to retire in the next decade.[37]

Other major trends are shaping the future of the health care sector that will provide economic and employment opportunities for the Valley, as well as improved health outcomes for Valley residents and communities. With escalating health care costs and a health crisis related to an expanding population of those who are obese/overweight and unhealthy, there is a major healthcare sector focus at all levels on a food and disease prevention approach (especially chronic disease), as well as an increased interest in promoting healthy eating/lifestyles.[38] There is a growing policy intersect between health and food, - including development of local and regional food systems, and health and land use, community design and sustainability - to support active transportation (e.g., biking and walking) and better access to parks, safe neighborhoods, recreation, and cleaner air and water.

[36] *2012 Healthcare Sector Profile,* Doing What Matters for Jobs and the Economy, California Community Colleges, 2012
[37] Ibid
[38] "California Agriculture Economic Cluster," Presentation by USDA Rural Development California, January, 2012

The health care challenges of the Valley have been well documented over the years, including the poor health status of Valley residents and communities and limited access to health care services, especially in rural areas. Each of the Valley's counties has Medically Underserved Areas and Populations (MUA/P). Strong health disparities exist across racial and ethnic groups, and the Valley lags behind the state in many health indicators, including those related to obesity/overweight, poor air quality, and other conditions.[39] Many residents suffer from food insecurity and inadequate nutrition. There has been a chronic healthcare workforce shortage, and gaps in the scope and timeliness of information related to these gaps from an employer demand perspective, making it an ongoing challenge to meet these needs.

Improving the health status of the Valley has been high priority for local, regional, state and federal leaders including the Partnership; economic development, education and workforce development partners; employers; non-profits and community-based organizations; health care foundations; and the public. The Valley has tremendous assets and leadership dedicated to meeting the Valley's healthcare challanges and opportunities, including the presence on the Partnership's Board of public and private sector health leaders and participation of health partners on Partnership Work Groups.

Over the past several years, major efforts have focused on developing a "home-grown health-care workforce" for this medically underserved region, meeting critical workforce gaps such as for nursing professions and medical assistants, and developing institutional capacity at UC Merced, CSUs and the community colleges along with employers to educate and train a wide range of health professionals. This work includes both development and delivery of relevant education and training programs, and identification of "market intelligence" on employer needs to inform curriculum development and training in the classroom and workplace.

Two major regional demand-driven workforce initiatives are a platform for the Health and Wellness Cluster workforce development strategy. One is the Regional Industry Clusters of Opportunity Project (RICO), managed by the Fresno Regional Workforce Investment Board and sponsored by the Central California Workforce Collaborative (CCWC), the Partnership's co-lead for the Higher Education and Workforce Development Work Group. This project is a collaboration of the Valley's major health industry employers, WIBs, CCVEDC, and Central Valley Higher Education Consortium. The other is the C6 Project, which is focused on catalyzing education system change, improving student outcomes, partnering with employers, and meeting critical skills and occupational gaps in the health care sector.

The Health and Wellness Cluster is dynamic and interconnected with other clusters, which will also drive opportunity within this cluster. Hospitals, clinics and other healthcare institutions have been developing new facilities to serve the Valley's fast-growing growing and diverse population, which is having a positive impact on the construction sector. From an infrastructure standpoint, the San Joaquin Valley Broadband Consortium (a Partnership initiative managed by OCED) is developing a regional broadband strategy to improve regional broadband infrastructure. This infrastructure is an enabling technology for

[39] *California Partnership for the San Joaquin Valley 2010-2011 Report.*

the adoption and deployment of electronic health information technologies and e-health and telemedicine and will expand broadband access and improved health services, especially to rural and other underserved communities throughout the Valley. Health care systems are making major investments in this infrastructure and technology, which will generate many new jobs and require development of new workforce skills.

As an innovation asset, UC Merced's new Health Sciences Research Institute (HSRI) was created help provide education and research to advance the understanding of health, health promotion, and disease prevention and support community partners in policy, practice and outcomes. HSRI is developing a public health program and a biomedical sciences research program to support new and emerging faculty to conduct world-class research.

Within the context of the trends described above, and the economic analsyis generated for this project, partners and participants in the project's three Health and Wellness Cluster meetings provided a great depth of information, expertise and recommended actions to develop and advance the Health and Wellness Cluster action plan. This information is provided in a companion resource document but some key assets and next steps are described for moving forward.

The Partnership's Health and Human Services Work Group has not been fully active for more than two years due to the lack of available funding. The Cluster Action Plan provides an opportunity to revitalize the Work Group based on new cluster opportunities and leveraging the assets described above and in the project's resource materials. Recommendations are provided in Chapter 7.

The next section describes the components of the Health and Wellness Cluster; key employment indicators by cluster component and by geographic distribution; and trade flow indicators showing output of the cluster, inputs required for this output, regional demand for health and wellness products and services, and gaps in meeting regional demand that are an economic development target opportunity. Additional information is provided on employment indicators by county by cluster component, due to the size and importance of the cluster.

HEALTH AND WELLNESS CLUSTER COMPONENTS

The Health and Wellness Cluster has five key components. As noted at the beginning of this section, the cluster definition has been expanded to include wellness. The wellness-related component represents a start in defining the NAICS codes related to the cluster and further research is needed, because NAICS for certain health-related activities such as fitness are included in the NAICS codes for fitness and recreational sports centers (under the leisure and hospitality sector) and are difficult to capture.

Accordingly, this cluster component is undercounted. See Appendix B for a listing of the cluster industries by NAICS codes. The five cluster components are:

Cluster Components	Industry Types
Health Care Delivery	Health practitioners (doctors, dentists, other health practitioners), hospitals, home health care providers, outpatient centers, nursing care facilities, and residential care facilities, including for continuing care retirement, mental health and substance abuse and residential rehabilitation services
Medical Device Manufacturing	Surgical and medical instrument, surgical appliance and supplies, dental equipment and supplies, dental laboratories, and ophthalmic goods
Pharmaceutical Manufacturing	Medicinal and botanical, pharmaceutical preparation, biological product
Supplies and Services	Medical, dental and hospital equipment and supplies merchant wholesalers, other professional equipment and supplies merchant wholesalers, drugs and druggists' sundries merchant wholesalers, and voluntary health organizations
Wellness and Fitness	Retail trade such as pharmacies and drug stores, optical good stores, food (health) supplement stores, home health equipment rental, offices of all other miscellaneous health practitioners, all other miscellaneous ambulatory health care services, and diet and weight reducing centers

Source: Applied Development Economics

EMPLOYMENT INDICATORS

This section presents a summary of key employment trends in the Health and Wellness Cluster. While most industry clusters are export-oriented, producing products for a larger market outside the local or regional area, many aspects of this cluster are inherently local. Services are generally provided to the local population, except in cases where highly specialized expertise is available, in which case patients may be attracted from outside the region. The component that is most export-oriented relates to medical devices manufacturing.

The Health and Wellness Cluster is a growth cluster across almost all cluster components. Cluster employment accounted for approximately 10 percent of the total regional employment, but 54 percent of the job growth that occurred between 2001 and 2010. Also, as described earlier in this section, the cluster has a role in other clusters such as agriculture and public sector construction and those jobs and economic output are captured in these other clusters to the degree possible.

Table 4.3-1 shows employment across the cluster's four components from 2001-2010, including employment changes and rate of growth, concentration (compared to the state), and shift-share (a ratio derived from the region's rate of growth compared to the state). Figure 4.3-1 is a graphical illustration of these trends. The following summarizes key findings:

The Health and Wellness cluster accounted for over 128,000 jobs in the Central Valley region. The vast majority of these jobs were in the health care delivery sectors, with over 114,500 jobs.

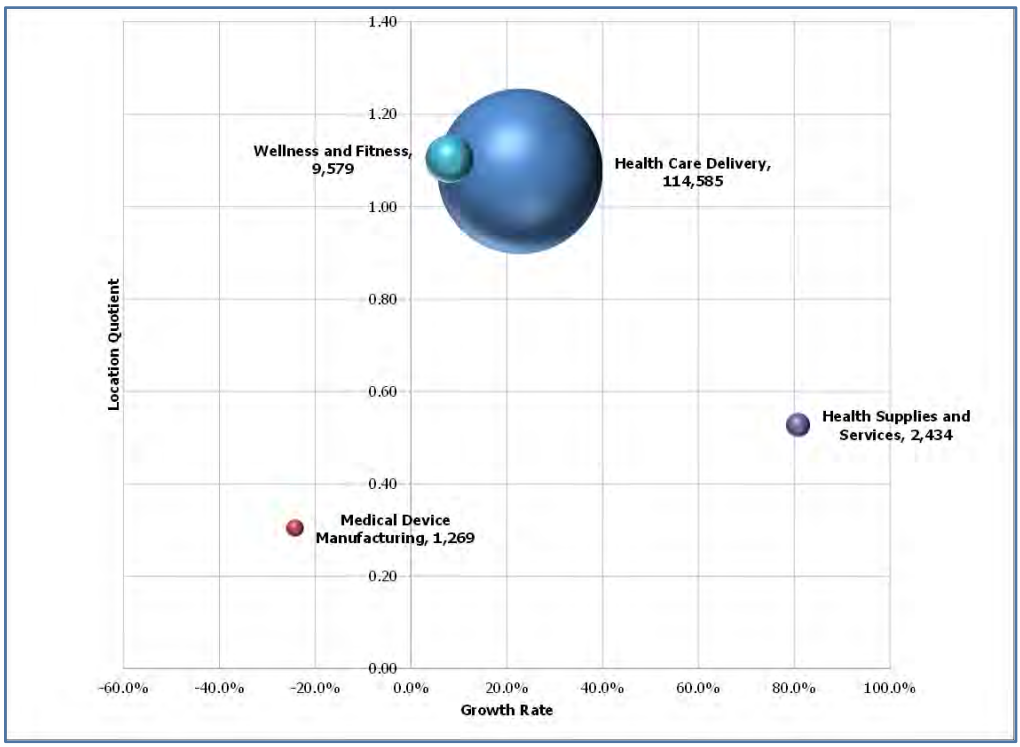
- During this period, the total job growth was nearly 22,700, with health care delivery accounting for about 21,100 of those jobs.
- As a whole, the cluster grew by 21.5 percent between 2001 and 2010, and grew slightly faster than the cluster did across the rest of California.
- The faster growing cluster components were pharmaceutical manufacturing (also the smallest component), and supplies and services. These two sectors also had a stronger rate of growth compared to the state, demonstrating comparative advantage.
- Consistent with general manufacturing trends, jobs were lost in the medical manufacturing component.
- The concentration of employment in the cluster was about average. The health care delivery, and wellness and fitness groups had employment concentrations that were slightly higher than the statewide average, while all of the other groups were significantly lower. This indicates gaps to be filled.

TABLE 4.3-1
CLUSTER EMPLOYMENT INDICATORS

Cluster Component	Employment 2001	Employment 2010	Employment Change 2001 to 2010	Percentage Change 2001 to 2010	Location Quotient 2010	Shift-share
Health Care - Delivery	93,477	114,585	21,108	22.6%	1.08	1.50%
Medical Device Manufacturing	1,675	1,269	-406	-24.3%	0.30	-22.26%
Pharmaceutical	127	311	184	145.1%	0.09	134.86%
Supplies and Services	1,347	2,434	1,087	80.7%	0.53	68.58%
Wellness and Fitness	8,871	9,579	708	8.0%	1.10	5.93%
Health and Wellness Cluster Total	105,497	128,178	22,681	21.5%	1.01	3.49%

Source: Applied Development Economics

FIGURE 4.3-1
EMPLOYMENT BY CLUSTER COMPONENT



Source: ADE, Inc., Data from IMPLAN/ES 202 County Employment Database

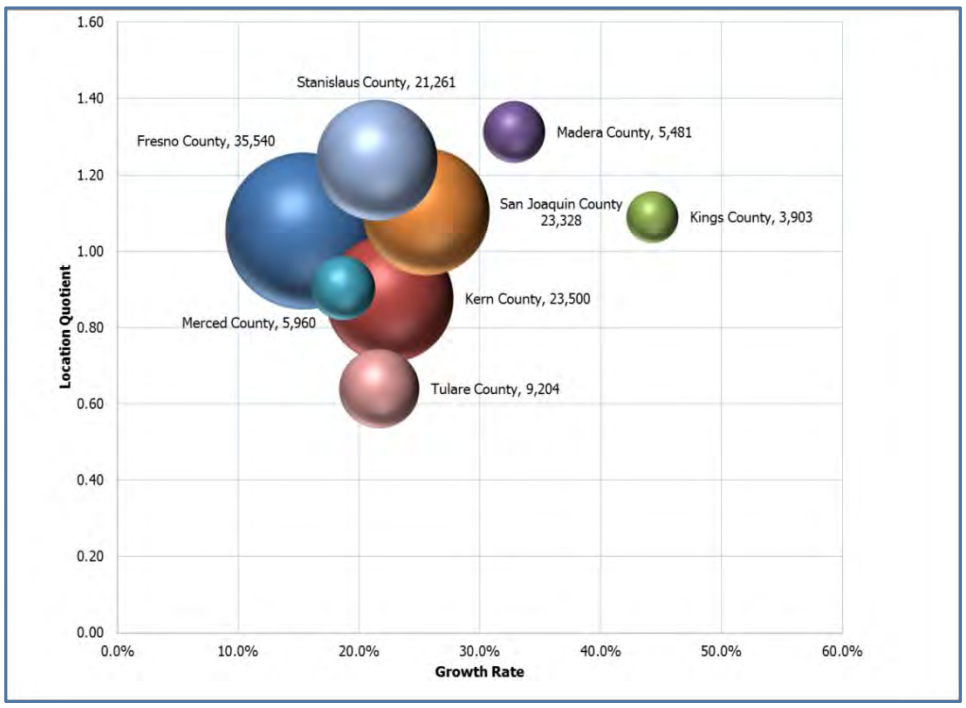
GEOGRAPHIC CONSIDERATIONS

Figure 4.3-2 illustrates employment growth trends and geographic concentration for each county in the Valley for the overall cluster. Figures 4.3-3 through 4.3-7 show these trends and the concentration for each county, for each cluster component. The key findings are summarized as follows:

- Fresno County had the largest employment in the cluster, at about 35,500 jobs, followed by San Joaquin and Kern Counties at about 23,000 jobs. However, viewing the location quotients, Kern County is actually underrepresented in comparison to its overall employment base, as are Merced and Tulare Counties.
- The health care delivery figures were similar to the overall cluster since that component comprises 90 percent of the cluster (Figure 4.3-2). Kings County had the fastest rate of growth due to the opening of new medical facilities by Adventist Health, a major employer in the region.
- Medical device manufacturing was concentrated in Fresno and Kern counties but actually lost employment in both those areas between 2001 and 2010. Employment in this cluster component grew in Stanislaus and Merced Counties.
- Pharmaceutical employment was concentrated in Stanislaus County, which also experienced significant growth during the decade, along with Tulare, Merced and Fresno Counties.

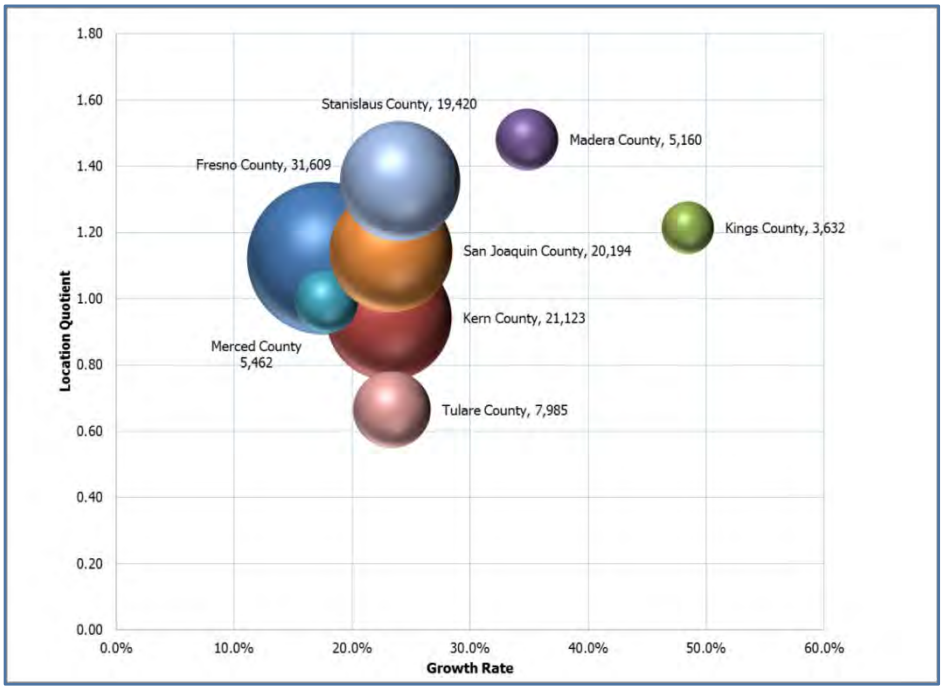
- Health care supplies and services experienced strong growth in San Joaquin County but almost none in the other counties (Figure 6.3-4). This likely reflects the County's advantage for wholesaler and distribution location and proximity to the Bay Area and Sacramento regions.
- Finally, wellness and fitness employment is more evenly spread among the counties and nearly all are at or above statewide concentration levels (Figure 6.3-5). All of the counties except San Joaquin and Stanislaus saw growth in this cluster component.

FIGURE 4.3-2
CLUSTER EMPLOYMENT BY COUNTY



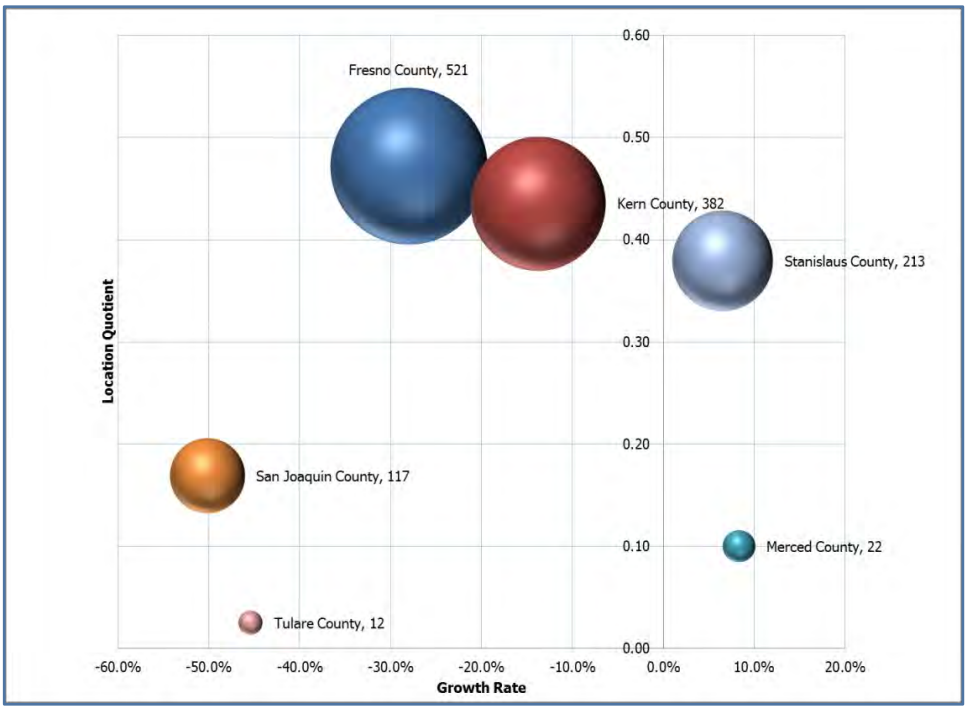
Source: ADE, Inc., Data from IMPLAN/ES 202 County Employment Database

FIGURE 4.3-3
HEALTH CARE DELIVERY EMPLOYMENT BY COUNTY



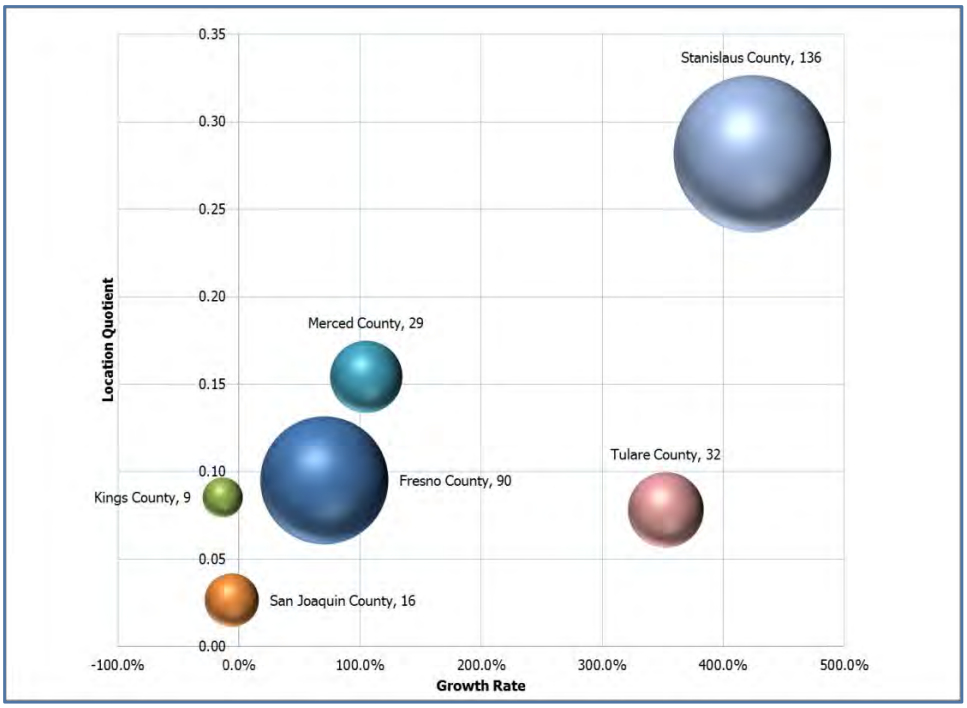
Source: ADE, Inc., Data from IMPLAN/ES 202 County Employment Database

FIGURE 4.3-4
MEDICAL DEVICE MANUFACTURING EMPLOYMENT BY COUNTY, 2001-2010



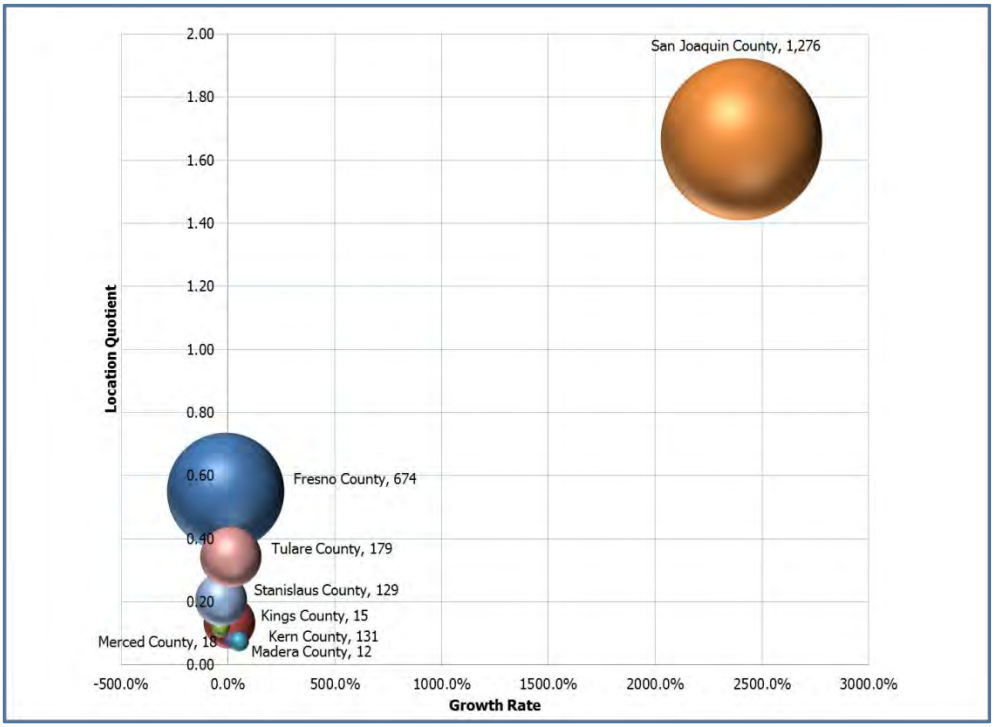
Source: ADE, Inc., Data from IMPLAN/ES 202 County Employment Database

FIGURE 4.3-5
PHARMACEUTICALS EMPLOYMENT BY COUNTY, 2001-2010



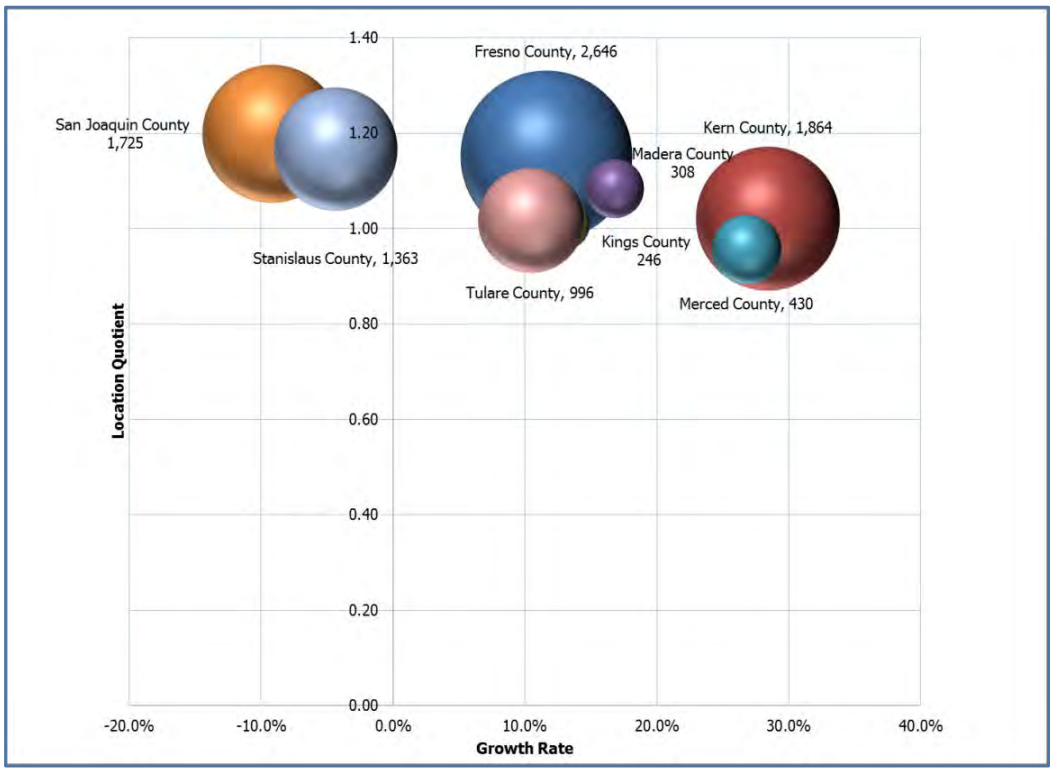
SOURCE: ADE, INC., DATA FROM IMPLAN/ES 202 COUNTY EMPLOYMENT DATABASE

FIGURE 4.3-6
HEALTH SUPPLIES AND SERVICES EMPLOYMENT BY COUNTY, 2001-2010



Source: ADE, Inc., Data from IMPLAN/ES 202 County Employment Database

FIGURE 4.3-7
WELLNESS AND FITNESS EMPLOYMENT BY COUNTY



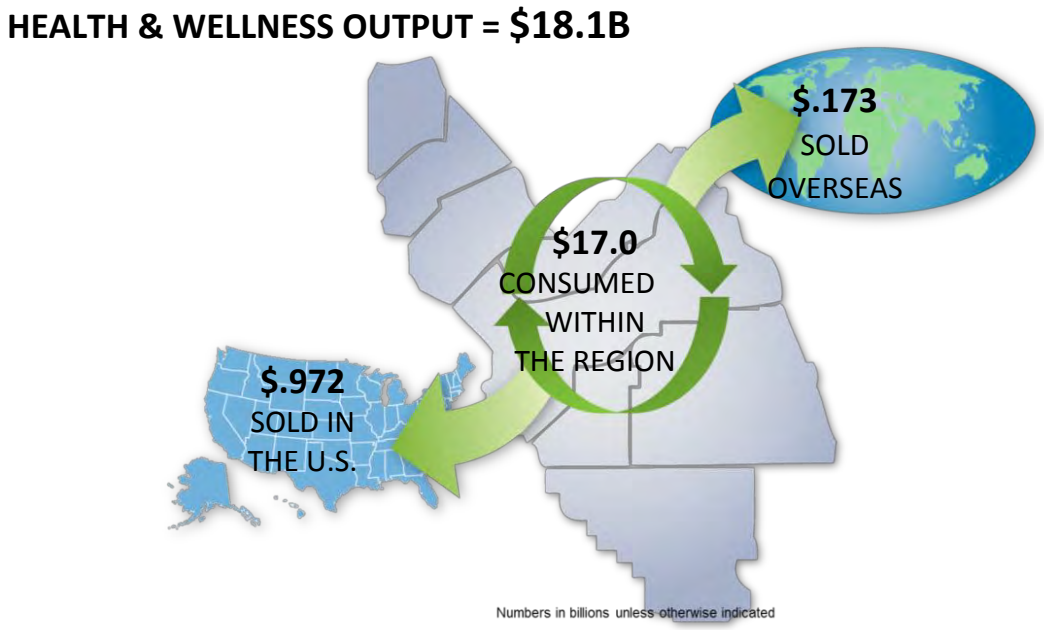
Source: ADE, Inc., Data from IMPLAN/ES 202 County Employment Database

TRADE FLOW INDICATORS

This section presents information on regional trade flows – cluster outputs, inputs required to produce the Health and Wellness Cluster's outputs, and the gaps, or leakage – that represent potential economic development opportunities for filling the leakge. This information is based on analysis of the IMPLAN data for 2010, the most recent year data is available.

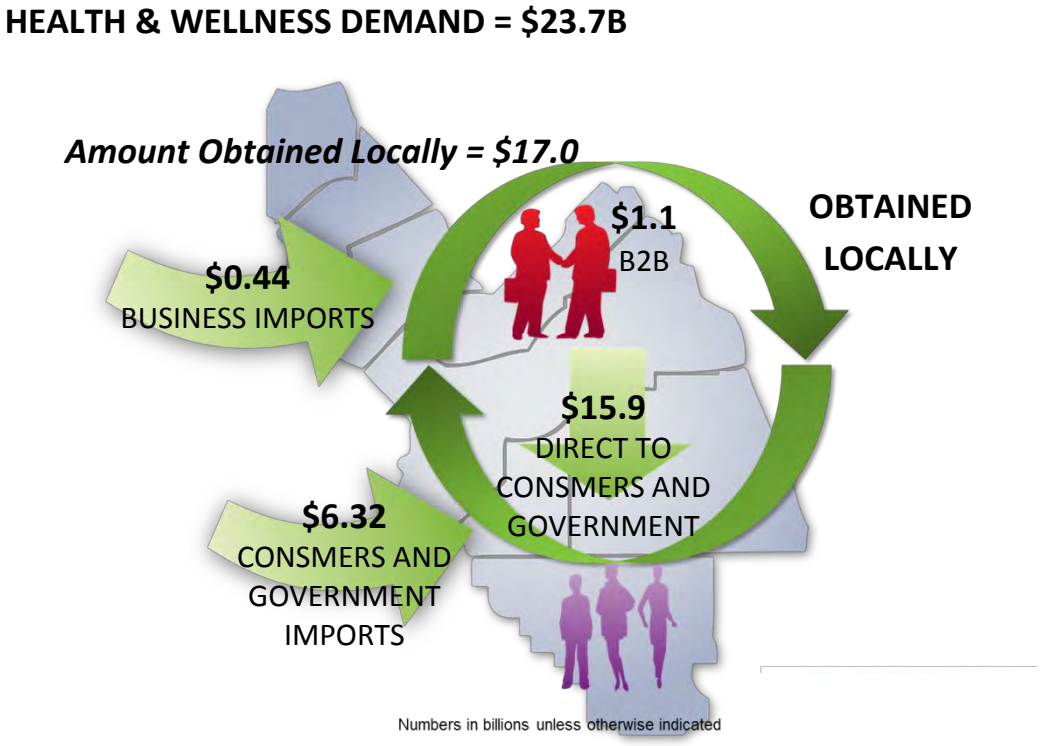
- The Valley's cluster output in terms of services and related supplier sectors totaled $18.1 billion in 2010 (Figure 4.3-8). About $1 billion in services was estimated to be provided to customers outside the Valley and a small amount ($173 million) was sold to foreign markets. Over 90 percent of health care services were consumed locally.
- Total regional demand for health care services by non-cluster businesses, institutions including government, and households was estimated at $23.7 billion, however, so about 25 percent of this demand was satisfied by providers outside the Valley (Figure 4.3-9).
- The Health and Wellness Cluster needed $6.8 billion in supplier inputs and obtained about $4.0 billion from local providers (Figure 4.3-10). The remaining $2.8 billion, which includes medical equipment and supplies, was purchased from outside the region. A partial list of these outside imports is shown in Table 4.3-2.

FIGURE 4.3-8
VALUE OF HEALTH AND WELLNESS SERVICES PRODUCED IN THE SAN JOAQUIN VALLEY



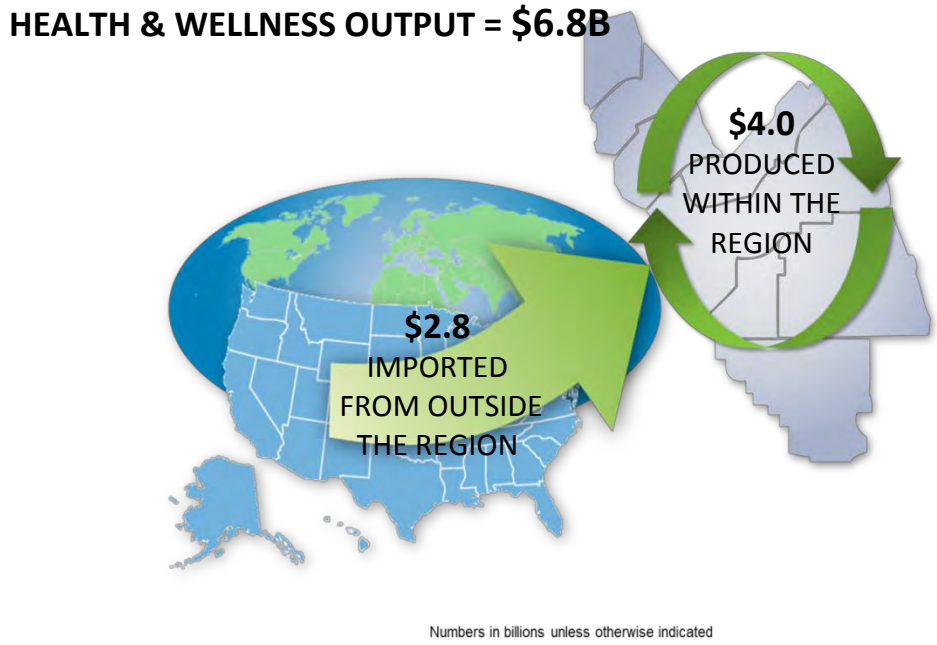
Source: ADE, Inc.; data IMPLAN3 input-output model

FIGURE 4.3-9
MARKET FOR HEALTH AND WELLNESS SERVICES IN THE SAN JOAQUIN VALLEY



Source: ADE, Inc.; data IMPLAN3 input-output model

FIGURE 4.3-10
PRODUCTION INPUTS REQUIRED FOR HEALTH AND WELLNESS CLUSTER



Source: ADE, Inc.; data IMPLAN3 input-output model

Table 4.3-2 shows total commodity leakage (demand for goods and services) outside the Valley from business-to-business transactions for Health and Wellness Cluster inputs and selected commodities that could be targets for economic development. Potential targets could include additional health and wellness- related services, manufacturing, and research, legal and professional services. Two specific areas for additional focus where identified during the project cluster meetings. Hospitals often go outside the Valley for specialized lab services, and are an opportunity to develop this specialized experise in the Valley if a shared need can be identified. Economic development professionals noted that they have been constrained in expanding and attracting new firms in the pharmaceutical area, due to significant workforce skills gaps. Increased collaboration between employers, EDCs, WIBs and education partners will help to identify and address these gaps and would be a good focus for the cluster action plan.

TABLE 4.3-2

CLUSTER SUPPLIER PURCHASES – HEALTH AND WELLNESS GROWTH OPPORTUNITIES

Description	Gross Commodity Demand	Regional Purchase Percentage	Regional Commodity Inputs	Commodity Leakage
Total Cluster Commodity Demand	$6,770,149,000	NA	$3,976,902,000	$2,793,247,000
Other health and wellness establishments	$1,230,145,000	71.6%	$880,196,000	$349,949,000
Real estate establishments	$968,477,000	72.8%	$705,102,000	$263,375,000
Management of companies and enterprises	$470,963,000	49.1%	$231,230,000	$239,733,000
Wholesale trade businesses	$483,527,000	63.8%	$308,315,000	$175,213,000
Insurance carriers	$294,672,000	48.8%	$143,852,000	$150,821,000
Management, scientific, and technical consulting services	$214,261,000	34.1%	$72,992,920	$141,268,000
Other basic organic chemical manufacturing	$118,753,000	2.8%	$3,315,000	$115,438,000
Scientific research and development services	$119,152,000	19.2%	$22,900,000	$96,252,000
Other plastics product manufacturing	$69,605,000	6.4%	$4,474,000	$65,131,000
Legal services	$106,629,000	46.9%	$50,002,000	$56,623,600
Advertising and related services	$156,349,000	65.2%	$101,921,000	$54,428,000
* Not an industry (Used and secondhand goods)	$54,025,000	0.0%	$0	$54,025,000
Plastics material and resin manufacturing	$52,437,000	1.0%	$516,,000	$51,921,000
Automotive equipment rental and leasing	$64,326,000	35.6%	$22,922,000	$41,404,000
Telecommunications	$144,876,000	73.2%	$106,054,733	$38,821,000
Petroleum refineries	$45,154,000	14.6%	$6,600,,000	$38,554,000
Industrial gas manufacturing	$37,963,000	1.5%	$562,000	$37,400,000
Animal (except poultry) slaughtering, rendering, and processing	$50,964,000	32.9%	$16,759,000	$34,205,000
Electric power generation, transmission, and distribution	$128,938,000	75.9%	$97,814,000	$31,124,000

Source: ADE, Inc.; data from IMPLAN3 input-output **model.**

4.4 LOGISTICS CLUSTER

Logistics services and facilities – including transportation, warehousing and distribution to support effective goods movement into, out of, and within the San Joaquin Valley - are a critical foundation to key industries in the region, particularly the agriculture value chain, and comprise an industry cluster in their own right. Logistics is a targeted cluster for all counties in the region and for the CCVEDC.

In 2006, *Go California,* California's goods movement plan, identified the San Joaquin Valley as part of the state's four "Port to Border" regional corridors.[40] Key goods movement corridors form the backbone of the region's economy, including North-South and East-West highway corridors, Class 1 rail facilities, air cargo facilities and the Port of Stockton.[41] Congested and deteriorating infrastructure is a major challenge across the Valley.

The Valley's Logistics Cluster is impacted by wide-reaching trends. According to an analysis prepared for the development of the *San Joaquin Valley Interregional Goods Movement Plan*: "The Valley is experiencing the demands of the modern global logistics system across a range of goods, from raw agricultural materials to consumer products. The critical role that the San Joaquin Valley plays in California and the nation's food supply will continue to require an effective goods movement system to distribute and export products quickly and efficiently. The growing regional population…will require increased attention to safe and reliable movement of goods consistent with competing needs for infrastructure and greater sensitivity to emissions and congestion."[42]

Transportation planning in the Valley is led by the region's eight Regional Transportation Planning Agencies (RTPAs – federally designated Metropolitan Planning Organizations – MPOs). They created the San Joaquin Valley Policy Council in 2006 to establish a system for regional coordination of plans, programs, traffic and emissions modeling, transportation planning, air quality planning and consistency in analysis and forecasting. The Regional Policy Council works closely in these efforts with the San Joaquin Valley Air Pollution Control District, Caltrans, the California Air Resources Board, the Federal Highway Administration (FHA) and other partners. Planning efforts guide the investment of billions of dollars in transportation infrastructure investments over multiple years. A new aspect of this coordination effort is preparation of integrated Regional Transportation Plans (RTPs) to meet regional greenhouse gas emissions reduction targets.

The Regional Policy Council has several efforts underway to enhance regional transportation planning, mobility, goods movement and air quality. These include: coordination with Caltrans on development of a Corridor Enhancement Master Plan, Business Plan and project funding for the Highway 99 Corridor, leveraging 2006 State Infrastructure Bonds and other funds for much needed transportation and safety

[40] *Route 99 Corridor Business Plan, Enhancement Master Plan*, Caltrans District 6 and 10, 2009, p. v.
[41] *"The Importance of the San Joaquin Valley to California, the Nation, and the World,"* Cambridge Systematics, 2012.
[42] *San Joaquin Valley Goods Movement Plan; Task 1 Report: Existing Conditions Assessment Technical Memorandum,* Cambridge Systematics, Inc. et al, January 2012, p. 4-16.

improvements; participation in several of the Partnership's New Valley Work Groups and advocacy for the funding of the California High Speed Rail; and Sustainable Communities planning and Regional Blueprint planning integration in large and small communities across the Valley.

A major two-year collaborative planning effort is the preparation of the *San Joaquin Valley Interregional Goods Movement Plan* referenced on the previous page, initiated by the Regional Policy Council in May, 2011, which in addition to the partners cited above includes stakeholders such as the private trucking industry, ports, railroads and major goods-movement industries. This project is the focal point for regional planning and action on transportation infrastructure and goods movement. It has provided several analyses of economic and demographics trends and projections related to goods movement, truck commodity flows and industry profiles, commodity growth, and impacts of freight movement (see http://www.sjvcogs.org/goods.html for additional information).

Some key highlights on issues and drivers identified by the planning process that affect the Logistics Cluster are summarized below. These analyses also were the basis of the goods movement issues, challenges and opportunities presented at the Regional Economic Summit, for which recommended state and regional actions were developed.

- In 2010, more than 44 percent of the region's jobs (564,000 jobs) were associated with goods-movement dependent industries; more than one third were related to farming/agriculture, while wholesale and retail trade accounted for nearly as many workers. Manufacturing, including food manufacturing and processing, comprised nearly 20 percent, and transportation/utilities and construction were about 8 percent each. [43]
- The transportation sector, tied largely to the region's growth in international trade and agricultural production, is expected to have a job increase of more than 90 percent by 2040.[44] There will be shifts in commodities and exports which need to be taken into account.
- The Valley's projected population growth also will result in increased activity in certain goods movement-dependent industries, such as construction, retail and wholesale trade.[45]
- It is estimated that nearly 500 million tons of goods moved within the San Joaquin Valley in 2007. This volume is projected to grow 76 percent by 2040.[46]
- Truck traffic accounts for more than 90 percent of goods movement in the Valley and this proportion is anticipated to increase further in the future. Rail service provides most of the rest of good movement in the region, with air and water cargo at less than one percent combined. [47]

[43] Ibid., p. 4.5.
[44] *San Joaquin Valley Interregional Goods Movement Plan; Task 5 Report: Commodity Growth,* Cambridge Systematics, Inc. et al, June 2012, p 1-4.
[45] Task I Report, p. 2-1.
[46] Task 5 Report, p 1-1.
[47] *San Joaquin Valley Interregional Goods Movement Plan, Task 4 Report: Commodity Flow Profile*, Cambridge Systematics, Inc. et al, March 2012, p. 1-1.

- Goods movement activities contribute to the Valley's air quality concerns, and other community and environmental issues such as health, safety and noise are exacerbated by the movement of freight. Community and environmental impacts are projected to grow along with growing freight volumes, unless measures are taken.[48]

The analyses note that within the Valley, there will need to be a continual fine-tuning of logistics chains and transportation practices, among other strategies, for the cluster to remain competitive in the global economy. Also of note is the opportunity to support the mobility needs of the Logistics Cluster through planned public sector infrastructure investments in the region. An analysis prepared for the Central California Workforce Collaborative documented an estimated $16 billion in planned transportatation-related investments for the Valley and the Central/Eastern Sierra from 2010-2020 (see discussion in section 4.8.)

LOGSTICS CLUSTER COMPONENTS

The Valley's Logistic Cluster is closely integrated with other clusters and is composed of the following cluster components and industry types; (see Appendix B for a listing of the industries by NAICS codes). It should be noted that a large segment of logistics employment is associated with the agriculture value chain and was included in the chapter earlier as part of the distribution component of agriculture.

CLUSTER COMPONENTS	INDUSTRY TYPES
Air, Rail and Water Transportation	Passenger and freight air, rail and water transportation
Truck Transportation	General and specialized freight trucking, local and long-haul
Transit	Mixed mode transit, commuter rail systems, interurban and rural bus transportation, school and employee bus transportatioin, taxi service, charter bus and other urban transit
Freight and Warehousing	Packing and crating, courier and express delivery services, general and refrigerated warehaousing and storage, freight transportation arrangement, farm and othe product warehousing and storage
Other Transportation Services	Motor vehicle towing, support activities, packaging and labeling
Related Manufacturing Industries	Heavy duty truck, railcar, and boat building and repair

[48] *San Joaquin Valley Interregional Goods Movement Plan, Task 6, The Community, Environmental and Economic Impacts of Frieght Movement*, Cambridge Systematics, Inc. et al, March 2012, p. 1-1.

EMPLOYMENT INDICATORS

This section presents a summary of key employment trends in the portion of the Logistics Cluster not associated with other clusters. This cluster is a growth cluster for the Valley, showing strong growth across some of the cluster components. Table 4.4-1 below shows employment across the cluster's seven components from 2001-2010, including employment changes and rate of growth, concentration (compared to the state), and shift-share (a ratio derived from the region's rate of growth compared to that of the state). Figure 4.4-1 is a graphic illustration of these trends:

- The Logistics Cluster had nearly 33,200 jobs in 2010; total jobs grew by nearly 4,400 between 2001 and 2010 – 15.2 percent.
- Cluster employment was 2.6 percent of total regional jobs, but accounted for 10.5 percent of the job growth that occurred between 2001 and 2010.
- The cluster growth rate of 15.2 percent was faster than the statewide average (shift-share: +24.9%) for the time period. The concentration of employment in the cluster was slightly above state average (location quotient: 1.04).
- The largest cluster component was truck transport, which added a small number of jobs. Transit added less than 50 jobs, likely reflecting the decrease in funding for transit operations due to the economic downturn. The air, rail and water transport showed small levels of employment related to rail. There is a focus on trying to develop more short-haul rail capacity in the Valley, which could increase employment over time.
- The cluster components with the highest levels of job growth were freight and warehousing and other transportation services. Consistent with overall manufacturing, employment in logistics-related manufacturing declined, although this component was not very large.

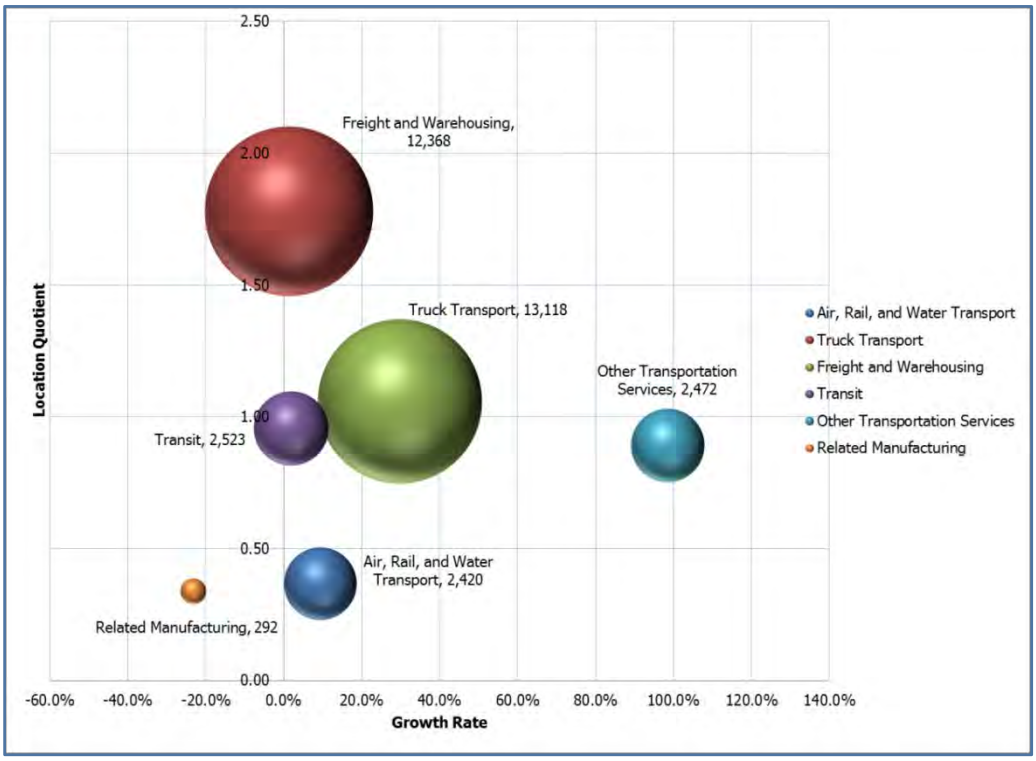
TABLE 4.4-1

LOGISTICS CLUSTER EMPLOYMENT INDICATORS, SAN JOAQUIN VALLEY

Cluster Component	Employment 2001	Employment 2010	Employment Change 2001 to 2010	Percentage Change 2001 to 2010	Location Quotient 2010	Shift-share
Air, Rail, and Water Transport	2,214	2,420	207	9.3%	0.37	32.60%
Truck Transport	12,952	13,118	166	1.3%	1.78	13.64%
Freight and Warehousing	9,535	12,368	2,833	29.7%	1.06	39.26%
Transit	2,477	2,523	46	1.8%	0.96	-2.62%
Other Transportation Services	1,246	2,472	1,226	98.4%	0.89	62.76%
Related Manufacturing	380	292	-88	-23.3%	0.34	-24.06%
Logistics Cluster Total	28,803	33,192	4,389	15.2%	1.04	24.92%

Source: Applied Development Economics

FIGURE 4.4-1
LOGISTICS BY COMPONENT



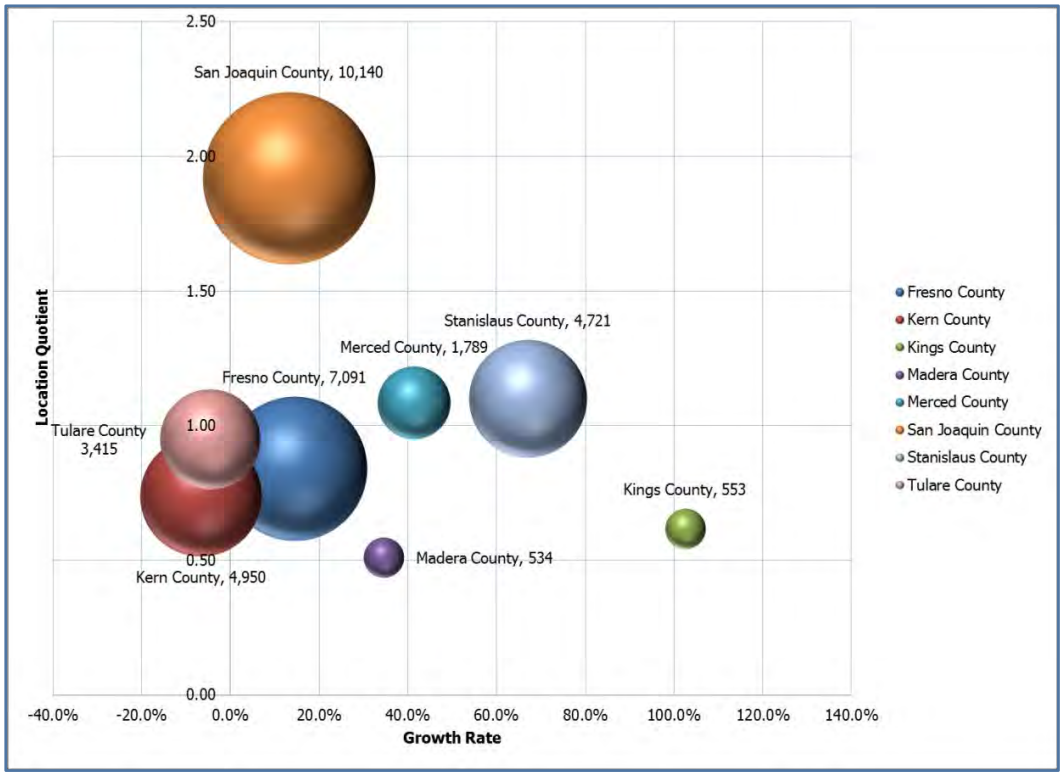
Source: ADE, Inc.; data from IMPLAN CEW/ES202 county employment database

GEOGRAPHIC CONSIDERATIONS

Figure 4.4-2 illustrates employment growth trends and geographic concentration of the Logistics Cluster for each county in the Valley; highlights are summarized as follows:

- The Logistics Cluster was highly concentrated in San Joaquin County, with over 10,000 jobs – 30 percent of total cluster employment and an employment concentration nearly twice the state average (location quotient: 1.92). Other large groupings exist in Fresno (21 percent), Kern (15 percent), Stanislaus (14 percent) and Tulare (10 percent) counties, each of which had more than 3,400 jobs.
- All counties, except for Kern and Tulare, had job growth between 2001 and 2010. Although Kings County had one of the smallest levels of employment, its rate of job growth was the highest. Stanislaus County also had a strong rate of growth.
- Merced and Stanislaus counties are the only other counties in the region with an above average employment concentration in the Logistics cluster.

FIGURE 4.4-2
LOGISTICS CLUSTER EMPLOYMENT BY COUNTY

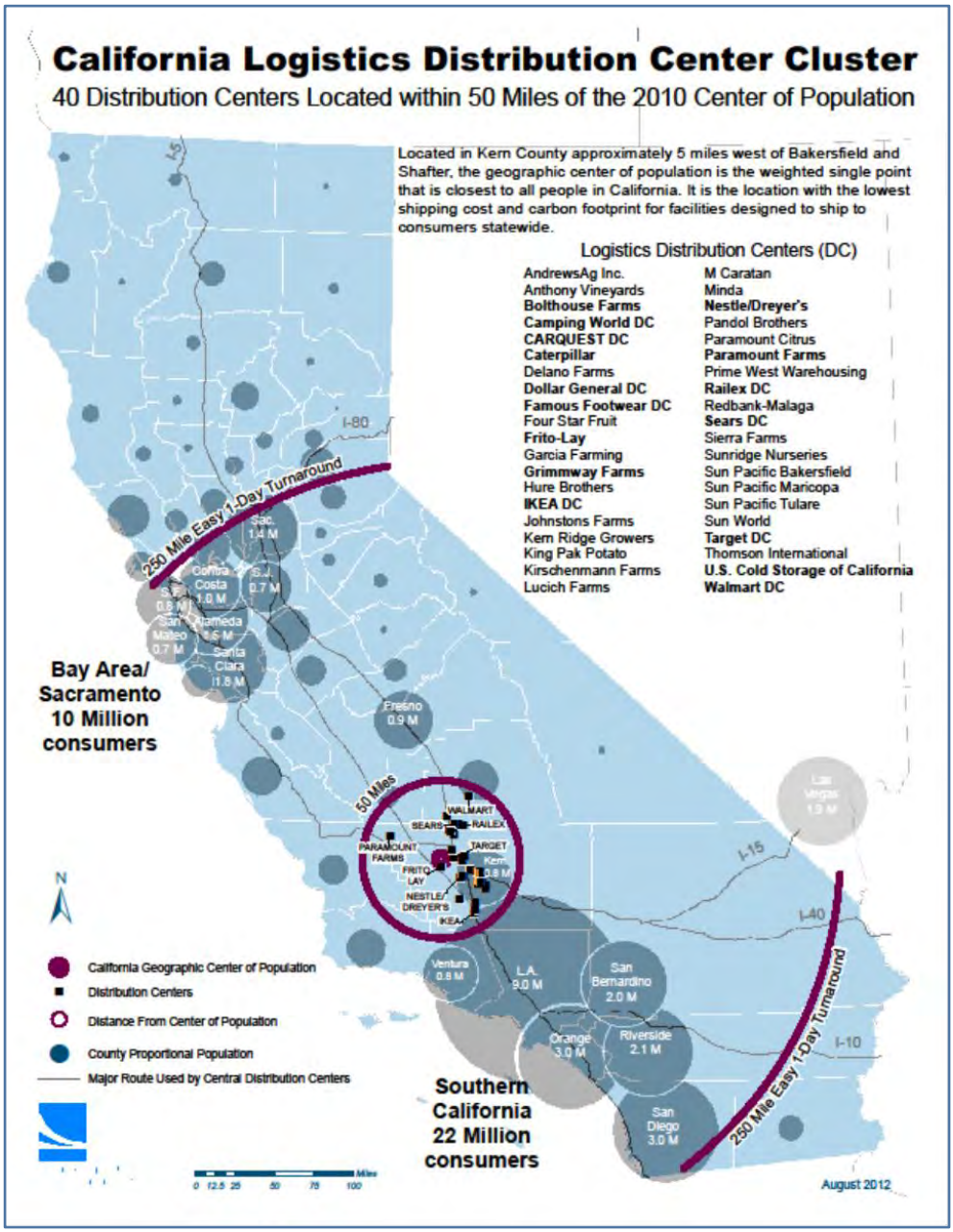


Source: ADE, Inc.; data from IMPLAN CEW/ES202 county employment database

As noted earlier in this section, efficient freight transportation is critical to the economic health of the Valley, for agriculture, oil and other minerals, manufacturing, and all other industries using and shipping supplies and commodities. The Valley also is becoming a prominent location for regional distribution centers of consumer products, providing services to coastal population centers as well as a growing internal population. Most freight transportation is by trucking.

The map on the following page shows the locational advantages of the Valley in terms of proximity to growing consumer markets throughout California. The Kern Council of Governments (Kern COG) prepared the map as part of its analysis of needed future transportation improvements. It shows the location of 40 logistics distribution centers located in Kern County, including farming and food processing establishments that have shipping and distribution operations, and facilities for major national and internationals retailers. Every ten years, the U.S. Census Bureau calculates California's geographic center of population; it is a weighted center of population that represents the location closest to everyone in the state. For 2010, the center is located in Kern County, approximately five miles west of Bakersfield and Shafter.

From this geographic center, logistics distribution facilities in the southern end of the Valley have access to 22 million Southern California consumers, and to 10 million Bay Area/Sacramento consumers. As shown in Figure 4.2-2, the logistics cluster also is strong in San Joaquin County and reaches additional Northern California and Nevada consumers (as well as other regions and countries). The Kern COG and the Kern EDC have identified the benefit of increasing rail service by moving more truckloads to rail service, and the goods most suited for transfer to rail. These and other analyses are being integrated with the San Joaquin Valley Interregional Goods Movement Plan.



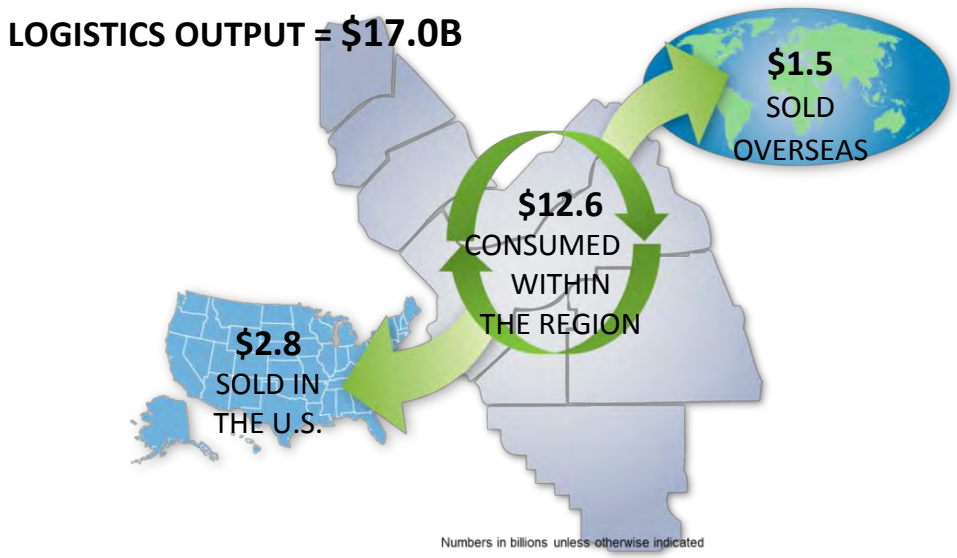
TRADE FLOW INDICATORS

This section presents information on regional trade flows – outputs, inputs required to produce the Logistics Cluster's outputs, and the gaps, or leakge – that represent potential economic development opportunities for filling the leakage. This information is based on an analysis of the IMPLAN data for 2010, the most recent year data is available.

- Logistics companies in the Valley sold $17.0 billion in services in 2010, of which $12.6 billion was sold within the Valley (see Figure 4.4-3). In addition, the cluster businesses provided $1.5 billion in services to overseas customers and sold another $2.8 billion to customers elsewhere in the U.S. Of the amount sold within the Valley, $7.8 billion was in business-to-business transactions and $4.8 represented institutional or consumer demand.
- The Logistics Cluster needed $7.0 billion in supplier inputs; it obtained about half of that from within the region and imported the other half (Figure 4.4-4).
- The Valley economy needed $16.8 million in logistics services, outside of internal demand from the Logistics Cluster itself[49] (Figure 4.4-5). The Valley obtained $11.5 billion from regional logistics firms and used outside firms for the remaining $5.3 billion. Of this amount, businesses imported $3.1 billion while $2.2 billion represented direct consumer demand that was imported. Since outside logistics services will often be used to transport goods into the region, it is normal to expect that regional demand will not be completely served by local firms.

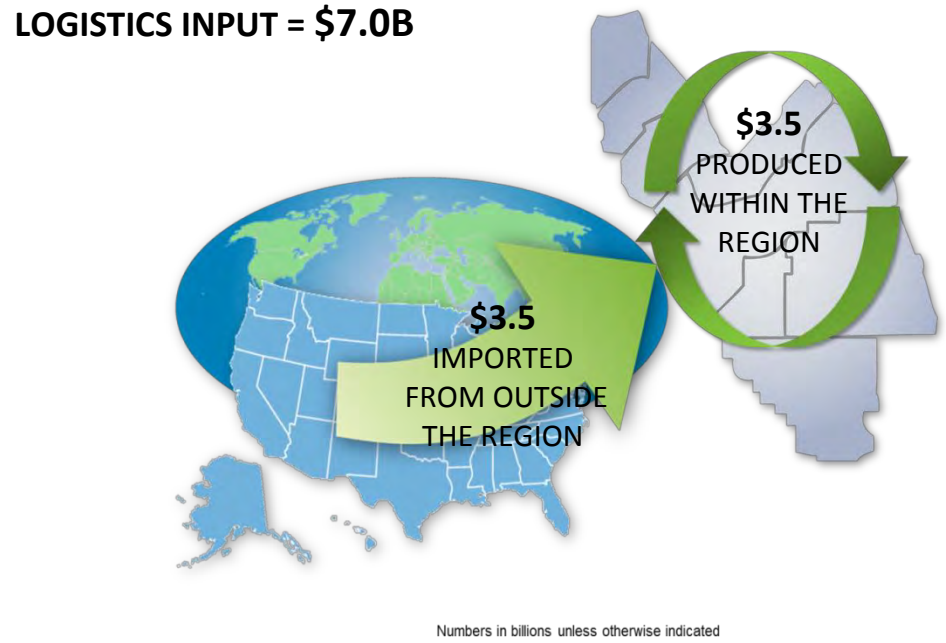
[49] The difference between the $12.6 billion in Figure 6.4-2 and this $11.5 billion is the internal demand from the logistics cluster itself.

FIGURE 4.4-3
VALUE OF LOGISTICS SERVICES AND MARKETS



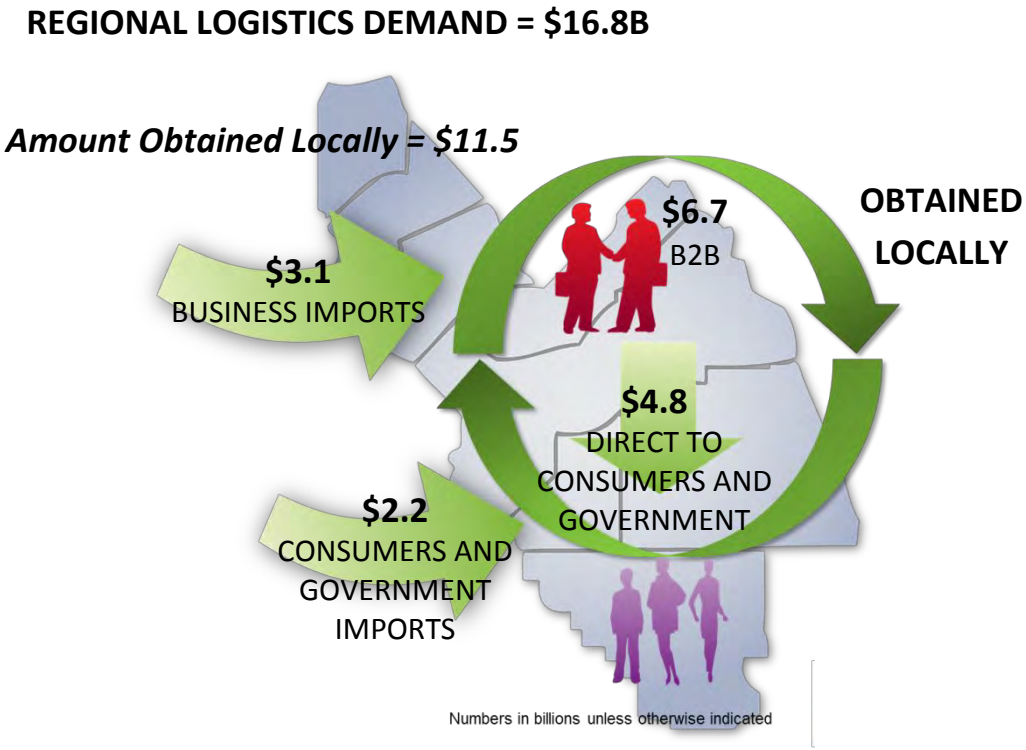
Source: ADE, Inc.; data IMPLAN3 input-output model

FIGURE 4.4-4
REQUIRED INPUTS FOR LOGISTIC SERVICES AND SOURCES OF SUPPLIERS



Source: ADE, Inc.; data IMPLAN3 input-output model

FIGURE 4.4-5



Source: ADE, Inc.; data IMPLAN3 input-output model

Table 4.4-2 shows some of the industries where the largest amounts of imports occured. This represents an economic development and jobs growth opportunity to replace some of this "leakage," which reached more than $3.5 billion. Potential targets include selected manufacturing and services.

TABLE 4.4-2

CLUSTER SUPPLIER PURCHASES – TOTAL DEMAND AND LEAKAGE (SELECTED INDUSTRIES)

Description	Gross Commodity Demand	Regional Purchase Percentage	Regional Commodity Inputs	Commodity Leakage
Total Commodity Demand	$7,025,827,000	N/A	$3,474,307,000	$3,551,521,000
Petroleum refineries	$771,080,000	15.0%	$115,340,000	$655,740,000
Other logistics establishments	$1,627,522,000	68.5%	$1,114,067,000	$513,455,000
Motor vehicle parts manufacturing	$170,648,000	7.6%	$13,018,000	$157,630,000
Management of companies and enterprises	$299,246,000	51.6%	$154,262,000	$144,984,000
Insurance carriers	$265,956,000	48.6%	$129,155,000	$136,801,000
Advertising and related services	$294,437,000	64.7%	$190,356,000	$104,081,000
Real estate establishments	$347,574,000	70.8%	$245,966,000	$101,608,000
Other aircraft parts and auxiliary equipment manufacturing	$99,793,000	0.2%	$188,000	$99,605,000
Management, scientific, and technical consulting services	$136,592,000	32.9%	$44,947,000	$91,645,000
Aircraft manufacturing	$72,535,000	1.6%	$1,180,000	$71,354,000
Semiconductor and related device manufacturing	$67,717,000	0.2%	$114,000	$67,603,000
Nondepository credit intermediation and related activities	$111,477,000	40.6%	$45,267,000	$66,220,000
Other engine equipment manufacturing	$60,974,000	0.1%	$47,000	$60,927,000
Lessors of nonfinancial intangible assets	$70,855,000	17.1%	$12,100,000	$58,755,000
Telecommunications	$164,541,000	72.4%	$119,133,000	$45,409,000
Legal services	$83,174,000	46.5%	$38,654,000Z	$44,520,000
Business support services	$85,218, 000	54.7%	$46,594,000	$38,624,000

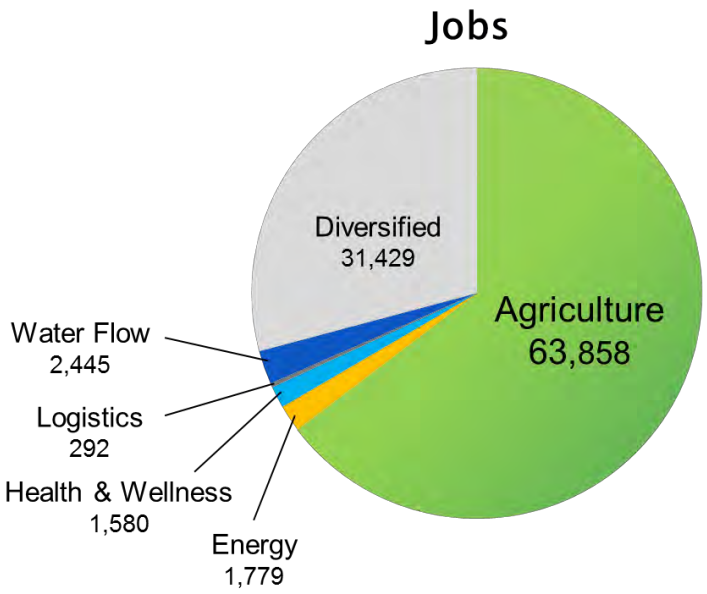
Source: ADE, Inc.; data from IMPLAN3 input-output model.

4.5 MANUFACTURING CLUSTER

Manufacturing is a lynchpin cluster in that it is a component of virtually all of the other regional clusters in addition to other "diversified" manufacturing companies. As shown in Figure 4.5-1, more than 70 percent of manufacturing jobs are associated with one of the five other clusters. Most of this employment is in food processing and is part of the agriculture value chain. However, as manufacturing processes have a number of commonalities across product lines, this analysis addresses all manufacturing industries in the Valley together. As the analysis shows, manufacturing has generally lost employment during the past decade, although this loss occurred more slowly in the Valley than it did statewide. It is worth noting, though, that nearly 60 percent of the losses were in non-cluster related diversified manufacturing industries.

FIGURE 4.5-1

MANUFACTURING EMPLOYMENT DISTRIBUTION AMONG CLUSTERS



Source: ADE, data from IMPLAN CEW/ES202 county employment database.

EMPLOYMENT INDICATORS

- Manufacturing supported about 101,400 jobs in the San Joaquin Valley and accounted for 8.1 percent of total regional jobs in 2010.
- Manufacturing declined by 9.3 percent between 2001 and 2010. However, the regional job loss occurred at a slower rate than the statewide average (shift-share: +21.3%). During this period, the total jobs declined by over 10,400 (Table 4.5-1).

- The concentration of employment in manufacturing is about on par with the statewide average (location quotient: 0.99). The Valley is highly concentrated in food processing and water technology manufacturing (location quotient of 3.29 and 2.47, respectively).
- There was variation in growth within the component areas. While most declined, agricultural-related processing employment grew by almost 5,900 jobs, or 10.7%, from 2001 to 2010, although with variation across the counties (see Appendix D).

TABLE 4.5-1

MANUFACTURING EMPLOYMENT INDICATORS, SAN JOAQUIN VALLEY

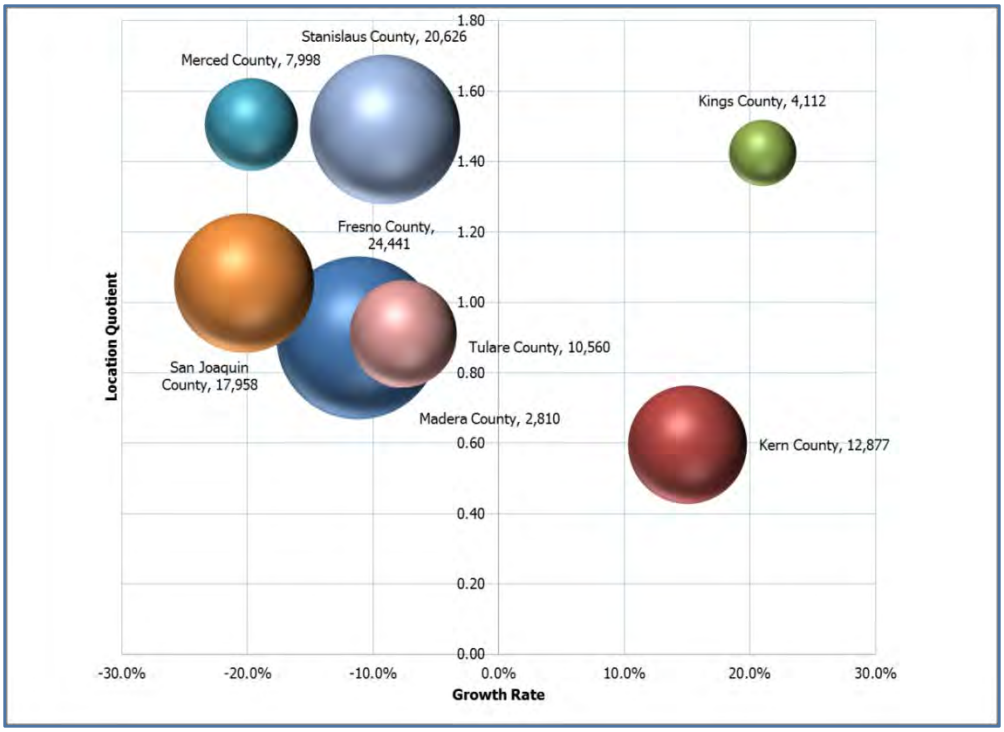
Industry Description	Employment 2001	Employment 2010	Employment Change 2001 to 2010	Percentage Change 2001 to 2010	Location Quotient 2010	Shift-share
Food Processing and Ag. Support	61,141	63,858	2,717	4.4%	3.29	17.25%
Medical Device Mfg. & Pharmaceuticals	1,802	1,580	-222	-12.3%	0.20	-15.6%
Logistics	380	292	-88	-23.3%	0.34	-24.1%
Energy Equipment & Petroleum Prod.	1,121	1,779	658	58.7%	0.47	108.6%
Water Flow Technolgy	3,439	2,445	-994	-28.9%	2.47	1.9%
Diversified Manufacturing	43,903	31,429	-12,474	-28.4%	0.46	4.6%
Manufacturing Total	111,786	101,382	-10,404	-9.3%	0.99	21.3%

Source: ADE, Inc.; data from IMPLAN CEW/ES202 county employment database.
Note: Location quotients and shift share factors are based on comparisons with statewide private sector employment.

GEOGRAPHIC CONSIDERATIONS

- Manufacturing had the largest job counts in Fresno and Stanislaus Counties, with more than 24,400 and 20,600 manufacturing jobs, respectively (Figure 4.5-2).
- San Joaquin County was next with almost 18,000 jobs, followed by Kern County with almost 12,900 jobs.
- Most counties had an employment concentration that was above or close to the State average, with the highest concentration in Stanislaus County (location quotient: 1.51) and the lowest concentration in Kern County (location quotient: 0.60).
- All counties lost manufacturing jobs between 2001 and 2010, except for Kings and Kern Counties. Food processing and packaging were major contributors to this growth.

FIGURE 4.5-2
MANUFACTURING CLUSTER EMPLOYMENT BY COUNTY



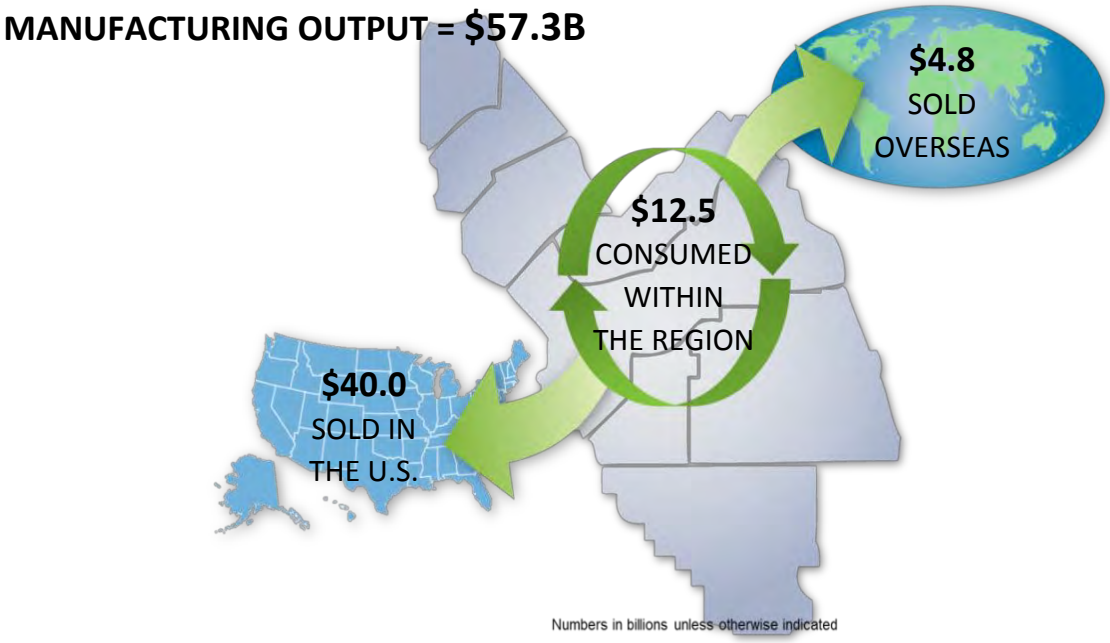
Source: ADE, Inc.; data from IMPLAN CEW/ES202 county employment database

TRADE INDICATORS

This section presents information on the regional trade flows – outputs, inputs required to produce the Manufacturing Cluster's outputs, and the gaps, or leakage, that represent potential economic development opportunities in terms of filling the leakage. This information is based on an analysis of the IMPLAN data for 2010, the most recent year available.

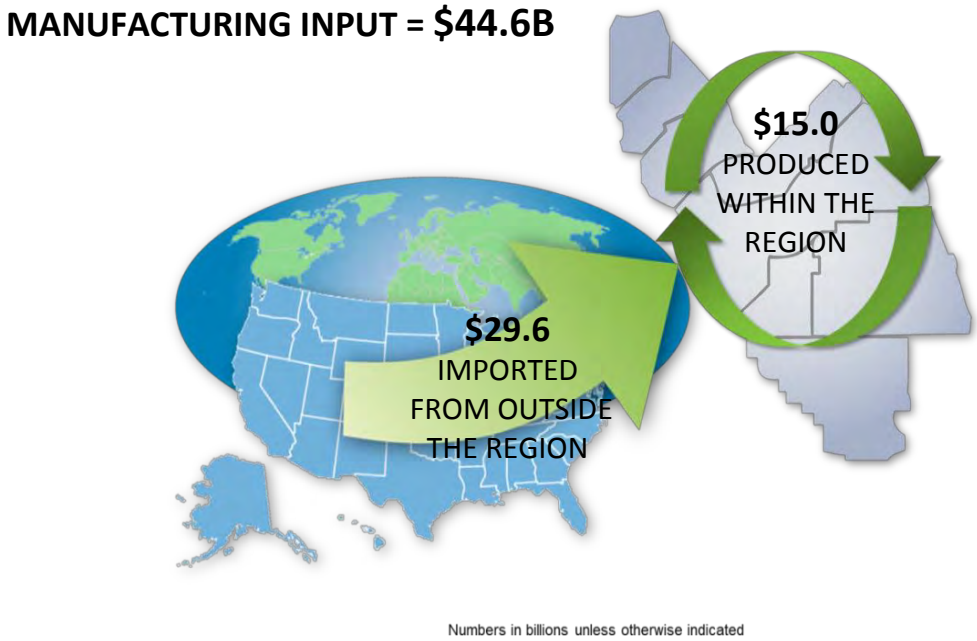
- Regional manufacturers produced $57.3 billion in 2010, selling $4.8 billion overseas and $40.0 billion to other domestic markets. Approximately $12.5 billion of regional manufacturing production was consumed in the San Joaquin Valley (Figure 4.5-3).
- The manufacturers required $44.6 billion in supplier inputs to produce the $57.3 billion in goods. They obtained $15.0 billion of that from within the region and $29.6 billion from outside the San Joaquin Valley (Figure 4.5-4).
- The San Joaquin Valley economy had a demand for $38.7 billion in manufactured goods but obtained only $12.5 billion of that demand from regional manufacturers (Figure 4.5-5). Of this $12.5 billion, $8.0 billion was consumed by other businesses and $4.5 billion by consumers (households) and government entities. To meet the remaining demand, businesses in the Valley imported $7.8 billion in manufactured goods from outside the region awhile another $18.4 billion was imported directly to (purchased by) consumers and government entities.

FIGURE 4.5-3
MANUFACTURING PRODUCTION VALUES AND MARKETS



Source: ADE, Inc.; data IMPLAN3 input-output model

FIGURE 4.5-4
PRODUCTION INPUTS NEEDED FOR REGIONAL MANUFACTURING



Source: ADE, Inc.; data IMPLAN3 input-output model

Table 4.5-2 shows the total inputs (goods and services) purchased by manufacturers regionally versus imported from outside the region, by type of commodity. Import substitution to address "leakage" of commodity purchases from outside the region ($29.6 billion) is a potential economic development opportunity.

TABLE 4.5-2

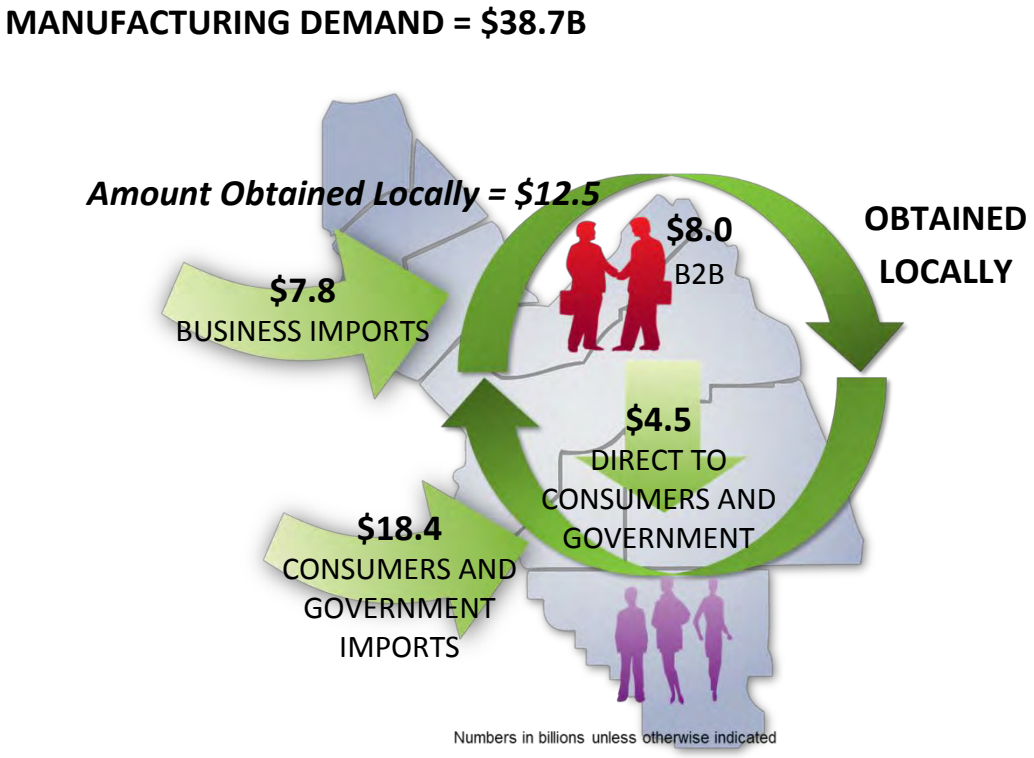
TOTAL INPUT (PURCHASES) AND LEAKAGE (SELECTED INDUSTRIES), 2010

Description	Gross Commodity Demand	Regional Purchase Percentage	Regional Commodity Inputs	Commodity Leakage (Imports)
Total Commodity Demand	$44,649,857,000	NA	$14,996,335,000	$29,653,523,000
Other manufacturing industries	$24,771,029,000	19.8%	$4,894,751,000	$19,876,278,000
Extraction of oil and natural gas	$3,159,514,000	3.2%	$102,098,000	$3,057,415,000
Wholesale trade businesses	$3,486,386,000	66.3%	$2,310,351,000	$1,176,036,000
Management of companies and enterprises	$2,032,848,000	48.7%	$990,814,000	$1,042,035,000
Scientific research and development services	$530,748,000	15.9%	$84,148,000	$446,601,000
Software publishers	$345,937,000	0.5%	$1,640,000	$344,297,000
Lessors of nonfinancial intangible assets	$355,978,000	15.4%	$54,860,000	$301,118,000
Grain farming	$308,740,000	19.0%	$58,570,000	$250,170,000
Oilseed farming	$219,813,000	4.9%	$10,775,000	$209,037,000
Electric power generation, transmission, and distribution	$719,075,000	75.3%	$541,482,000	$177,593,000
Advertising and related services	$387,957,000	64.5%	$250,138,000	$137,819,000
Mining gold, silver, and other metal ore	$128,911,000	0.1%	$115,000	$128,796,000
Automotive equipment rental and leasing	$197,848,000	37.0%	$73,111,000	$124,738,000
Management, scientific, and technical consulting services	$175,727,000	30.9%	$54,259,000	$121,468,000
Animal production, except cattle and poultry and eggs	$154,709,000	23.8%	$36,811,000	$117,897,000
Legal services	$192,108,000	45.6%	$87,562,000	$104,546,000

Source: ADE, Inc.; data from IMPLAN3 input-output model.

FIGURE 4.5-5

DEMAND FOR MANUFACTURED PRODUCTS AND SOURCES OF SUPPLY IN THE SAN JOAQUIN VALLEY



Source: ADE, Inc.; data IMPLAN3 input-output model

4.6 WATER TECHNOLOGY CLUSTER

As noted in the Partnership's *2010-2011 Annual Report*, "Water is scarce in most parts of California, creating tremendous pressure to redistribute the state's water resources and to find new sources and ways to store and deliver water more efficiently."[50] At the San Joaquin Valley Regional Economic Summit in March, 2012, water supply was identified as the top priority for economic prosperity in the Valley.

The Water Technology Cluster's strategic plan states that "Access to usable water is developing into the greatest challenge of this century. The world's ability to find, use, clean, recycle, transport, distribute, sell, tax, and conserve water will determine in large measure whether the world will progress or digress over the next 100 years. The technology to properly use and manage this precious resource is the critical tool to providing sufficient water supplies for the world's major uses, such as agricultural, municipal, and commercial applications."[51]

Numerous reports have documented the challenges to the Valley's water resources and infrastructure and the critical importance of these resources to the region and the state. Among these challenges are the health and viability of the San Joaquin Valley Aquifer (which includes the Tulare Basin in the southern part of the Valley), the Sacramento-San Joaquin Delta which provides water to 25 million Californians, the California Water Project, and the watershed systems supporting the Valley's communities, economy and natural systems. Water table depth as a measure of sustainable water use is one of the key indicators being tracked by the Partnership. According to a recent study, the current depletion rate of the Aquifer is not sustainable, especially with the threat of future droughts.[52] Changing climate patterns will exacerbate these challenges.

Valley leaders have long recognized water availability, quality and infrastructure as a critical issue for the agriculturally-based regional economy and overall regional economic growth. Fresno State has a state leadership role directing the CSU system's Water Resources and Policy Initiative (WRPI), and provides water technology research, testing, policy development, public-private sector collaboration and sustainability innovation. Among its programs, the Center for Irrigation Technology (CIT), created in 1980, was an early leader in establishing a regional expertise in water and agriculture. The California Water Institute was created subsequently to provide education, research and analysis of water policy issues; it was the lead for preparing the *San Joaquin Valley Regional Water Plan Framework,* which was adopted by the Partnership.

The Water Technology Cluster was formed in 2001 as part of a collaborative effort between the Fresno Business Council and OCED. Seed funding was provided by the Great Valley Center as a means to implement the cluster-networking recommendations of its report, *The Economic Future of the San*

[50] *Partnership 2010-2011 Annual Report*, Ibid., p. 85.
[51] Zoldoske, D.,CIT, OCED, CVBI, I*CWT Regional Strategic Plan,* August, 2010
[52] "Warning Issued on Groundwater," Edward Ortiz, Sacramento Bee, July 22, 2012.

Joaquin Valley. The Water Technology Cluster was the first cluster in the region and served as a model for subsequent clusters initiated by OCED and the Regional Jobs Iinitiative. The initial goals for the cluster were to: increase investment in research and development; increase sales through joint marketing efforts and foreign trade missions; and improve workforce development and internship programs geared to the types of jobs available at member firms.

The cluster adopted the name International Center for Water Technology (ICWT) to reflect the goal of being recognized as a globally-recognized center of water innovation and technology. This goal was made more real when Fresno State and the Central Valley Business Incubator (CVBI) collaborated to build the WET (Water and Energy Technology) Center to incubate new businesses and to provide testing facilities for new products.

The CVBI manages the WET Center Incubator program, focusing on commercialization of high-potential start-ups within water, energy, clean air, and ag technology. CIT manages the testing lab. The Fresno Workforce Investment Board provides a large share of the funding for the WET Center and for ICWT.

While the Water Technology Cluster was initially centered in the area between Fresno and Bakersfield, firms in the region have developed a special expertise in water efficiency systems that is now exported worldwide. "BlueTech Valley" is an initiative of the CVBI to brand the region as a global water technology hub and a catalyst for innovation in water, energy and related sectors.

To reflect the importance of innovation in water technologies to the future of the Valley, this project's cluster analysis was expanded beyond the five core Partnership clusters to include the Water Technology Cluster, to assess the performance and scope of the cluster and to identify possible Partnership actions that could support the cluster's regional efforts. As with the manufacturing sector in general, recent economic conditions have led to employment declines in the cluster. Still, the concentration of water technology employment in the Valley remains nearly three times the level in California. Water sustainability and infrastructure challenges at all levels, and regional comparative advantage and expertise, set the stage to advance the vision of the "BlueTechValley."

CLUSTER COMPONENTS

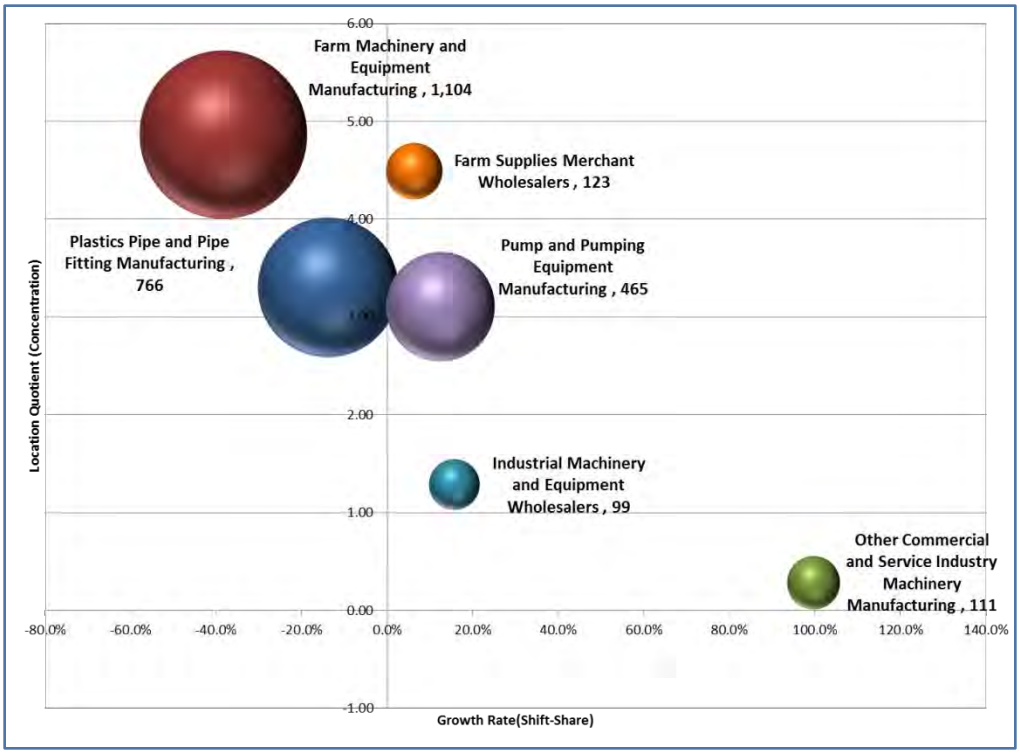
The Water Technology Cluster is comprised of the following components; the specific industries that are included in each cluster component as defined by their NAICS codes as included in Appendix B.

- Pump and pumping equipment manufacturing
- Plastic pipe and pipe fitting manufacturing
- Farm machinery and equipment manufacturing
- Other commercial and service industry machinery
- Farm supplies and merchant wholesalers
- Industrial machinery and equipment wholesalers

As indicated in Figure 4.6-1, water-related farm machinery manufacturing and plastic pipe manufacturing were the largest cluster components but contributed to the largest employment losses over the past decade. Non-farm related water technologies and distribution (wholesalers) provided much of the growth within the cluster.

FIGURE 4.6-1

COMPONENTS OF THE WATER TECHNOLOGY CLUSTER: SIZE AND GROWTH



Source: ADE, Inc.; data from IMPLAN CEW/ES202 county employment database

EMPLOYMENT INDICATORS

Table 4.6-1 summarizes Water Technology employment trends from 2001 through 2010, including employment changes and rate of growth, concentration (compared to the state), and shift-share (a ratio derived from the region's rate of growth compared to that of the state. The following is a summary of key trends:

- The Water Technology Cluster accounted for nearly 2,700 jobs in the San Joaquin Valley.
- Cluster employment declined by 26.9 percent between 2001 and 2010. This regional job decline occurred at a slower rate than the statewide average. During this period, the total jobs in the cluster declined by nearly 1,000 positions (Table 4.6-1).
- The concentration of employment in the cluster was more than twice the statewide average, showing the region's comparative advantage.

TABLE 4.6-1
WATER CLUSTER EMPLOYMENT AND GROWTH BY COUNTY

Description	Employment 2001	Employment 2010	Employment Change 2001 to 2010	Percentage Change 2001 to 2010	Location Quotient 2010	Shift-share
Water Flow Technology Cluster Total	3,651	2,668	-983	-26.9%	2.44	2.77%

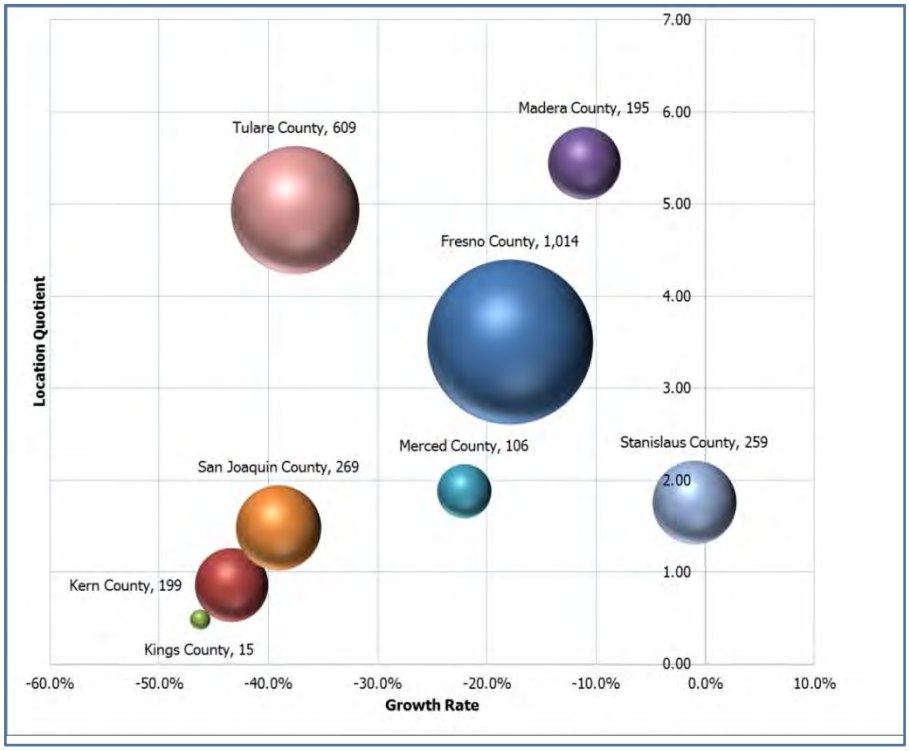
GEOGRAPHIC CONSIDERATIONS

Figure 4.6-2 illustrates the growth trends geographically of the Water Technology Cluster by each county in the Valley.

- The Water Technology Cluster had the largest job counts in Fresno and Tulare counties, which together accounted for 60 percent of jobs in the cluster.
- The employment concentration was above average in every county, except for Kern and Kings counties. The highest employment concentrations were in Fresno, Madera, and Tulare counties, each of which has a concentration more than triple the statewide average.
- All counties lost jobs in this cluster between 2001 and 2010, with Stanislaus County having the smaller rate of loss.

While the amount of employment was small in most counties, it will be important to track how this cluster is recovering and identify opportunities to build the cluster regionally.

FIGURE 4.6-2
WATER CLUSTER EMPLOYMENT AND GROWTH BY COUNTY



Source: ADE, Inc.; data from IMPLAN CEW/ES202 County Employment Database - STANDARDIZE the source

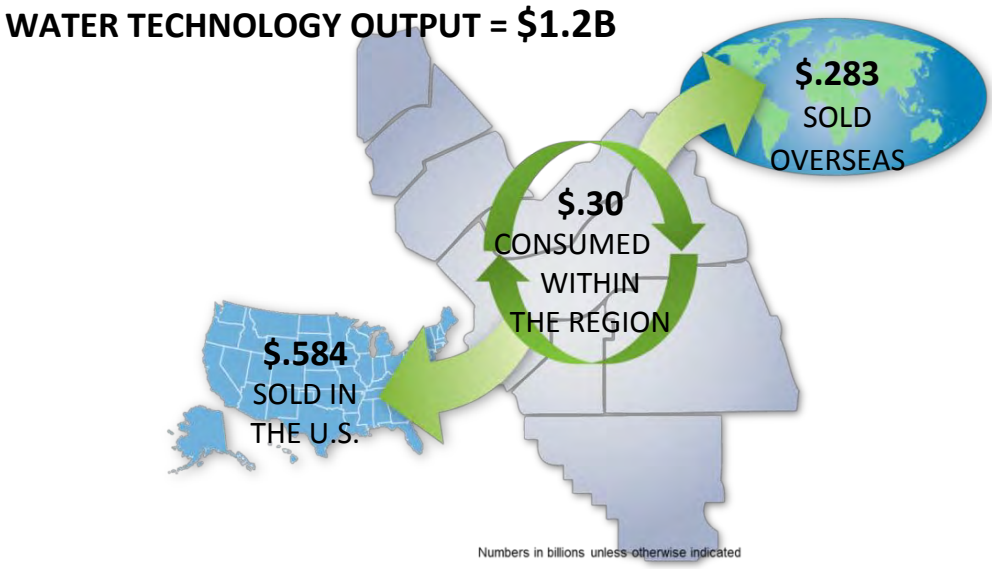
TRADE INDICATORS

This section presents information on the regional trade flows – outputs, inputs required for regional commodity inputs to produce the Water Technology Cluster's outputs, and the gaps, or leakage – that represent potential economic development opportunities in terms of filling the leakage.

- The commodity value of the Water Technology cluster in the region totaled $1.2 billion (Figure 4.6-3). Only 24 percent of that production was sold within the Valley, with 50 percent sold elsewhere in the US and nearly 25 percent sold to foreign markets.
- Total commodity demand for this cluster was $945 million ($565 million in final demand by consumers and institutions, and $379 million in trade with other businesses).
- The supplier purchases that support the Water Technology cluster had a total value of $871 million, of which $187 million is purchased from suppliers within the region. An additional $684 million in commodity demand (leakage) came from outside the region (Figure 4.6-4).

FIGURE 4.6-3

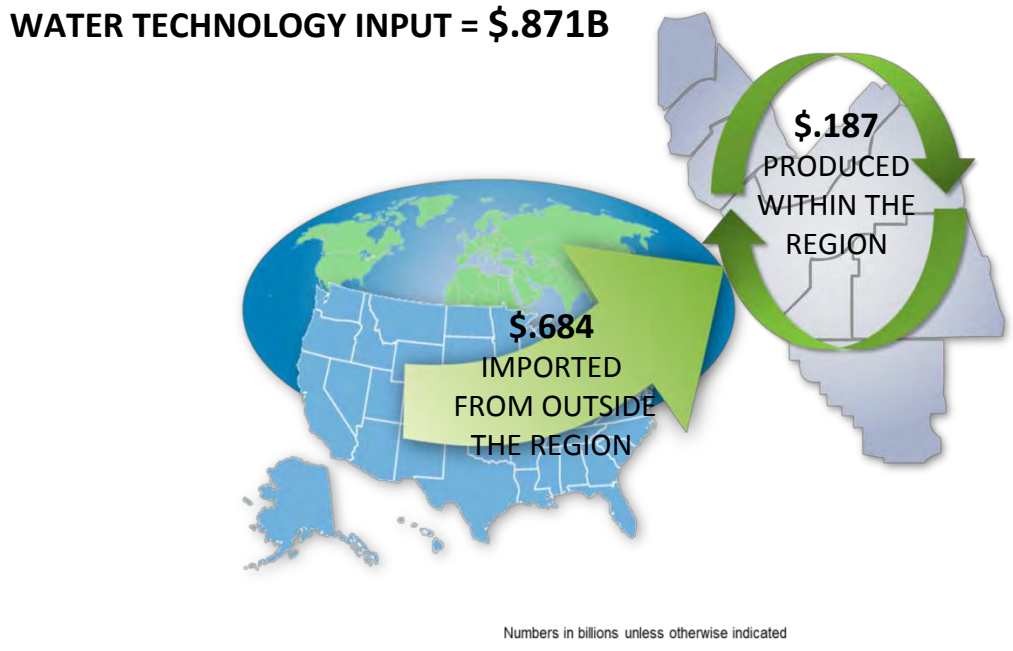
VOLUME OF SALES AND MARKETS PRODUCED WITHIN THE REGION FOR THE WATER TECHNOLOGY CLUSTER



Source: ADE, Inc.; data IMPLAN3 input-output model

FIGURE 4.6-4

PRODUCTION INPUTS REQUIRED FOR THE WATER TECHNOLOGY CLUSTER



Source: ADE, Inc.; data IMPLAN3 input-output model

Table 4.6-2 indicates top sectors where commodity leakages from the Water Technology Cluster may represent economic development opportunities in the Valley. While not all are likely candidates, there are large gaps in several manufacturing inputs that could be import substitution opportunities.

TABLE 4.6-2

TOTAL INPUT (PURCHASES) AND LEAKAGE (SELECTED INDUSTRIES), 2010

Description	Total Input Purchases	Share Purchased w/in Region	Inputs Purchased in Region	Commodity Leakage (Inputs)
Total Commodity Inputs	$871,674,000	NA	$187,321,000	$684,353,000
Plastics material and resin manufacturing	$130,416,000	1.0%	$1,364,000	$129,052,000
Iron and steel mills and ferroalloy manufacturing	$60,963,000	7.5%	$4,567,000	$56,397,000
Other engine equipment manufacturing	$32,447,000	0.1%	$37,000	$32,410,000
Valve and fittings other than plumbing manufacturing	$31,279,000	3.5%	$1,093,000	$30,187,000
Motor and generator manufacturing	$28,535,000	1.5%	$430,000	$28,105,000
Wholesale trade businesses	$70,745,000	64.6%	$45,666,000	$25,079,000
Motor vehicle parts manufacturing	$23,509,000	7.6%	$1,783,000	$21,726,000
Ferrous metal foundries	$21,705,000	5.6%	$1,212,000	$20,493,000
Fluid power process machinery manufacturing	$18,527,000	1.0%	$183,000	$18,343,000
Other plastics product manufacturing	$18,136,000	6.5%	$1,186,000	$16,951,000
Other water flow technology cluster establishments	$23,427,000	31.7%	$7,432,000	$15,994,000
Semiconductor and related device manufacturing	$15,593,000	0.2%	$27,000	$15,566,000
Crown and closure manufacturing and metal stamping	$18,410,000	21.1%	$3,892,000	$14,519,000
Management of companies and enterprises	$27,347,000	52.0%	$14,225,000	$13,122,000
Machine shops	$11,747,000	4.6%	$542,000	$11,205,000

Source: ADE, Inc.; data from IMPLAN3 Input-Output Model

4.7 OVERALL REGIONAL CLUSTER LEAKAGE AND ECONOMIC DEVELOPMENT TARGETS

Each of the cluster analyses discussed earlier in this chapter listed industry sectors from which the regional clusters import significant portions of the production inputs they require in order to manufacture their products or provide services (output). These gaps are defined as business-to-business leakage. When these leakage gaps are aggregated across the region and all the clusters, they represent an additional level of scale regarding potential new economic development opportunities for the Valley.

This section summarizes key targets that are an aggregation of possible market opportunities across the Valley's shared clusters, selected by ADE as a starting point for further consideration. In particular, this information is intended as a resource for the California Central Valley Economic Development Corporation (CCVEDC), which markets investment opportunities for business location and expansion in the Valley and provides site location assistance, especially for targeted industry clusters, along with Pacific Gas and Electric Company, individual economic development agencies and other partners. These partners include the Central Valley Business Incubator, the California Small Business Development Network, UC Merced Regional Network, and other organizations working on business attraction, expansion, retention and entrepreneurship.

METHODOLOGY

ADE evaluated each cluster with regard to the inputs of goods and services needed to support production within each cluster, using the Implan Input-Output (I-O) model described in Section 2.2. Analyzing the results of the model, ADE estimated the portion of inputs that each cluster obtained from other businesses within the San Joaquin Valley region, and what portion was obtained from outside the region. The I-O model makes these estimates based on the industry requirements derived from a national economic model and the employment distributions by industry within the region. The dollar values of industry inputs are regional averages and do not necessarily reflect actual buyer-supplier relationships for individual businesses within the region.

As such, the figures provide an indication of potential gaps or supplier "leakages" but may not be an exact estimate of supply chain behavior throughout the entire cluster. Also, industry sectors that are not likely to be located in the Valley have been eliminated from the list of targets. Further investigation and validation of the cluster leakage data is required in order to identify realistic opportunities for economic development purposes.

POTENTIAL ECONOMIC DEVELOPMENT TARGETS

Table 4.7-1 summarizes the potential economic development targets for business expansion, attraction, start-ups and marketing by type of commodity supplied from outside the region and the estimated level of "leakage" and therefore market support for these new or expanded businesses. Figure 4.7-1 illustrates the same information emphasizing the targets by level of market support. With refinement, the analysis can also indicate the potential number of establishments that could be supported with an increase in local market share.

TABLE 4.7-1

POTENTIAL SAN JOAQUIN VALLEY ECONOMIC DEVELOPMENT TARGETS BY TYPE OF COMMODITY

Description	Market Support
Lessors of nonfinancial intangible assets	$712,684,902
Scientific research and development services	$699,203,194
Paper mills	$611,657,224
Oilseed farming	$457,939,735
Other basic organic chemical manufacturing	$395,251,263
Petrochemical manufacturing	$388,307,767
Artificial and synthetic fibers and filaments manufacturing	$385,174,775
Software publishers	$375,381,255
Plastics material and resin manufacturing	$363,583,853
Automotive equipment rental and leasing	$336,797,184
Plastics bottle manufacturing	$336,106,827
Management, scientific, and technical consulting services	$323,596,782
Aluminum product manufacturing from purchased aluminum	$303,463,414
Advertising and related services	$284,775,137
Paperboard Mills	$257,933,907
Other plastics product manufacturing	$244,701,794
Semiconductor and related device manufacturing	$241,774,577
Metal can, box, and other metal container (light gauge) manufacturing	$222,663,225
Plastics packaging materials and unlaminated film and sheet manufacturing	$220,030,995
Motor vehicle parts manufacturing	$212,772,162
All other chemical product and preparation manufacturing	$169,215,313
All other basic inorganic chemical manufacturing	$166,138,528
Architectural, engineering, and related services	$165,780,479

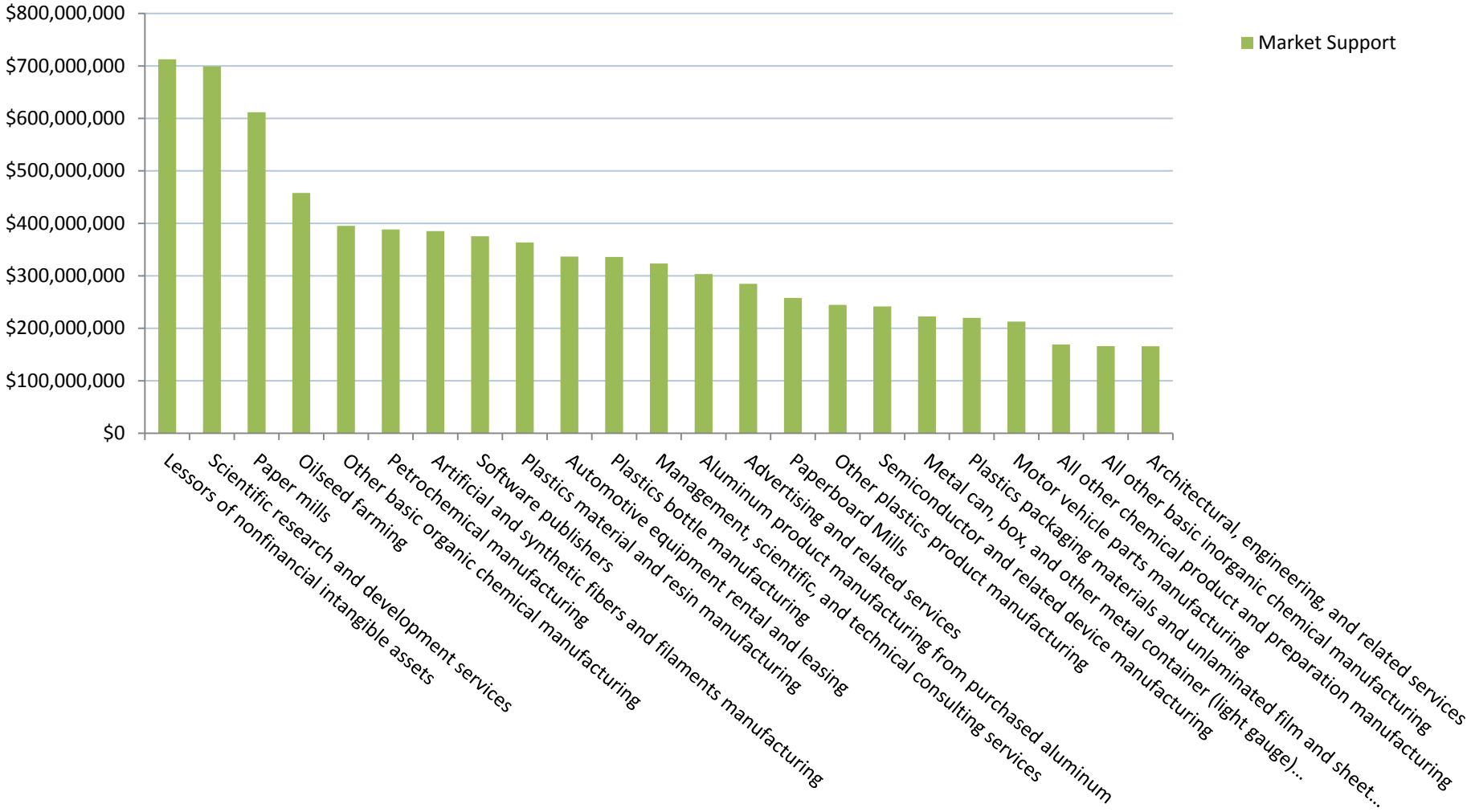
Source: IMPLAN3 I-O model, ADE

"Lessors of nonfinancial intangible assets" was the largest category shown. According to the NAICS definition, this industry "comprises establishments primarily engaged in assigning rights to assets, such as patents, trademarks, brand names, and/or franchise agreements for which a royalty or licensing fee is paid to the asset holder." Activities include brand name licensing; franchising agreements, leasing, selling or licensing; oil royalty companies; oil royalty leasing; industrial design licensing; patent buying and licensing; patent leasing; and trademark licensing. This industry represents specialization including legal expertise that is sought outside of the Valley.

Scientific research and development services was the next largest market gap. Combined with management, scientific and consulting services, these industries provide another professional services target for developing specialized expertise within the Valley. As noted in the Energy Cluster analysis, research and scientific consulting services are a growth opportunity. Oilseed farming was the fourth largest gap and also relates to the Energy Cluster, as an input for biofuels. Most of the other potential targets are in manufacturing industries. The architechtural, engineering, and related services industry is another potential growth area, especially with opportunities related to public sector infrastructure construction as described in the next section of this report.

OCED and ADE met with the CCVEDC to discuss the findings and next steps related developing a collaborative valley-wide strategy to pursue these opportunities. Recommendations are presented in Chapter 5.

FIGURE 4.7-1
ECONOMIC DEVELOPMENT TARGETS BASED ON CLUSTER REQUIREMENT



Source: Applied Development Economics

4.8 PUBLIC SECTOR INFRASTRUCTURE (CONSTRUCTION)

The Great Recession affected the construction industry more than any other sector in the Valley, especially with residential construction and the collapse of the housing market. According to California Employment Development Department (EDD) data for the eight county San Joaquin Valley region, construction employment fell from 89,400 jobs in 2006 to 45,900 in 2010, a loss of almost 50 percent in just four years (43,500 jobs).[53] A slow recovery is starting to be evident with the creation of 5,700 new construction jobs between July 2011 and July 2012 (preliminary) but it will take time to replace the jobs lost and absorb the existing unemployed labor force which was estimated.

To address the large number of layoffs in the region's construction industry, the Central California Workforce Collaborative (CCWC) secured a National Emergency Grant in 2010 to assess workforce opportunities related to the region's planned public sector infrastructure investments. With the decline in residential construction, construction of public infrastructure and facilities represents perhaps the largest current investment underway in Central California and an opportunity to revitalize the construction sector and the regional economy, and build new skills for workers, especially for middle-skill infrastructure jobs. Skills building will help ensure the Valley's workforce is qualified for local construction jobs that will be created by these investments.

The CCWC region spans the San Joaquin Valley south of Sacramento, the Mother Lode foothill counties, and the high desert areas of Kern, Inyo and Mono counties, so it is larger than the San Joaquin Valley itself. However, the Valley comprises the greatest part of the jobs and workforce, and the analysis and the strategy are reflective of conditions in the Valley region.

ADE prepared the project analysis of the construction workforce, planned public sector infrastructure investments and construction workforce needs and skills for fifteen high-demand occupations over the next ten years. The analysis – *Workforce Needs for Public Sector Infrastructure* (April, 2011), incorporated a broader definition of public sector infrastructure than is commonly used, and included an initial scan of regional education and training resources to meet projected occupational demand across several areas of infrastructure. The Council for Adult and Experiential Learning (CAEL) prepared the project implementation strategy – *the Public Infrastructure Workforce Plan* (2012).

Because construction is generally considered a primarily local-serving sector, there is only one construction-related cluster in the Valley, which was formed as part of the Regional jobs Initiative (RJI). A cluster SWOT analysis prepared by RJI cluster leaders in 2009 identified several challenges, including those posed by the economic downturn, lack of momentum to keep diverse private sector participation, and missing out on funding sources (such as ARRA funds) due to lack of representation and organization.

[53] California Employment Development Department, Labor Market Information Division, Industry Employment Data, Monthly Profiles. Note: Figures for the counties of Kings, Madera, Merced, Stanislaus and Tulare counties also include mining and logging activities but construction employment is the primary source of jobs.

It also identified the potential to build network "infrastructure," be a collective voice, and prepare for the future upturn of the economy.[54] The Cluster is in transition and OCED has discussed with cluster leaders, the CCWC, the CCVEDC, the Regional Policy Council and other partners the opportunity for its revitalization and regionalization based on leveraging public sector infrastructure investments.

PUBLIC SECTOR INFRASTRUCTURE CLUSTER OPPORTUNITIES

The major infrastructure categories covered in the CCWC analysis are: transportation (not rail); rail transit including High Speed Rail; infrastructure including water and wastewater systems, flood control, and other public works; buildings/community assets including hospitals, educational facilities and correctional facilities; broadband infrastructure; and energy facilities, including solar farms and wind energy projects and transmission. When aggregated across these infrastructure categories, major construction projects budgeted by the public sector, utilities and institutional entities for the CCWC region totaled an estimated $36.6 billion between 2010 and 2020 (Table 4.8-1).

Most of these projects were planned for the first three to five years of this period, since the information for local government Capital Improvement Programs (CIPs) - a primary data source - is not yet available beyond that time frame. Regional projects with longer time frames include the High Speed Rail at $6 billion and the Delta Conveyance at $6-$10 billion. Non-rail transportation projects comprise 30 percent of expenditures, and alternative energy/broadband projects totaled approximately 25 percent. Projected expenditures in public buildings/community facilities such as schools, colleges, hospitals, and prisons were estimated at $3.1 billion or almost nine percent, and "other infrastructure" (minus the Delta Conveyance) estimated at about $863 million.

TABLE 4.8-1
SUMMARY OF MAJOR INFRASTRUCTURE EXPENDITURES IN CCWC REGION, 2010-2020

Infrastructure Category	Planned Expenditures ($billions)	Percent
Transportation (not rail)	$10.46	28.56%
Rail transit (including high-speed rail)	$6.10	16.63%
Infrastructure (including water and wastewater)	$7.53	20.57%
Buildings/community assets	$3.15	8.60%
Broadband	$0.13	0.36%
Energy	$9.26	25.28%
TOTAL	**$36.61**	**100%**

Source: ADE, based on data from state and local government agencies, CPUC, CEC, California High-Speed Rail Authority, California Secretary of State (bond and sales tax measures), Regional Transportation Plans, project team interviews and other research.

[54] SWOT Analysis, Construction Cluster, June 2009, Regional Jobs Initiative.

According to the analysis, construction jobs associated with these public infrastructure expenditures were projected to create 197,300 person-years of employment across a variety of construction industries (Table 4.8-2). It is estimated that these projects would have the potential to support 31,500 jobs in 2010 and would support an average of 24,500 jobs per year between 2011 and 2014. Of the total jobs, about 6.1 percent are in professional services – design and engineering – occupations.

Based on the results of the analysis, CAEL developed a workforce development strategy for CCWC to focus on the opportunity to link local workers with the public infrastructure investments planned for the region. Training strategies are geared to helping workers with residential construction experience transition to the skill sets needed for heavy construction, as well as working with labor organizations to anticipate the skill needs associated with the impending retirement of union workers. There is a strong need for ongoing intelligence gathering and communications in order to track effectively the changing opportunities in public infrastructure development and the timing of these opportunities. Chapter 5 contains recommendations to support the implementation of the Workforce Plan.

TABLE 4.8-2

SUMMARY OF PROJECTED JOBS FROM MAJOR INFRASTRUCTURE EXPENDITURES IN CCWC REGION, 2010-2020

Project Type	*Total*	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Transportation	***54,646***	**7,595**	**7,012**	**6,700**	**6,263**	**8,168**	**4,383**	**3,805**	**3,790**	**3,544**	**3,385**	**0**
Construction	*52,828*	7,342	6,779	6,477	6,055	7,896	4,237	3,679	3,664	3,426	3,272	0
Design/Engineering	*1,818*	253	233	223	208	272	146	127	126	118	113	0
High Speed Rail	***25,499***	**0**	**237**	**2,285**	**4,416**	**6,838**	**6,090**	**4,189**	**1,443**	**0**	**0**	**0**
Construction	*24,209*	0	225	2,176	4,205	6,487	5,776	3,966	1,374	0	0	0
Design/Engineering	*1,290*	0	11	110	211	352	315	223	69	0	0	0
Other Rail Transit	***597***	**276**	**258**	**31**	**1**	**1**	**1**	**1**	**27**	**1**	**1**	**0**
Construction	*577*	266	250	30	1	1	1	1	26	1	1	0
Design/Engineering	*20*	9	9	1	0	0	0	0	1	0	0	0
Infrastructure	***5,175***	**1,978**	**1,921**	**811**	**331**	**134**	**0**	**0**	**0**	**0**	**0**	**0**
Construction	*4,792*	1,832	1,779	751	307	124	0	0	0	0	0	0
Design/Engineering	*383*	146	142	60	25	10	0	0	0	0	0	0
Delta Conveyance	***33,283***	**0**	**0**	**2,142**	**4,545**	**4,383**	**4,229**	**4,076**	**3,931**	**3,447**	**3,324**	**3,206**
Construction	*30,819*	0	0	1,983	4,209	4,058	3,916	3,774	3,640	3,192	3,078	2,969
Design/Engineering	*2,464*	0	0	159	336	324	313	302	291	255	246	237
Buildings/Other Government	***19,897***	**7,413**	**5,913**	**5,878**	**555**	**138**	**0**	**0**	**0**	**0**	**0**	**0**
Construction	*18,714*	6,965	5,558	5,541	521	130	0	0	0	0	0	0
Design/Engineering	*1,183*	448	355	337	34	9	0	0	0	0	0	0
Broadband	***868***	**442**	**426**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Construction	*804*	409	395	0	0	0	0	0	0	0	0	0
Design/Engineering	*64*	32	31	0	0	0	0	0	0	0	0	0
Energy	***57,334***	**13,853**	**10,954**	**9,835**	**6,236**	**6,263**	**5,096**	**5,096**	**0**	**0**	**0**	**0**
Construction	*53,119*	12,835	10,149	9,112	5,778	5,802	4,721	4,721	0	0	0	0
Design/Engineering	*4,215*	1,018	805	723	458	460	375	375	0	0	0	0
Total All Projects	***197,299***	**31,556**	**26,722**	**27,683**	**22,348**	**25,925**	**19,799**	**17,167**	**9,191**	**6,992**	**6,710**	**3,206**
Construction	*185,862*	29,649	25,135	26,070	21,074	24,498	18,651	16,142	8,704	6,619	6,351	2,969
Design/Engineering	*11,437*	1,907	1,587	1,612	1,273	1,427	1,148	1,026	487	373	359	237

Source: ADE, Inc.; data from state and local government agencies, CPUC, CEC, California High-Speed Rail Authority, California Secretary of State (bond and sales tax measures), Regional Transportation Plans, project team interviews and other research.

CHAPTER 5

CHARTING THE COURSE FOR THE SAN JOAQUIN VALLEY'S ECONOMIC FUTURE

"If we work together we can make a difference."

Participant, Manufacturing, Energy and Logistics Cluster Meeting, Fresno, June 11, 2012

This chapter presents overall findings and recommendations for the New Valley's next stage of implementation, as well as specific cluster priorities and recommendations, and recommendations for alignment of organizational capacity and support for cluster strategy implementation.

The Valley has significant assets. There are an almost overwhelming number of initiatives underway throughout the Valley related to the clusters, including those that are increasingly a convergence across the clusters, such as with energy, water and agriculture. A great deal of leadership and expertise resides with the partners involved in these initiatives, but they are dealing with diminished resources, the very large scale of the Valley, a diversity of issues facing the clusters, and the inherent challenges of collaboration such as dedication of time and capacity. However, partners increasingly are developing the capacity to regionalize their networks and ways to engage in specific initiatives on behalf of their networks. This network-to-network process is proving to be very beneficial. The Partnership and OCED's goal should be to connect, support and optimize these assets and initiatives.

5.1 OVERALL FINDINGS

A number of the findings cut across the individual clusters and pertain to the overall economy and the region's organizational context. Overall Project findings include the following:

- The Valley's economy is beginning a slow recovery but lags behind many other California regions, especially coastal areas with technology sectors. Innovation indicators such as venture capital investment and patents show a similar disparity.
- The Valley had an estimated Gross Domestic Product of $140 billion and of $228.6 billion in economic output in 2010. Several areas (components) within the Valley's clusters showed resilience during the recession and are a platform for the next stage of the New Valley Economy. Overall, the clusters have been the engine of most of the Valley's employment growth since 2001.
- However, even in clusters where the Valley has comparative advantage, such as agriculture and logistics, the Valley is not "capturing the value chain." There is leakage through outsourcing for industry supplier inputs, talent (workers commuting out of the Valley for jobs), innovation (inventions and ideas leaving the Valley for specialized services and capital), and loss of value-added activities such as processing of raw materials into more finished products.

- Leakage occurs across all the clusters and there is a strong economic development opportunity to fill these gaps, both within the clusters and aggregated across the clusters.
- The Partnership's five original SAP clusters continue to be shared priorities across the Valley, with some adaptations. They are the foundation for the Cluster Action Plan along with the Water Technology Cluster and consideration of Public Sector Infrastructure (construction).
- Initiatives, including county industry cluster activities and the Partnership's New Valley Work Groups, are challenged by resource and capacity issues, calling for a restructuring and alignment of organizational approaches, including the role of OCED and the Work Groups.

Several common themes were expressed by cluster meeting participants, partners, and Valley leaders to guide recommendations for the Cluster Action Plan:

- Given the Valley's many cluster and sector-focused assets, what is needed is leadership and support to connect and convene them in order to identify the shared priorities that can best be addressed and advanced at the regional level.
- Improving the educational status and skills levels of the workforce, and creating pathways for opportunity is a high priority and a focus of many of the Valley's sector-based strategies. There is a strong commitment to connecting students with educational opportunities that are present; to create a college-going culture in the Valley; and to train people for jobs that are here and in sectors that are growing. Additional information is needed on priority occupational demand.
- There is a clear nexus across the clusters. Issues are interconnected and the clusters need to be addressed synergistically. As an example, combining manufacturing, energy and logistics in a broad coalition was recommended as the right way to engage to move the Valley forward.
- The list of economic development leakage targets, aggregated and by cluster, needs to be refined by those working on the ground to determine the most realistic targets. Closing the gaps will require a concerted collaborative strategy and a designated lead to execute the strategy.
- Regional collaboration across systems and across the Valley will create efficiencies, better labor market information on high demand workforce skills and occupations, and market export opportunities. This collaboration should be made more systematic where possible.
- The New Valley Work Groups leads, with support from OCED, should convene the cluster groups regularly to advance shared Action Plan priorities, identify partnership opportunities, network, and seek new project and funding opportunities for the region. Participation of Partnership Board members for high level conversations will help identify and advance strategic priorities. Action Plan implementation should be guided by the Partnership Executive Committee.
- The Valley needs to have a stronger voice in Sacramento, both with the Legislature and state agencies.

The Valley is poised for a shift in the next phase of its economy, especially through attention to "capturing the value chain" and becoming a leader in new technologies for water, energy, air quality, recycling and other resource efficiencies and infrastructure. For example, the vision is for the San Joaquin Valley to be recognized as a global leader for water and energy technology – for being the best area for testing and getting water and energy technologies to market – the BlueTech Valley. This shift can both drive specific cluster growth and improve the efficiencies, competitiveness and environmental outcomes of other clusters such as Agriculture. It also will help improve the Valley's overall health and well-being of people, communities and life-sustaining systems.

5.2 KEY CLUSTER RECOMMENDATIONS

The Project's planning process generated many ideas, priorities and recommendations for the overall New Valley Cluster Action Plan and individual clusters. They have been distilled into a summary list of specific issues and proposed actions for each cluster, and are presented on page 119. They are a starting point for clarifying the highest priority issues and actions, and developing targeted implementation plans under the umbrella of the overall Cluster Action Plan. These plans should be developed through the New Valley Cluster Work Groups (and Cluster Action Teams), with a focus on areas where the Partnership can add value through its regional mission, leadership and state-regional collaboration assets, along with the resources, expertise and networks of OCED (see Section 5.3 for organizational recommendations). Working with OCED, the Partnership Executive Committee will guide the identification of a selected set of tangible initiatives across the clusters for implementation in 2013.

Recommendations for the Agriculture Cluster and the Public Sector Infrastructure Cluster are based on the Regional Economic Summit held in March, 2012, and the economic analysis and Regional Workforce Plan prepared for the Central California Workforce Collaborative, respectively. The San Joaquin Valley Interregional Good Movement Plan being prepared for the Regional Policy Council provided information for recommendations for the Logistics and Public Sector Infrastructure Clusters.

Based on the framework for the State Economic Summit which was used for the Regional Economic Summit for the Agriculture Value Chain, recommendations for the other clusters were grouped into the following five areas: infrastructure (goods movement, water, broadband, energy); workforce needs; innovation; regulations and sustainability; and access to capital. The emphasis varied by cluster. Some of the issues areas such as energy are also a cluster. Others like broadband are an enabling technology across all of the clusters. The majority of the recommendations are in the category of workforce needs, followed by regulations and sustainability. Access to capital was raised as a more general issue, especially for various stages of capital related to promoting research, commercialization of technology, and innovation. Further exploration of these issue areas by the Cluster Work Groups is merited.

Addressing workforce needs is a strong area of focus due to the concerted efforts on the part of Valley leaders to raise the educational attainment of the Valley's youth and adults; provide a skilled workforce

that meets the needs of employers and provides a pathway to prosperity for workers; and reduce unemployment and stagnation of workers in low-skill low-wage jobs, especially in the Valley's rural areas. As noted in other parts of this report, there are several innovative regional workforce sector strategies underway, focused on occupations across many clusters. Many of these are successful models that need to be brought to scale. This will continue to be a high priority for the Valley and is reflected in action priorities across the clusters.

The Ation Plan also addresses the need for cultivation of and support for an entrepreneurial culture and "eco-system" to reduce the intellectual/innovation leakage gap and to foster new jobs, start-ups and business expansions in the Valley. This approach should capitalize on new research assets such as UC Solar, the UC Merced Health Sciences Research Institute (HSRI), and the UC Merced Sierra Nevada Research Institute, as well as numerous existing research assets. The existing assets are many and include: other University institutes and research stations, the WET Center (Water, Energy, Technology), the Lyles Center for Innovation and Entrepreneurship, the Central Valley Business Incubator, the Cal Valley Tech iHub, the UC Merced Small Business Development Center Regonal Network, the Business and Entrepreneurship Center, the Central Valley Fund, the Center for Applied Competitive Techologies, the California Centers for International Trade Development, CalFOR, and private sector, federal and state research and development assets.

OCED can play an important role in helping to connect, coordinate and leverage these assets to addresss the targets and opportunities identified in the Cluster Action Plan. Elevating these assets will in turn help address capital needs, catalyze entrepreneurship and the commercialization of new technologies, and foster the Valley's pipeline of innovation.

Additional detailed information and resources generated during the planning process will be available through OCED and the Partnership's website as resources for the Cluster Work Groups.

KEY CLUSTER ACTION PLAN PRIORITIES		
Cluster	**Issues/Opportunities**	**Recommended Actions**
Agriculture	• All 5 issue areas addressed in Regional Economic Summit	• All actions have designated champions and recommended actions; Partnership & OCED are tracking progress. See www.sjvpartnership.org
Energy	• Regional focus on cluster development & coordination needed; opportunity to develop biofuels;, better define cluster components • Conditional Use permits vary by county – frustrating for international companies willing to invest in the Valley; results in project delays or cancellations • Increase entrepreneurial climate; need to create culture of early stage investment, create dialogue with entrepreneurs, &encourage students to create the next generation of solar technology • Leakage of energy use	• SJV Clean Energy Organization should be lead for cluster development action plan; expand networking to connect more stakeholders • Advocate for funding for SJV Regional Energy Plan Roadmap • Coordinate with County Planners (CSAC) working on simpler expedited solar permitting process throughout the state; coordinate locally • Coordinate with UC Solar Research Institute, CVBI, Lyles Center for Innovation and Entrepreneurship, Central Valley Fund, Business and Entrepreneurship Center, UC Merced SBDC Regional Network, CalFOR & others to accelerate technology commercialization & entrepreneurship • Provide input to PUC on energy facilities sitings • See Regional Economic Summit Strategy recommendations
Health and Wellness	• Difficult to coordinate with so many initiatives across the Valley • Need for consistent and regionalized standards and curriculum for same occupations/certificates, and for transferability of credits from Community Colleges to CSUs • Need to standardize residency requirements for nurses • Address gaps in workforce skills – need for better information, programs to increase skill levels • Need to prepare for health information technologies; expand broadband infrastructure • Need improved access to jobs and health care services in rural areas • Wellness/prevention focus will increase demand for services and workers	• Partnership health leaders should convene high level cluster meetings • Advocate for transfers within regional network of accredited courses (C6 project is opportunity to standardize curriculum), including for nursing • Collaborate with hospitals to unify employee competencies, translate to college curriculum • Expand nursing residencies across the Valley; coordinate with hospitals, community colleges, universities • Advocate for Regional Industry Clusters of Opportunity (RICO) funding • Expand mentoring programs • Coordinate with SJV Regional Broadband Consortium, employer networks like Central Valley Health Network, WIBs, etc. for e-health • Collaborate with Councils of Government, employers, transit agencies to develop more regional, coordinated transportation systems • Expand Patient Navigator, Promotora and other model programs • Coordinate with UC Merced Health Sciences Research Institute, CVBI, and entrepreneurship centers
Logistics	• Additional options for goods movement needed (non-truck) • Foreign Trade Zones underutilized • Emissions impact air quality and health • Issues identified at Regional Economic Summit	• Ensure coordination between Regional Policy Council/COGs (stakeholder planning process underway), SJV Air Pollution Control District, CCVEDC, Caltrans, Partnership Sustainable Communities Work Group, railroad companies on planning/projects • See Regional Economic Summit Strategy recommendations
Manufacturing	• Main issue for employers is workforce development • Lack of high-level engineering jobs in the Valley, so many students leave the region • Need cross-pollination of engineering workplace skills with existing workforce • Need appropriate infrastructure to create new products out of recycled products; waste commodities being shipped overseas	• Coordinate with C6 and California Center for Applied Competitive Technologies for increased training • Match resources of the universities to the manufacturers; connect internships with employers; support UCAM • Develop a strategy to close supplier gaps • Do policy advocacy (coordinated by REACON) on increase markets for recycling in California (Recycling BIN – Build Infrastructure Now)
Water Technology	• Demand for clean water, sustainable water resources & infrastructure is creating new business opportunities beyond agriculture • Issues identified at Regional Economic Summit	• Broaden focus of R&D to address diverse water supply and quality issues across an increased range of industries; coordinate with WET Center, Lyles College of Engineering, CVBI and other partners • Focus on growth of specific technologies (BlueTech Valley) • See Regional Economic Summit Strategy recommendations
Public Sector Infrastructure - (CCWC Project)	• RJI Construction Cluster not active • Lack of awareness regarding aggregated impact of public sector investments • Updated inventory of projects & schedules needed on ongoing basis • Coordination needed with economic development and planning to secure project funding	• Implement CCWC Regional Plan as Cluster Strategy for workforce • Coordinate with Partnership to advocate for public sector investment/local hiring • Identify lead to update project inventory and schedule • Coordinate with Regional Policy Council and SJV Economic Development District to link project priorities with possible funding sources

5.3 ORGANIZATIONAL RECOMMENDATIONS

The Cluster Action Plan findings and engagement process provide a platform to align organizational focus, initiatives and resources to support the evolution of the Valley's regional cluster initiatives. This section of the report provides recommendations for the role of the Partnership, and OCED at the regional scale, focused on the next stage of the New Valley initiative, including the organization of Work Groups to lead or support the Valley's Regional Innovation Clusters.

ROLE OF THE PARTNERSHIP

Given its mission and role, how and where can the Partnership best add value at the regional level for successful on-the-ground implementation and overall progress for the Valley? The stakeholder engagement process clearly identified that an important value-added role for the Partnership is to:

Network - Help connect the many efforts across the region that are cluster-based or support the clusters (cluster foundations such as infrastructure – including broadband, sustainable communities, financing, environmental quality, and education and workforce).

Convene – Play a convening role for the bigger valley-wide issues that are not being addressed in other forums, to drive the agenda for the growth and vitality of the clusters.

Integrate - Provide synergy across the region, helping to knit together the clusters, the issues and the initiatives to pursue shared priorities.

Advocate - Promote and advocate regarding cluster priorities on behalf of the Valley, including the removal of barriers, elevation of regional issues and opportunities, resource needs including funding, and networking with partners and investors outside of the region.

Catalyze – Be a catalyst for collaboration and the diffusion of innovation, including through the elevation of models.

The Partnership plays this role to varying degrees already. The next step is for more intentional engagement around a cluster-based economic strategy. Cluster processes are by their nature vehicles for engagement of champions, businesses, stakeholders and partners in regional strategies. During the course of the Project, ADE found that awareness of the Partnership was mixed. Proactive engagement of the Partnership around a core set of tangible initiatives will increase this awareness and expand its impact. Involvement of Board members in specific cluster areas such as health and wellness in a high level convening role (as well as participation in implementiation initiatives) was identified by cluster meeting participants as a very value-added activity. At the Partnership's September 2012 Boad meeting, the Executive Committee agreed to convene to discuss follow up on Project opportunities, including to identify a specific set of tangible initiatives for 2013, and provide guidance for the ongoing implementation of the Action Plan.

ROLE OF OCED/NEW VALLEY WORK GROUPS

As described in the report's Executive Summary, OCED plays a critical backbone role for the work of the Partnership and the New Valley. Implementation of the Cluster Action Plan will require an increase in or realignment of existing OCED capacity to support or lead the New Valley Work Groups; continue OCED's outreach, networking, coordination and consultation process around cluster opportunities; and engage new partners, stakeholders and leaders in Work Group and Action Plan initiatives.

As described earlier, there are ten Work Groups implementing aspects of the New Valley Initiative. Most of the Work Groups are led by regional partners, such as the California Central Valley EDC (Economic Development Work Group) and the Central California Workforce Collaborative (co-lead of the Higher Education and Workforce Development Work Group). Several of the Work Groups are managed by Fresno State institutes. As the Secretariat for the Partnership, OCED provides onoing support to the Work Groups. OCED also is the lead for the Advanced Communications Services Work Group (San Joaquin Valley Regional Broadband Consortium) and the Housing Work Group, and is reorganizing the Health and Human Services Work Group as the Health and Wellness Cluster Work Group, taking the opportunity to align the Work Group with cluster opportunities. OCED will manage this Work Group's for this transition. In addition, OCED supports the RJI which has twelve clusters, staffing two of them.

The Work Groups are in varying levels of capacity and operational status. Some need to be revitalized or refocused in terms of leads/champions, partners and work plans. Table 5.3-1 on p. 123 presents a proposed Work Group structure to facilitate Action Plan implementation. The table lists the proposed Work Groups, the lead and support entity, and key regional initiatives and partners to be involved. This listing is illustrative of the wide range of partners. There are other entities that need to be involved.

The Work Groups are sorted by those which are directly related to the specific clusters, such as Health and Wellness, Energy and Economic Development - the CCVEDC has targets across four clusters, and those which are related to the cluster foundations, such as broadband, air quality and workforce. These foundations support all the clusters. In most cases the Work Groups and lead groups are the same as before, but the Plan calls for a more proactive role for some of them, as described in the Key Cluster Action Plan Priorities in Section 5.2. OCED has been discussing with the partners the role they can and would like to play in Action Plan implementation, and will be following up with them to discuss specific Action Plan recommendations, how they fit with existing Work Group roles and activities, and how OCED can support the Work Groups to integrate the recommendations into their work plans.

Several of the recommended actions are related to the Economic Development Work Group. A major priority is the creation of a strategy to refine the list of economic development leakage targets identified in Chapter 4.7, and lead entity to execute the strategy. These targets are an opportunity for the Work Group and partners to take a more proactive role in leveraging regional and county-level economic development opportunities. Another opportunity is via the newly designated EDA-funded Economic Development District, wherein economic development leaders can collaborate with the San Joaquin

Valley Regional Policy Council as it identifies infrastructure project priorities that will be recommended through the San Joaquin Valley Interregional Goods Movement Plan process. Some of the projects may be eligible for EDA and other public sector infrastructure funds. These projects could contribute to the revitalization of the Construction Cluster, while helping to achieve mobility, air quality and other goals.

In addition to CCWC's regional work in the health and green economy arena (the Regional Industry Clusters of Opportunity Project funded by the California Workforce Investment Board, and the State Energy Sector Partnership Grant for renewable energy and recyclables), CCWC can play a major role in the public sector infrastructure arena related to workforce development and local job creation and skills building, through the implementation of the 2012 Workforce Development Plan. CCWC is encouraged to utilize the Partnership's website and other resources to establish increased visibility and a regional portal for the excellent information and strategies that have been developed, and to continue its model of collaboration and resource leveraging related to the region's industry cluster strategic priorities.

Figure 5.3-1 below illustrates the proposed New Valley Work Groups, the foundational support provided by OCED, and the role of the Partnership Executive Committee to support and guide the overall implementation of the Cluster Action Plan. Section 5.4 on implementation "Next Steps" (page 126) provides specific recommendations for the Partnership and OCED as well as the Work Groups.

FIGURE 5.3-1
PROPOSED WORK GROUPS

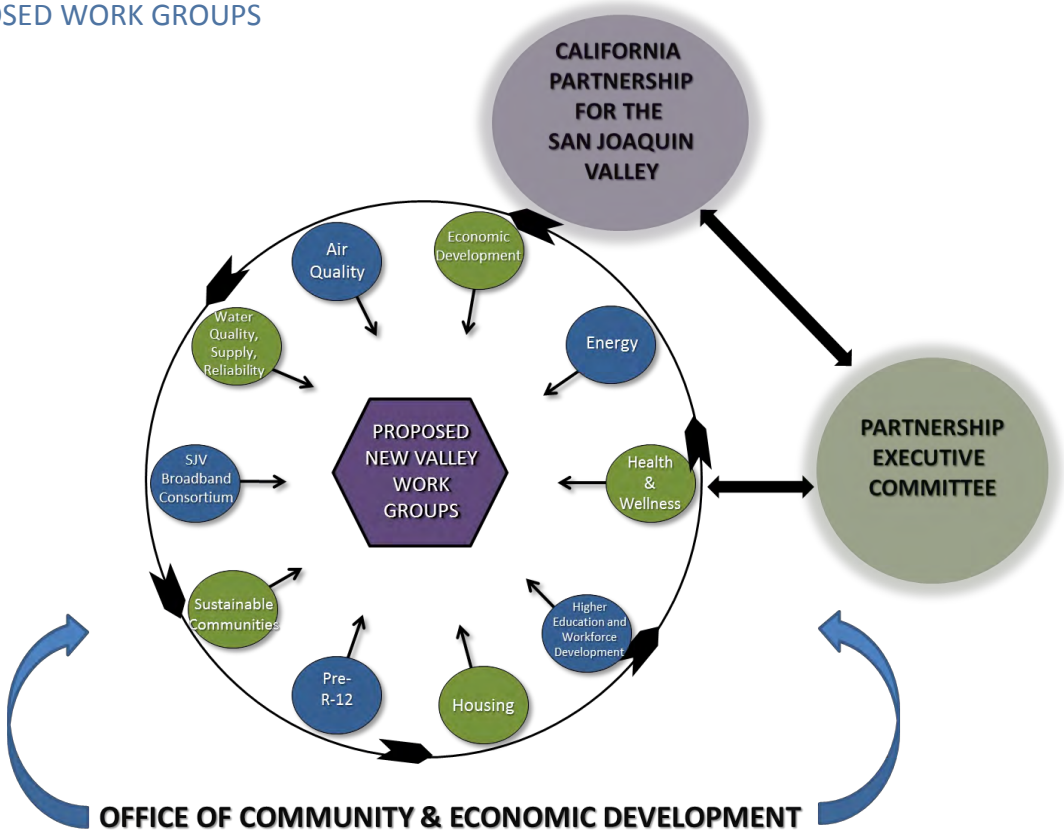


TABLE 5.3-1

PROPOSED WORK GROUP STRUCTURE FOR CLUSTER ACTION PLAN IMPLEMENTATION

Current Work Group	Proposed Work Group	Lead / Support	Key Regional Initiatives/Partners
Health and Human Services (not active)	Health and Wellness Cluster	Partnership Health Sector Board Members/OCED	• Central California Workforce Collaborative (CCWC) (RICO – Regional Industry Clusters of Opportunity) • C6 – Central California Community Colleges Committed to Change • Central Region Consortium (Community Colleges) • Hospital Council of Northern and Central California • Central Valley Health Network • San Joaquin Valley Nursing Education Consortium • UC Merced Health Sciences Research Institute • Councils of Government
Energy	Energy	SJV Clean Energy Organization/ OCED	• Regional Policy Council • CCVEDC • SJV Air Pollution Control District • Water and Energy Technology (WET) Center • Central Valley Business Incubator (Innovation Hub) • Utilities • Valley REACON (Recycling, Energy, Air, Conservation). Greater Stockton Chamber • Clean Energy Center, KCCD • CCWC (State Energy Sector Partnership) • C6 • Central Region Consortium • Business and Entrepreneurship Center • UC Advanced Solar Technologies Institute
Economic Development	Economic Development	California Central Valley EDC (CCVEDC)/ OCED	• Manufacturers Council of the Central Valley • Central Valley Business Incubator (Innovation Hub) • UC Merced SBDC Regional Network • Lyles Center for Innovation and Entrepreneurship • Merced College Business, Industry and Community Services • Business and Entrepreneurship Center, KCCD • CCWC • C6 • Central Region Consortium • International Center for Water Technology • California Centers for International Trade Development (State Center) • Valley REACON (Recycling, Energy, Air, Conservation). Greater Stockton Chamber • Jordan College of Agricultural Sciences and Technology, CSU Fresno • Craig School of Business, CSU Fresno • California Center for Applied Competitive Technologies (College of the Sequoias) • San Joaquin Valley Regional Policy Council • Fresno-Madera-Tulare-Kings Labor Council • North Valley Labor Federation
Advanced Communications	SJV Broadband Consortium	OCED	• Many Consortium Members, USDA Rural Development • Great Valley Center • Telecoms

TABLE 5.3-1

PROPOSED WORK GROUP STRUCTURE FOR CLUSTER ACTION PLAN IMPLEMENTATION (CONTINUED)

Current Work Group	Proposed Work Group	Lead / Support	Key Regional Initiatives/Partners
Air Quality	Air Quality	The Maddy Institute, CSU Fresno	• SJV Air Quality Pollution Control District • Regional Policy Council • Valley CAN (Clean Air Now) • Clean Energy Organization
Higher Education and Workforce Development	Higher Education and Workforce Development	Central California Workforce Collaborative, Central California Higher Education Consortium	• C6 • Central California Consortium • Workplace Learning Center Resource, Merced College • San Joaquin Valley Nursing Education Consortium • Centers of Excellence, Central California • Fresno-Madera-Tulare-Kings Labor Council • North Valley Labor Federation
Pre-K-12	Pre-K-12	Central Valley Educational Leadership Institute (Fresno State)	• C6 • Central California Workforce Collaborative
Housing	Housing	San Joaquin Valley Housing Collaborative/ OCED	• Councils of Government • Other Work Group Partners
Sustainable Communities (integration of Land Use, Housing and Agriculture Work Groups & Transportation Work Group in 2011)	Sustainable Communities	San Joaquin Valley Regional Policy Council	• Councils of Government • Smart Valley Places • SJV Rural Development Center • Central California Workforce Collaborative (Public Sector Infrastructure)
Water Quality, Supply and Reliability	Water Work Group	California Water Institute	• C6 • International Center for Water Technology (ICWT) • Water, Energy and Technology (WET) Center • Center for Irrigation Technology • SJV Clean Energy Org

Integrating the Action Plan's recommendations into the Work Group work plans will help align their work with and support key cluster priorities, but it will not address all of the seven Valley-wide clusters explicitly in terms of having a cluster lead entity and a specific action plan. Table 5.3-2 presents an option to organize regional Cluster Action Teams for each cluster, building on existing efforts and leaders. Some of these efforts currently have more capacity than others and OCED would need to work with the partners to see if they can take on a lead cluster role, and if CCVEDC could take on a support role with increased resources. The table shows how the action teams line up with the targeted cluster initiatives of the CCVEDC, CCWC and the Community Colleges.

TABLE 5.3-2
CLUSTER WORK GROUP OPTIONS FOR ACTION PLAN IMPLEMENTATION

PROPOSED NEW VALLEY CLUSTER ACTION TEAMS				
Valley-Wide Clusters	**Proposed Lead/Support**	**California Central Valley EDC (CCVEDC) Targets**	**Central California Workforce Collaborative (CCWC) Targets**	**Community Colleges Consortium Targets**
Agriculture Value Chain	Regional Economic Summit identified leads for different areas through the Partnership/ CCVEDC, OCED	Food Processing		C6 Project (Central California Community Colleges Committed to Change) (trades)
Health and Wellness	Health and Wellness Cluster Work Group/OCED		Regional Industry Clusters of Opportunity (seeking funding)	C6 Project
Manufacturing (cross-cluster)	Manufacturing Council of the San Joaquin Valley/ University Center to Advance Manufacturing/Center for Applied Competitive Technologies, OCED, CCVEDC	Manufacturing	State Sector Energy Partnership (recyclables)	C6 Project (trades)
Energy Including Renewable	San Joaquin Valley Clean Energy Org/ CCVEDC	Renewable Energy	State Sector Energy Partnership	C6 Project (trades)
Logistics and Distribution	San Joaquin Valley Regional Policy Council/ CCVEDC	Logistics		
Water Technology	International Center on Water Technology			
Public Sector Infrastructure – Construction (cross-cluster)	San Joaquin Valley Regional Policy Council		Public Sector Infrastructure Grant/Strategy	

5.4 NEXT STEPS

The following is a list of next steps for OCED and the Partnership to initiate and organize the implementation process for the Cluster Action Plan. Cluster strategies are vehicles for ongoing engagement of partners and stakeholders, but need dedicated focus and resources to yield action and results.

1.	**Work Group Leads/Work Plans.** OCED staff will meet with Work Group leads and partners to review Project findings and recommendations and alignment with existing work plans; confirm lead partners and expanded/refined roles; identify 2013 priority cluster initiatives; and support work plan updates and expanded engagement of stakeholders. OCED should convene the stakeholders from the June meeting of the Manufacturing/Energy/Logistics Clusters to identify cross-cluster priorities and actions. This process will be coordinated with the Partnership's Executive Committee. OCED should coordinate with USDA Rural Development and other champions on the implementation of the Ag Value Chain Regional Economic Summit action priorities.
2.	**Health and Wellness Cluster Work Group.** OCED should work with Partnership board members to convene the Cluster stakeholders to identify priorities, develop the work plan around Action Plan recommendations, and drive the implementation of the work plan.
3.	**Economic Development Targets.** OCED is working with CCVEDC and other partners on the process to develop a strategy for the Economic Development Targets (aggregated and cluster-specific), and identify a lead for implementation of the strategy. Partners should coordinate with TeamCalifornia to enhance marketing and outreach opportunities on the Valley's cluster priorities.
4.	**Economic Development/Education/Workforce Coordination.** OCED should develop a process for increased, systemic linkages between economic development, education, and workforce development partners (CCVEDC, CCWC, Central Region Consortium, C6, universities) around regionalized cluster-focused issues. The partners should collaborate to seek funding support for: research to identify priority workforce gaps and occupational demand; designated staff to facilitate the coordination process across the clusters and the systems; expanding the reach of innovative training programs. OCED should facilitate integrated connections with state partners such as the California Workforce Investment Board, California Labor and Workforce Development Agency, Chancellor's Office, the Employment Training Panel, and the U.S. Dept. of Labor.
5.	**Public Sector Infrastructure/Logistics.** OCED should convene the CCWC, the SJV Regional Policy Council, CCVEDC, Caltrans, labor, and other partners to link the interregional goods movement planning process and CCWC's Public Sector Infrastructure Workforce Plan, including for identification of project funding priorities, funding sources for construction projects, and workforce development needs. Leverage the new Economic Development District.
6.	**Work Group Coordination.** OCED should convene the leadership of the New Valley Work Groups quarterly for updates on their work plans, and facilitate coordination across Work Groups and initiatives on an ongoing basis.
7.	**Regional/State Economic Summits.** The Partnership and OCED will continue coordination with the statewide economic summit process, and align the annual outcomes of the Work Group work plans for the Valley's next regional economic summit (fall of 2013) and state-wide summit (late 2013). OCED and the Work Groups should report on the progress of the 2013 cluster initiatives at the next Regional Economic Summit.
8.	**Reporting Process.** OCED should develop a process to report on Cluster Action Plan activities, metrics and progress to the Partnership's Executive Committee on an ongoing basis. The growth of the clusters should be tracked as an annual metric.
9.	**Communications.** OCED should create a dedicated location on the Partnership's website for the Cluster Action Plan and resource materials, building upon the Regional Economic Summit materials. It should use the Cluster Action Plan implementation as a vehicle for communications about the Partnership, and as a portal to partner initiatives and resources.

As part of its ongoing mission and role, OCED will continue to connect with state, federal and other partners to ensure alignment with the Cluster Action Plan. One of the most timely is the *"Doing What Matters for Jobs and the Economy,"* a new initiative of the California Community Colleges, Division of Workforce and Economic Development. Its goals are to supply in-demand skills for employers, create relevant career pathways and stackable credentials, promote student success, and get Californias into open jobs. The focus is on spurring job creation and bridging skills gaps in priority/emergent sectors and clusters; taking effective practices to scale; integrating and leveraging programming between funding streams; promoting metrics for student success; and removing structural barriers. This initiative is in collaboration with the California Workforce Investment Board as it prepares the State Strategic Workforce Plan.

The Central California Community Colleges Committed to Change (C6) Project and the Central Region Consortium (Community Colleges members) are partners in the development of the Cluster Action Plan and OCED will host and is planning with these partners for a Valley-wide meeting on linking the clusters with the initiative.

Other examples of resource assets include the federal partnership for the Strong Cities Strong Communities (SC2) initiative, especially related to the development of the region's Ag Tech Cluster and regional broadband capacity; the new resource guide on access to capital to support local economies and regional clusters, developed by the California Financial Opportunities Roundtable (CalFOR); and a possible new regional task force on workforce and small business development opportunities, organized by the Federal Reserve Bank of California. OCED also will connect with Valley Vision which is preparing the regional cluster strategy for the Sacramento region – the Next Economy – to explore cross-regional collaboration opportunities related to common clusters such as food and agriculture.

In terms of the RJI and OCED's role, it will be important for OCED to concentrate on supporting the organization and management of the core regional cluster priority action areas, and filling in leadership gaps where necessary. There is an opportunity for the RJI to benefit from integration with a more regionalized approach on shared issues.

APPENDIX – A: CLUSTER MEETING PARTICIPANTS

HEALTH AND WELLNESS CLUSTER MEETING PARTICIPANTS

FRESNO STATE UNIVERSITY, MAY 24, 2012, FRESNO		
NAME	TITLE	ORGANIZATION
Arakel Arisian	Principal	Arisian Development
Lynn Ashbeck	Regional Vice President	Hospital Council of Northern and Central California
Tim Curley	Director, Community and Government Relations	Childrens Hospital Central California
Jerry Dickerson, PMP	Project Manager, Corp. IT	Community Medical Centers
Randy Dodd	Vice President, Business Development and Strategic Planning	Adventist Health
Mike Dozier	Executive Director, Office of Community & Economic Development	Fresno State
Chaz Felix, J.D.	Health Policy Fellow	Central Valley Health Policy Institute
Nicole Ferreira	Workforce Analyst	Tulare Workforce Investment Board
Carole Goldsmith	Vice Chancellor, Project Director C6	Educational Services & Workforce Development, West Hills Community College
Jose Gonzalez	Health Promotion Specialist	Health Net Community Solutions
Nancy Hoff	MSN,RN, Health Care RED Team Leader	Central California Community Colleges Committed to Change (C6) Consortium
Trish Kelly	Principal	Applied Development Economics
Mary Renner	Chief Operations Officer	Central Valley Health Network
Stephanie Robinson	Director of Nursing	Fresno City College
Veronica Salas	Economic Development Analyst	Fresno Economic Development Corporation
Matt Severson	Corporate Locations Coordinator	Fresno Economic Development Corporation
Susan Smilie Janecek	Director of Research and Development	San Joaquin Valley College
Kathie Studwell	Senior Associate	Applied Development Economics
John G. Taylor	Director, Public Affairs	Community Medical Centers
Jim VanDeVelde	Associate Administrator	Community Regional Medical Center
Reyna Villalobos	Community Building Specialist	Central California Regional Obesity Prevention Program (CCROPP)

APPENDIX – A (CONTINUED)

HEALTH AND WELLNESS CLUSTER MEETING PARTICIPANTS

GREAT VALLEY CENTER, JUNE 6, 2012, MODESTO		
NAME	**TITLE**	**ORGANIZATION**
Mike Amman	President/CEO	San Joaquin Partnership
Arakel Arisian	Principal	Arisian Development
Janalynn Castillo	Public Affairs Representative	Planned Parenthood Mar Monte
Paula Chiarmonte	Senior Research Analyst Business Resource Center	Stanislaus Economic Development and Workforce Alliance
Charleen Chituras	Owner	InVision Development
Jennifer Downs-Colby	Assistant Manager, Community Benefits and Volunteer Services	Memorial Medical Center
Valerie A. Fisher, RN, MA	Project Director, Innovate What Matters-Allied Health	Ca. Community College Chancellor's Office Division of Workforce and Economic Development
Cathy Frey	CEO	Central Valley Health Network
Heidi E. Hall	Program Manager	Merced County Human Services Agency
Corwin N. Harper	Senior Vice President/Area manager	Kaiser Permanente, Central Valley, Modesto
Ismael Herrera	Director, Rural Development Center	Fresno State
Nancy Hoff	MSN,RN, Health Care RED Team Leader	Central California Community Colleges Committed to Change (C6) Consortium
Linda Hoile	Program Manager	Great Valley Center
Trish Kelly	Principal	Applied Development Economics
Warren Kirk	CEO	Doctors Medical Center of Modesto
Adolph Lopez	Program Manager	Alliance Worknet, Stanislaus County
Dotty Nygard, RN, BSN	Vice Mayor	City of Riverbank
Rebecca Petty	Family Services Supervisor	Merced County Human Services Agency
Jeff Rowe	Workforce Development Director	Alliance Worknet, Stanislaus County
Heidi Santino	Executive Director	Stanislaus Health Foundation
Kurt Schuparra, Ph.D.	Assistant Secretary	California Labor & Workforce Development Agency
Scott Seamons	Regional Vice President	Hospital Council of Northern and Central California
Dejeune Shelton	Executive Director	Great Valley Center
Geneva Skram	Community Coordinator	University of California, Merced
Kathie Studwell	Senior Associate	Applied Development Economics
Robert Tse	Special Projects Lead	USDA CA Rural Development
Kim Viviano	Fitness Program Manager	Health Aging Association

APPENDIX – A (CONTINUED)

HEALTH AND WELLNESS CLUSTER MEETING PARTICIPANTS

WEILL CENTER, KERN COMMUNITY COLLEGE DISTRICT, JUNE 21, 2012, BAKERSFIELD		
NAME	**TITLE**	**ORGANIZATION**
Debra Anderson	Agency Representative	San Joaquin Valley College, Bakersfield
Arakel Arisian	Principal	Arisian Development
Aurora Cooper	Human Resources Director	National Health Services, Inc.
Candy Gettman	Deputy Director	Employers' Training Resource
Karen K. Goh	Supervisor	Fifth District, County of Kern
Freddy Hernandez	Assistant Director	Clinica Sierra Vista
Teresa Hitchcock	Administrative Analyst, Economic Development	Kern County Administrative Office
Nancy Hoff, MSN, RN	Health Care RED Team Leader	Ca. Community College colleges Committed to Change (C6) Consortium
Pam Holiwell	Assistant Director	Employment and Financial Services, Department of Human Services, Kern County
Myrna James	Case Manager	Kern County Career Services Center
Fiona Kelly	Business Services Coordinator	Business and Entrepreneurship Center Kern Community College District
Trish Kelly	Principal	Applied Development Economics
Sean Kenny	Wellness Coordinator	Mercy and Memorial Hospitals
Cori Kitchen	Business and Grants Development Coordinator	Kern Economic Development Corporation
Dr. Kathleen Knutzen	Dean, School of Social Sciences and Education	California State University Bakersfield
Robin Mangarin-Scott	Director of Strategic Marketing	Dignity Health
John Means	Associate Vice Chancellor, Economic and Workforce Development President, CCCAOE	Kern Community College District
Ali Morris	President	Kern County Black Chamber of Commerce
Ralph Martinez	Director, Planning, Research and Development	Community Action Partnership of Kern
David Michael	Associate Direction of Administrative Health Services	National Health Services, Inc.
Dan Murray	Kern/Inyo/Mono WIB Executive Committee Member	NTrust Healthcare LLC

APPENDIX – A (CONTINUED)

HEALTH AND WELLNESS CLUSTER MEETING PARTICIPANTS

WEILL CENTER, KERN COMMUNITY COLLEGE DISTRICT, JUNE 21, 2012, BAKERSFIELD (CONTINUED)		
NAME	**TITLE**	**ORGANIZATION**
Dr. Avtar Nijjer-Sidhu	Senior Health Educator, Environmental Health Division	Public Health Services Dept., County of Kern
Robert Pimentel	Interim, Director, C6 Project	West Hills Community College District
Pritika Ram	Executive Assistant	Clinica Sierra Vista
Mary Renner	Chief Operations Officer	Central Valley Health Network
Stefanie Robinson	Director of Nursing	Fresno City College
Annalisa Robles	Program Manager	The California Endowment
Lucas Rucks	Educational Advisor/ Program Manager	Bakersfield College Allied Health Department
Steve Schilling	CEO	Clinica Sierra Vista
Cheryl Scott	Vice President	Kern Economic Development Corporation
Eman Shurabaji	Grant Writer	Alzheimer's Disease Association of Kern County
Andy Stanley	Field Representative	Office of Supervisor Karen Goh, County of Kern Fifth District
Bonita Steele	Director, Grants/Resource Development	Kern Community College District
Ashley Vorhees	NHWP Community Director - Kern County, Viridian Region Manager	Viridian Health Management
Kelly Walters	Campus Director	San Joaquin Valley College, Bakersfield
Gayle Winters	Case Manager	Kern County Career Services Center
Dr. Jim Young	Arvin Resident	"We the People," Arvin High School

APPENDIX – A (CONTINUED)

MANUFACTURING/LOGISTICS/ENERGY TECHNOLOGY CLUSTER MEETING PARTICIPANTS

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, JUNE 11TH, 2012, FRESNO		
NAME	TITLE	ORGANIZATION
Angela Allison	Director, Special Grants	West Hills Community College District
Mike Ammann	CEO	San Joaquin Partnership
Arakel Arisian	Principal	Arisian Development
Darnell Austin	Professor, Industrial Technology, Co-Director	Fresno State
Vincent Bischoff	Western Region Sales Manager	National Pump Company
Justine Blanchet	Training Associate	GRID Alternatives
Melinda Brown	Director of Business Development	Kern EDC
Clint Cowden	Instructor, Ag Science & Technology	West Hills College
Monica Cuevas	Dean of Students, Madera Center	State Center Community College
Nathalie Culver-Dockins	Dean, Workforce Development	Fresno City College
Mike Dozier	Director, Office of Community and Economic Development	Fresno State
Ron Durbin	Executive Director	University of California Advanced Solar Technologies Institute
Shari Bender Ehlert	Director, District 6	Caltrans
Frank J. Ferral	Program & Public Policy Director	Greater Stockton Chamber of Commerce
Charles Francis	Director	Fresno City College Training Institute
Candy Gettman	Deputy Director	Employers Training Resources
Carole Goldsmith, Ed. D.	Vice Chancellor, Educational Services & Workforce Development	West Hills Community College District
Steve Haze	1st Vice President	Yosemite Sequoia
Terri Hicks	Director, Business & Entrepreneurship Center	Kern Community College District
Aaron Husak	Home Energy Auditor	ConSol (Independent Contractor)
Jerry James	Director of Corporate Sales	Farm Grown
Ed Jones	Division Director	Sequoia Community Corps
Tom Jordan	Senior Policy Advisor	San Joaquin Valley Air Pollution Control District
Courtney Kalashian	Associate Executive Director	Clean Energy Organization, California Partnership for the San Joaquin Valley
Kristin Kawaguchi	Investor Relations Manager	EDC Serving Fresno County

APPENDIX – A (CONTINUED)

MANUFACTURING/LOGISTICS/ENERGY TECHNOLOGY CLUSTER MEETING PARTICIPANTS

SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT, JUNE 11TH, 2012, FRESNO (CONTINUED)		
NAME	**TITLE**	**ORGANIZATION**
Trish Kelly	Principal	Applied Development Economics
Pam Lassetter	RICO Program Manager	Workforce Connection, Fresno WIB
John Lehn	President	Kings County Economic Development Corporation
Adriane Lepage	Project Assistant	Applied Development Economics
Ed Martin	Regional Manager	Proteus Group
Donald McCoon	Owner	McCoon Commercial Real Estate
Sandi Miller	Business Services Team	Tulare Workforce Investment Board
Mark Miller	Talent Acquisition Manager	Jason Ryan & Associates
William Myers	Managing Partner	Fresno Strategic Consulting
Walter Mizuno	Co-Director, UCAM	Lyles College for Engineering, Fresno State
Helle Peterson	General Manager	Water, Energy & Technology Center
Robert Pimentel, MSW	Interim Director, C6 Project	West Hills Community College District
Tim Rainey	Executive Director	California Workforce Investment Board
Barbara Rodiek	COO	Central Valley Business Incubator
Paulette Rush	Business Development Associate	Kern EDC
Michael A. Sandoval	Facilities & Engineering Manager	I Love to Create
Michael Sigala	Valleywide Coordinator	Regional Policy Council
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Louann Waldner, PhD	Director	Center for Applied Competitive Technologies
Pete Weber	Executive Committee Chair	California Partnership for the San Joaquin Valley

APPENDIX – B: CLUSTER NAICS DEFINITIONS BY COMPONENTS

AGRICULTURE CLUSTER

SUPPORT			
221310	Water Supply and Irrigation Systems	541380	Testing Laboratories
237110	Water and Sewer Line and Related Structures Construction	541613	Marketing Consulting Services
325311	Nitrogenous Fertilizer Manufacturing	541614	Process, Physical Distribution, and Logistics Consulting Services
325312	Phosphatic Fertilizer Manufacturing	541820	Public Relations Agencies
325314	Fertilizer (Mixing Only) Manufacturing	541830	Media Buying Agencies
325320	Pesticide and Other Agricultural Chemical Manufacturing	541840	Media Representatives
326291	Rubber Product Manufacturing for Mechanical Use	541850	Display Advertising
326299	All Other Rubber Product Manufacturing	541870	Advertising Material Distribution Services
332311	Prefabricated Metal Building and Component Manufacturing	541890	Other Services Related to Advertising
332420	Metal Tank (Heavy Gauge) Manufacturing	541940	Veterinary Services
333111	Farm Machinery and Equipment Manufacturing	551111	Offices of Bank Holding Companies
333112	Lawn and Garden Tractor and Home Lawn and Garden Equipment Manufacturing	551112	Offices of Other Holding Companies
333294	Food Product Machinery Manufacturing	551114	Corporate, Subsidiary, and Regional Managing Offices
333911	Pump and Pumping Equipment Manufacturing	561110	Office Administrative Services
333924	Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing	561310	Employment Placement Agencies
333992	Welding and Soldering Equipment Manufacturing	561320	Temporary Help Services
333993	Packaging Machinery Manufacturing	551112	Offices of Other Holding Companies
423820	Farm and Garden Machinery and Equipment Merchant Wholesalers	551114	Corporate, Subsidiary, and Regional Managing Offices
423830	Industrial Machinery and Equipment Merchant Wholesalers	561110	Office Administrative Services
423840	Industrial Supplies Merchant Wholesalers	561310	Employment Placement Agencies
423850	Service Establishment Equipment and Supplies Merchant Wholesalers	561320	Temporary Help Services
423860	Transportation Equipment and Supplies (except Motor Vehicle) Merchant Wholesalers	561710	Exterminating and Pest Control Services
444210	Outdoor Power Equipment Stores	561730	Landscaping Services
444220	Nursery, Garden Center, and Farm Supply Stores	562213	Solid Waste Combustors and Incinerators
522292	Real Estate Credit	562219	Other Nonhazardous Waste Treatment and Disposal
532490	Other Commercial and Industrial Machinery and Equipment Rental and Leasing	562920	Materials Recovery Facilities
541360	Geophysical Surveying and Mapping Services	811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance
541370	Surveying and Mapping (except Geophysical) Services		

PRODUCTION			
111	Crop Production	115111	Cotton Ginning
112	Animal Production	115112	Soil Preparation, Planting, and Cultivating
113110	Timber Tract Operations	115113	Crop Harvesting, Primarily by Machine
113210	Forest Nurseries and Gathering of Forest Products	115114	Postharvest Crop Activities (except Cotton Ginning)
114111	Finfish Fishing	115115	Farm Labor Contractors and Crew Leaders
114112	Shellfish Fishing	115116	Farm Management Services
114119	Other Marine Fishing	115210	Support Activities for Animal Production
114210	Hunting and Trapping	115310	Support Activities for Forestry
114210	Crop Production		

APPENDIX – B (CONTINUED)

PROCESSING			
311111	Dog and Cat Food Manufacturing	311919	Other Snack Food Manufacturing
311119	Other Animal Food Manufacturing	311920	Coffee and Tea Manufacturing
311211	Flour Milling	311930	Flavoring Syrup and Concentrate Manufacturing
311212	Rice Milling	311941	Mayonnaise, Dressing, and Other Prepared Sauce Manufacturing
311213	Malt Manufacturing	311942	Spice and Extract Manufacturing
311221	Wet Corn Milling	311991	Perishable Prepared Food Manufacturing
311222	Soybean Processing	311999	All Other Miscellaneous Food Manufacturing
311223	Other Oilseed Processing	312111	Soft Drink Manufacturing
311225	Fats and Oils Refining and Blending	312112	Bottled Water Manufacturing
311230	Breakfast Cereal Manufacturing	312113	Ice Manufacturing
311311	Sugarcane Mills	312120	Breweries
311312	Cane Sugar Refining	312130	Wineries
311313	Beet Sugar Manufacturing	312140	Distilleries
311320	Chocolate and Confectionery Manufacturing from Cacao Beans	312210	Tobacco Stemming and Redrying
311330	Confectionery Manufacturing from Purchased Chocolate	312221	Cigarette Manufacturing
311340	Nonchocolate Confectionery Manufacturing	312229	Other Tobacco Product Manufacturing
311411	Frozen Fruit, Juice, and Vegetable Manufacturing	313111	Yarn Spinning Mills
311412	Frozen Specialty Food Manufacturing	313112	Yarn Texturizing, Throwing, and Twisting Mills
311421	Fruit and Vegetable Canning	313113	Thread Mills
311422	Specialty Canning	313210	Broadwoven Fabric Mills
311423	Dried and Dehydrated Food Manufacturing	313221	Narrow Fabric Mills
311511	Fluid Milk Manufacturing	313230	Nonwoven Fabric Mills
311512	Creamery Butter Manufacturing	313241	Weft Knit Fabric Mills
311513	Cheese Manufacturing	313249	Other Knit Fabric and Lace Mills
311514	Dry, Condensed, and Evaporated Dairy Product Manufacturing	316110	Leather and Hide Tanning and Finishing
311520	Ice Cream and Frozen Dessert Manufacturing	321113	Sawmills
311611	Animal (except Poultry) Slaughtering	321920	Wood Container and Pallet Manufacturing
311612	Meat Processed from Carcasses	322211	Corrugated and Solid Fiber Box Manufacturing
311613	Rendering and Meat Byproduct Processing	322212	Folding Paperboard Box Manufacturing
311615	Poultry Processing	322213	Setup Paperboard Box Manufacturing
311711	Seafood Canning	322214	Fiber Can, Tube, Drum, and Similar Products Manufacturing
311712	Fresh and Frozen Seafood Processing	322215	Nonfolding Sanitary Food Container Manufacturing
311811	Retail Bakeries	322291	Sanitary Paper Product Manufacturing
311812	Commercial Bakeries	325411	Medicinal and Botanical Manufacturing
311813	Frozen Cakes, Pies, and Other Pastries Manufacturing	325414	Biological Product (except Diagnostic) Manufacturing
311821	Cookie and Cracker Manufacturing	326111	Plastics Bag and Pouch Manufacturing
311822	Flour Mixes and Dough Manufacturing from Purchased Flour	326160	Plastics Bottle Manufacturing
311823	Dry Pasta Manufacturing	327213	Glass Container Manufacturing
311830	Tortilla Manufacturing	332115	Crown and Closure Manufacturing
311911	Roasted Nuts and Peanut Butter Manufacturing	332431	Metal Can Manufacturing

APPENDIX – B (CONTINUED)

DISTRIBUTION			
424410	General Line Grocery Merchant Wholesalers	481212	Nonscheduled Chartered Freight Air Transportation
424420	Packaged Frozen Food Merchant Wholesalers	481219	Other Nonscheduled Air Transportation
424430	Dairy Product (except Dried or Canned) Merchant Wholesalers	482	Rail Transportation
424440	Poultry and Poultry Product Merchant Wholesalers	483111	Deep Sea Freight Transportation
424450	Confectionery Merchant Wholesalers	483112	Deep Sea Passenger Transportation
424460	Fish and Seafood Merchant Wholesalers	483113	Coastal and Great Lakes Freight Transportation
424470	Meat and Meat Product Merchant Wholesalers	483114	Coastal and Great Lakes Passenger Transportation
424480	Fresh Fruit and Vegetable Merchant Wholesalers	483211	Inland Water Freight Transportation
424490	Other Grocery and Related Products Merchant Wholesalers	483212	Inland Water Passenger Transportation
424510	Grain and Field Bean Merchant Wholesalers	484110	General Freight Trucking, Local
424520	Livestock Merchant Wholesalers	484121	General Freight Trucking, Long-Distance, Truckload
424590	Other Farm Product Raw Material Merchant Wholesalers	484122	General Freight Trucking, Long-Distance, Less Than Truckload
424810	Beer and Ale Merchant Wholesalers	484220	Specialized Freight (except Used Goods) Trucking, Local
424820	Wine and Distilled Alcoholic Beverage Merchant Wholesalers	484230	Specialized Freight (except Used Goods) Trucking, Long-Distance
424910	Farm Supplies Merchant Wholesalers	488111	Air Traffic Control
424930	Flower, Nursery Stock, and Florists' Supplies Merchant Wholesalers	488119	Other Airport Operations
445110	Supermarkets and Other Grocery (except Convenience) Stores	488190	Other Support Activities for Air Transportation
445120	Convenience Stores	488210	Support Activities for Rail Transportation
445210	Meat Markets	488310	Port and Harbor Operations
445220	Fish and Seafood Markets	488320	Marine Cargo Handling
445291	Baked Goods Stores	488390	Other Support Activities for Water Transportation
445292	Confectionery and Nut Stores	488510	Freight Transportation Arrangement
445299	All Other Specialty Food Stores	488991	Packing and Crating
445310	Beer, Wine, and Liquor Stores	493110	General Warehousing and Storage
481111	Scheduled Passenger Air Transportation	493120	Refrigerated Warehousing and Storage
481112	Scheduled Freight Air Transportation	493190	Other Warehousing and Storage
481211	Nonscheduled Chartered Passenger Air Transportation		

ENERGY CLUSTER

ALTERNATIVE ENERGY GENERATION/PRODUCTION			
23711	Water and Sewer Line and Related Structures Construction	311223	Other Oilseed Processing
23816	Roofing Contractors	325193	Ethyl Alcohol Manufacturing

ALTERNTIVE ENERGY DISTRIBUTION			
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		

APPENDIX – B (CONTINUED)

ENERGY EFFICIENCY			
23821	Electrical Contractors and Other Wiring Installation Contractors	23831	Drywall and Insulation Contractors
23822	Plumbing, Heating, and Air-Conditioning Contractors		

EQUIPMENT MANUFACTURING			
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		

PETROLEUM PRODUCTION & PETROLEUM DISTRIBUTION			
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		

POWER GENERATION AND TRANSMISSION			
221111	Hydroelectric Power Generation	221121	Electric Bulk Power Transmission and Control
221112	Fossil Fuel Electric Power Generation	221122	Electric Power Distribution
221113	Nuclear Electric Power Generation	221210	Natural Gas Distribution
221119	Other Electric Power Generation	237120	Oil and Gas Pipeline and Related Structures Construction
		237130	Power and Communication Line and Related Structures Construction

RESEARCH & SERVICES			
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 – B (CONTINUED)

HEALTH AND WELLNESS CLUSTER

HEALTH CARE DELIVERY			
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 Rehabilition Services

MEDICAL DEVICE MANUFACTURING			
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		

PHARMACEUTICALS			
325411	Medicinal and Botanical Manufacturing	325413	In-Vitro Diagnostic Substance Manufacturing
325412	Pharmaceutical Preparation Manufacturing	325414	Biological Product (except Diagnostic) Manufacturing

SUPPLIES AND SERVICES			
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		

WELLNESS AND FITNESS			
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 – B (CONTINUED)

LOGISTICS CLUSTER

AIR, RAIL, WATER TRANSPORTATION			
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

FREIGHT & WAREHOUSING			
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

OTHER SERVICES			
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		

RELATED MANUFACTURING			
336120	Heavy Duty Truck Manufacturing	336611	Ship Building and Repairing
336510	Railroad Rolling Stock Manufacturing	336612	Boat Building

TRANSIT			
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

MANUFACTURING CLUSTER (CROSS-CLUSTER)

HEALTH & WELLNESS MANUFACTURING			
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		

APPENDIX – B (CONTINUED)

FOOD PROCESSING			
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
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

APPENDIX – B (CONTINUED)

ENERGY RELATED MANUFACTURING			
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

LOGISTICS MANUFACTURING			
336120	Heavy Duty Truck Manufacturing	336611	Ship Building and Repairing
336510	Railroad Rolling Stock Manufacturing		

WATER TECHNOLOGY MANUFACTURING			
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

HEALTH & WELLNESS MANUFACTURING			
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		

OTHER MANUFACTURING			
31-33	All Manufacturing Industries not listed above		

WATER TECHNOLOGY CLUSTER

2007 NAICS U.S. TITLE			
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

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APPENDIX – D: CLUSTER COMPONENT DATA BY COUNTY

AGRICULTURE CLUSTER

Regional Total	Agriculture and Food Cluster Total	Agriculture and Food Cluster - Support	Agriculture and Food Cluster - Production	Agriculture and Food Cluster - Processing and Packaging	Agriculture and Food Cluster - Distribution
2010 Allocated Employment	289,014	119,394	81,795	62,579	25,246
Percent Change, 2001 to 2010	2.9%	2.9%	-6.6%	9.0%	27.5%
Location Quotient	4.14	5.50	4.93	3.33	1.98
Shift-Share	4.56%	-0.53%	2.61%	18.19%	12.13%
Fresno County Total					
2010 Allocated Employment	71,454	32,519	18,093	14,673	6,169
Percent Change, 2001 to 2010	-2.7%	-3.3%	-10.4%	5.5%	7.4%
Location Quotient	3.87	5.66	4.12	2.96	1.83
Shift-Share	-1.10%	-6.65%	-1.25%	14.66%	-7.97%
Kern County Total					
2010 Allocated Employment	57,107	30,451	17,221	5,768	3,667
Percent Change, 2001 to 2010	9.6%	7.2%	-1.8%	51.2%	54.5%
Location Quotient	3.89	6.67	4.93	1.46	1.37
Shift-Share	11.21%	3.86%	7.39%	60.31%	39.08%
Kings County Total					
2010 Allocated Employment	10,712	2,931	3,934	3,515	332
Percent Change, 2001 to 2010	8.0%	-16.0%	6.9%	46.7%	-5.8%
Location Quotient	5.46	4.81	8.44	6.67	0.93
Shift-Share	9.68%	-19.33%	16.10%	55.86%	-21.19%
Madera County Total					
2010 Allocated Employment	12,452	6,160	4,737	1,138	416
Percent Change, 2001 to 2010	6.6%	9.1%	2.7%	-4.8%	85.4%
Location Quotient	5.45	8.67	8.72	1.85	1.00
Shift-Share	8.27%	5.77%	11.86%	4.34%	69.98%
Merced County Total					
2010 Allocated Employment	19,788	4,477	7,333	6,085	1,894
Percent Change, 2001 to 2010	-1.9%	0.4%	-5.6%	-6.2%	30.3%
Location Quotient	5.48	3.99	8.54	6.27	2.88
Shift-Share	-0.23%	-2.97%	3.56%	2.99%	14.94%
San Joaquin Total					
2010 Allocated Employment	34,423	10,482	8,051	9,079	6,811
Percent Change, 2001 to 2010	1.1%	3.0%	-24.5%	1.6%	58.9%
Location Quotient	2.96	2.91	2.93	2.86	3.23
Shift-Share	3.01%	-0.33%	-15.31%	11.52%	43.54%
Stanislaus County Total					
2010 Allocated Employment	34,258	7,825	7,299	15,595	3,539
Percent Change, 2001 to 2010	-6.8%	-23.2%	-4.5%	-0.8%	10.6%
Location Quotient	3.65	2.68	3.27	6.18	2.07
Shift-Share	-5.15%	-26.59%	4.67%	8.38%	-4.80%
Tulare County Total					
2010 Allocated Employment	48,819	24,549	15,127	6,725	2,418
Percent Change, 2001 to 2010	14.4%	22.1%	-2.0%	35.8%	11.7%
Location Quotient	6.21	10.04	8.08	3.18	1.69
Shift-Share	16.05%	18.67%	7.15%	44.91%	-3.70%

APPENDIX – D (CONTINUED) – ENERGY CLUSTER

Regional Total	Energy Cluster Total	Energy Core – Alt Energy Distribution	Energy Core - Alt Energy Production	Energy Core - Energy Efficiency	Energy Core - Equipment Mfg.	Energy Core - Petroleum	Energy Core - Petroleum Distribution	Energy Core - Power Generation	Energy Related - Services and Research
2010 Allocated Employment	33,353	1,572	3,758	13,697	820	4,516	1,701	4,781	2,507
Percent Change, 2001 to 2010	-6.9%	-0.7%	1.7%	-27.1%	38.3%	5.3%	24.3%	35.9%	26.2%
Location Quotient	1.01	0.40	1.06	0.96	0.31	2.18	2.03	1.39	1.11
Shift-Share	13.32%	20.55%	-5.55%	-0.33%	80.04%	2.80%	21.39%	50.89%	21.91%
Fresno County Total									
2010 Allocated Employment	8,222	469	1,176	3,696	50	87	243	1,756	745
Percent Change, 2001 to 2010	-2.7%	-10.2%	12.8%	-22.4%	305.1%	278.3%	49.1%	29.5%	32.0%
Location Quotient	0.94	0.45	1.25	0.98	0.07	0.16	1.10	1.93	1.24
Shift-Share	17.53%	11.13%	5.52%	4.34%	346.81%	275.83%	46.15%	44.48%	27.64%
Kern County Total									
2010 Allocated Employment	11,679	396	879	3,238	447	4,381	663	905	769
Percent Change, 2001 to 2010	9.4%	-7.1%	43.0%	-3.8%	57.5%	4.3%	94.4%	1.9%	38.8%
Location Quotient	1.68	0.47	1.18	1.08	0.81	10.06	3.77	1.25	1.62
Shift-Share	29.59%	14.15%	35.79%	22.94%	99.21%	1.76%	91.50%	16.86%	34.50%
Kings County Total									
2010 Allocated Employment	578	24	144	243	0	0	34	69	64
Percent Change, 2001 to 2010	-11.1%	2.2%	79.3%	-24.2%	-100.0%	-100.0%	-46.8%	-35.5%	140.8%
Location Quotient	0.62	0.21	1.45	0.61	0.00	0.00	1.43	0.71	1.01
Shift-Share	9.14%	23.48%	72.10%	2.59%	-58.29%	-102.51%	-49.70%	-20.53%	136.44%
Madera County Total									
2010 Allocated Employment	752	10	168	297	52	12	37	127	49
Percent Change, 2001 to 2010	-26.5%	N/A	-39.8%	-38.1%	7619.4%	N/A	-77.0%	92.4%	29.4%
Location Quotient	0.70	0.08	1.45	0.64	0.60	0.18	1.34	1.13	0.66
Shift-Share	-6.27%	N/A	-47.04%	-11.35%	7661.12%	N/A	-79.88%	107.41%	25.06%
Merced County Total									
2010 Allocated Employment	1,005	27	129	431	61	0	47	213	96
Percent Change, 2001 to 2010	-32.5%	-24.3%	-1.5%	-34.8%	-75.0%	N/A	-34.7%	-23.9%	50.6%
Location Quotient	0.59	0.13	0.70	0.59	0.45	0.00	1.09	1.20	0.82
Shift-Share	-12.29%	-3.01%	-8.74%	-8.05%	-33.28%	N/A	-37.65%	-8.92%	46.27%
San Joaquin Total									
2010 Allocated Employment	4,559	374	506	2,283	108	33	193	757	304
Percent Change, 2001 to 2010	-11.1%	75.5%	-10.1%	-38.8%	467.5%	-23.8%	161.5%	313.8%	1.2%
Location Quotient	0.83	0.57	0.86	0.97	0.25	0.10	1.40	1.33	0.81
Shift-Share	9.14%	96.78%	-17.35%	-12.04%	509.21%	-26.29%	158.53%	328.78%	-3.12%
Stanislaus County Total	**4,559**	**374**	**506**	**2,283**	**108**	**33**	**193**	**757**	**304**
2010 Allocated Employment	3,836	157	386	2,176	96	1	303	386	330
Percent Change, 2001 to 2010	-29.9%	-34.9%	-28.2%	-44.2%	309.0%	N/A	21.2%	78.9%	9.6%
Location Quotient	0.86	0.29	0.81	1.13	0.27	0.01	2.69	0.83	1.08
Shift-Share	-9.69%	-13.58%	-35.48%	-17.47%	350.72%	N/A	18.27%	93.87%	5.24%
Tulare County Total	**3,836**	**157**	**386**	**2,176**	**96**	**1**	**303**	**386**	**330**
2010 Allocated Employment	2,723	116	370	1,332	6	2	181	568	148
Percent Change, 2001 to 2010	-7.3%	-5.4%	-17.3%	-14.6%	364.8%	N/A	-26.4%	34.6%	8.6%
Location Quotient	0.73	0.26	0.92	0.83	0.02	0.01	1.92	1.46	0.58
Shift-Share	12.95%	15.84%	-24.52%	12.16%	406.48%	N/A	-29.35%	49.58%	4.32%

APPENDIX – D (CONTINUED) – HEALTH AND WELLNESS CLUSTER

Regional Total	Health and Wellness Cluster Total	Health Care - Delivery	Health Care - Medical Device Manufacturing	Health Care – Pharmaceutical	Health Care - Supplies and Services	Health Care - Wellness and Fitness
2010 Allocated Employment	128,178	114,585	1,269	311	2,434	9,579
Percent Change, 2001 to 2010	21.5%	22.6%	-24.3%	145.1%	80.7%	8.0%
Location Quotient	1.01	1.08	0.30	0.09	0.53	1.10
Shift-Share	3.49%	1.50%	-22.26%	134.86%	68.58%	5.93%
Fresno County Total						
2010 Allocated Employment	35,540	31,609	521	90	674	2,646
Percent Change, 2001 to 2010	15.4%	17.6%	-28.0%	70.2%	-12.4%	11.6%
Location Quotient	1.05	1.12	0.47	0.10	0.55	1.15
Shift-Share	-2.62%	-3.51%	-26.04%	60.02%	-24.47%	9.55%
Kern County Total						
2010 Allocated Employment	23,500	21,123	382	0	131	1,864
Percent Change, 2001 to 2010	22.5%	23.1%	-13.8%	N/A	4.7%	28.4%
Location Quotient	0.88	0.94	0.44	0.00	0.13	1.02
Shift-Share	4.51%	2.00%	-11.77%	N/A	-7.40%	26.35%
Kings County Total						
2010 Allocated Employment	3,903	3,632	1	9	15	246
Percent Change, 2001 to 2010	44.2%	48.4%	-86.4%	-13.8%	-36.2%	12.9%
Location Quotient	1.09	1.22	0.01	0.09	0.12	1.01
Shift-Share	26.24%	27.36%	-84.41%	-24.01%	-48.35%	10.86%
Madera County Total						
2010 Allocated Employment	5,481	5,160	1	0	12	308
Percent Change, 2001 to 2010	32.8%	34.8%	-95.2%	N/A	16.1%	16.8%
Location Quotient	1.31	1.48	0.01	0.00	0.08	1.08
Shift-Share	14.83%	13.70%	-93.19%	N/A	4.00%	14.73%
Merced County Total						
2010 Allocated Employment	5,960	5,462	22	29	18	430
Percent Change, 2001 to 2010	18.7%	17.8%	8.3%	104.7%	51.4%	26.8%
Location Quotient	0.90	0.99	0.10	0.15	0.08	0.96
Shift-Share	0.65%	-3.32%	10.28%	94.46%	39.25%	24.75%
San Joaquin Total						
2010 Allocated Employment	23,328	20,194	117	16	1,276	1,725
Percent Change, 2001 to 2010	25.5%	23.3%	-50.2%	-6.3%	2401.7%	-9.2%
Location Quotient	1.10	1.15	0.17	0.03	1.67	1.20
Shift-Share	7.50%	2.17%	-48.22%	-16.53%	2389.59%	-11.26%
Stanislaus County Total						
2010 Allocated Employment	21,261	19,420	213	136	129	1,363
Percent Change, 2001 to 2010	21.5%	24.0%	6.5%	423.7%	-33.8%	-4.4%
Location Quotient	1.24	1.36	0.38	0.28	0.21	1.17
Shift-Share	3.45%	2.94%	8.50%	413.47%	-45.87%	-6.41%
Tulare County Total						
2010 Allocated Employment	9,204	7,985	12	32	179	996
Percent Change, 2001 to 2010	21.6%	23.3%	-45.5%	352.4%	11.1%	10.4%
Location Quotient	0.64	0.67	0.03	0.08	0.34	1.02
Shift-Share	3.64%	2.26%	-43.46%	342.14%	-0.98%	8.38%

APPENDIX – D (CONTINUED) - LOGISTICS CLUSTER

Regional Total	Logistics Total	Logistics - Related Manufacturing	Logistics - Air, Rail, and Water Transport	Logistics - Truck Transport	Logistics - Freight and Warehousing	Logistics - Transit	Logistics - Other Transportation Services
2010 Allocated Employment	33,192	292	2,420	13,118	12,368	2,523	2,472
Percent Change, 2001 to 2010	15.2%	-23.3%	9.3%	1.3%	29.7%	1.8%	98.4%
Location Quotient	1.04	0.34	0.37	1.78	1.06	0.96	0.89
Shift-Share	24.92%	-24.06%	32.60%	13.64%	39.26%	-2.62%	62.76%
Fresno County Total							
2010 Allocated Employment	7,091	4	1,273	2,774	2,116	516	409
Percent Change, 2001 to 2010	14.5%	-96.4%	93.6%	4.8%	-1.9%	17.8%	109.8%
Location Quotient	0.84	0.02	0.73	1.42	0.69	0.74	0.56
Shift-Share	24.14%	-97.23%	116.88%	17.19%	7.64%	13.29%	74.11%
Kern County Total							
2010 Allocated Employment	4,950	0	363	2,335	1,725	180	347
Percent Change, 2001 to 2010	-6.7%	N/A	-62.2%	-5.8%	29.9%	-49.8%	93.5%
Location Quotient	0.74	0.00	0.26	1.51	0.70	0.32	0.60
Shift-Share	2.98%	N/A	-38.95%	6.57%	39.41%	-54.31%	57.85%
Kings County Total							
2010 Allocated Employment	553	0	52	310	54	112	25
Percent Change, 2001 to 2010	102.5%	N/A	285.7%	47.7%	125.2%	N/A	-3.3%
Location Quotient	0.62	0.00	0.28	1.50	0.17	1.51	0.32
Shift-Share	112.19%	N/A	308.98%	60.08%	134.72%	N/A	-38.90%
Madera County Total							
2010 Allocated Employment	534	0	52	321	53	14	94
Percent Change, 2001 to 2010	34.5%	N/A	449.7%	28.2%	186.3%	-81.3%	115.8%
Location Quotient	0.51	0.00	0.24	1.33	0.14	0.16	1.03
Shift-Share	44.21%	N/A	472.99%	40.57%	195.88%	-85.72%	80.16%
Merced County Total							
2010 Allocated Employment	1,789	172	16	891	469	198	43
Percent Change, 2001 to 2010	41.4%	-37.2%	-57.5%	62.7%	222.7%	7.6%	-44.5%
Location Quotient	1.09	3.87	0.05	2.34	0.78	1.45	0.30
Shift-Share	51.06%	-38.04%	-34.25%	75.10%	232.27%	3.09%	-80.19%
San Joaquin Total							
2010 Allocated Employment	10,140	7	431	3,639	4,453	338	1,272
Percent Change, 2001 to 2010	13.2%	N/A	18.2%	-9.9%	25.5%	-29.9%	141.1%
Location Quotient	1.92	0.05	0.40	2.98	2.30	0.77	2.78
Shift-Share	22.87%	N/A	41.48%	2.47%	35.09%	-34.37%	105.47%
Stanislaus County Total							
2010 Allocated Employment	4,721	100	139	1,644	1,917	710	211
Percent Change, 2001 to 2010	67.0%	2412.0%	32.6%	11.2%	223.0%	36.8%	65.1%
Location Quotient	1.10	0.87	0.16	1.66	1.22	2.00	0.57
Shift-Share	76.67%	2411.23%	55.89%	23.56%	232.58%	32.35%	29.50%
Tulare County Total							
2010 Allocated Employment	3,415	8	94	1,205	1,581	456	71
Percent Change, 2001 to 2010	-4.6%	N/A	42.9%	-7.6%	-8.1%	8.2%	2.9%
Location Quotient	0.95	0.08	0.13	1.45	1.20	1.53	0.23
Shift-Share	5.05%	N/A	66.17%	4.78%	1.40%	3.75%	-32.74%

APPENDIX – D (CONTINUED) –
MANUFACTURING CLUSTER

Regional Total	Manufacturing Total	Food Processing, Ag Support, Water Flow	Medical Device Mfg. & Pharmaceuticals	Logistics - Related Manufacturing	Energy Equipment & Petroleum Mfg.	Diversified Manufacturing
2010 Allocated Employment	101,382	66,303	1,580	292	1,779	31,429
Percent Change, 2001 to 2010	-9.3%	6.0%	-12.3%	-23.3%	75.1%	-31.7%
Location Quotient	0.99	3.30	0.20	0.34	0.47	0.45
Shift-Share	21.33%	17.25%	-15.62%	-24.06%	108.64%	5.22%
Fresno County Total						
2010 Allocated Employment	24,441	16,072	611	4	206	7,548
Percent Change, 2001 to 2010	-11.2%	3.6%	-21.3%	-96.4%	1574.8%	-32.1%
Location Quotient	0.90	3.02	0.30	0.02	0.21	0.41
Shift-Share	19.45%	14.87%	-24.64%	-97.23%	1608.30%	4.83%
Kern County Total						
2010 Allocated Employment	12,877	6,021	382	0	1,236	5,237
Percent Change, 2001 to 2010	15.0%	44.2%	-13.8%	#DIV/0!	78.9%	-11.0%
Location Quotient	0.60	1.42	0.23	0.00	1.57	0.35
Shift-Share	45.64%	55.39%	-17.07%	N/A	112.42%	25.94%
Kings County Total						
2010 Allocated Employment	4,112	3,554	10	0	0	549
Percent Change, 2001 to 2010	21.0%	45.9%	-43.7%	N/A	-100.0%	-41.4%
Location Quotient	1.43	6.29	0.04	0.00	0.00	0.28
Shift-Share	51.65%	57.13%	-46.99%	N/A	-78.83%	-4.19%
Madera County Total						
2010 Allocated Employment	2,810	1,504	1	0	52	1,252
Percent Change, 2001 to 2010	-8.1%	-7.5%	-95.2%	N/A	7619.4%	-11.0%
Location Quotient	0.84	2.29	0.00	0.00	0.42	0.54
Shift-Share	22.53%	3.75%	-98.49%	N/A	7652.92%	25.97%
Merced County Total						
2010 Allocated Employment	7,998	6,202	50	172	36	1,538
Percent Change, 2001 to 2010	-19.7%	-6.7%	48.0%	-37.2%	N/A	-48.9%
Location Quotient	1.51	5.97	0.13	3.87	0.40	0.41
Shift-Share	10.91%	4.53%	44.67%	-38.04%	N/A	-11.70%
San Joaquin Total						
2010 Allocated Employment	17,958	9,632	133	7	120	8,066
Percent Change, 2001 to 2010	-20.3%	-2.3%	-47.3%	N/A	241.4%	-34.9%
Location Quotient	1.06	2.89	0.10	0.05	0.19	0.69
Shift-Share	10.34%	8.94%	-50.55%	N/A	274.88%	2.08%
Stanislaus County Total						
2010 Allocated Employment	20,626	15,927	349	100	97	4,152
Percent Change, 2001 to 2010	-9.1%	-0.9%	54.5%	2412.0%	315.3%	-34.7%
Location Quotient	1.49	5.89	0.33	0.87	0.19	0.44
Shift-Share	21.56%	10.36%	51.19%	2411.23%	348.78%	2.22%
Tulare County Total						
2010 Allocated Employment	10,560	7,391	44	8	6	3,111
Percent Change, 2001 to 2010	-7.6%	18.8%	50.6%	N/A	421.1%	-40.0%
Location Quotient	0.91	3.26	0.05	0.08	0.01	0.39
Shift-Share	23.01%	30.09%	47.27%	N/A	454.63%	-3.01%

APPENDIX – D (CONTINUED) – WATER TECHNOLOGY CLUSTER

	Regional Total
2010 Allocated Employment	2,668
Percent Change, 2001 to 2010	-26.9%
Location Quotient	2.44
Shift-Share	2.77%
Fresno County Total	
2010 Allocated Employment	1,014
Percent Change, 2001 to 2010	-17.9%
Location Quotient	3.50
Shift-Share	11.81%
Kern County Total	
2010 Allocated Employment	199
Percent Change, 2001 to 2010	-43.4%
Location Quotient	0.86
Shift-Share	-13.70%
Kings County Total	
2010 Allocated Employment	15
Percent Change, 2001 to 2010	-46.3%
Location Quotient	0.49
Shift-Share	-16.59%
Madera County Total	
2010 Allocated Employment	195
Percent Change, 2001 to 2010	-11.1%
Location Quotient	5.45
Shift-Share	18.59%
Merced County Total	
2010 Allocated Employment	106
Percent Change, 2001 to 2010	-22.1%
Location Quotient	1.88
Shift-Share	7.62%
San Joaquin Total	
2010 Allocated Employment	269
Percent Change, 2001 to 2010	-39.1%
Location Quotient	1.48
Shift-Share	-9.40%
Stanislaus County Total	
2010 Allocated Employment	259
Percent Change, 2001 to 2010	-1.0%
Location Quotient	1.76
Shift-Share	28.68%
Tulare County Total	
2010 Allocated Employment	609
Percent Change, 2001 to 2010	-37.6%
Location Quotient	4.94
Shift-Share	-7.88%

FOR ADDITIONAL INFORMATION CONTACT:
MIKE DOZIER, DIRECTOR, OFFICE OF COMMUNITY AND ECONOMIC DEVELOPMENT
mdozier@csufresno.edu
559-294-6027

ATTACHMENT 7

List of Regional Forums

Host WDB	Date/Time/Location	Topic
San Joaquin	11/4/2016 2:00-4:00 p.m.	Job Quality
Stanislaus	11/7/2016 2:30-4:30 p.m.	Career Pathways
Fresno	11/8/2016 10:00 a.m.-12:00 p.m.	Workforce & Education Resources
Kern	11/14/2016 11:00 a.m.-1:00 p.m.	Career Pathways
Madera	11/15/2016 8:30-10:30 a.m.	Industry Valued Credentials
Fresno	11/17/2016 1:30-3:30 p.m.	System Accessibility
Kern	11/28/2016 11:00 a.m.-1:00 p.m.	Pathways to the Middle Class
Tulare	11/30/2016 2:00-4:00 p.m.	Industry Recognized Credentials
Merced	12/5/2016 2:00-4:00 p.m.	Pathways to the Middle Class
Fresno	12/6/2016 9:30-11:30 a.m.	Career Pathways
Tulare	12/6/2016 2:00-4:00 p.m.	Pathways to the Middle Class
Kern	12/12/2016 11:00 a.m.-1:00 p.m.	Workforce and Education Resources
Stanislaus	12/13/2016 10:00 a.m.-12:00 p.m.	Industry Valued Credentials
Fresno	12/14/2016 9:30-11:30 a.m.	Career Pathways
San Joaquin	12/14/2016 3:00-5:00 p.m.	Apprenticeships: Career Pathways to Success
Kings	12/15/2016 10:00 a.m.-12:00 p.m.	Industry Sector Employment Needs

ATTACHMENT 8

CONSOLIDATED INVITE LIST

Fresno

- Fresno Business Council
- Fresno Economic Opportunities Commission
- Fresno Economic Development Agency
- Fresno Building Healthy Communities Center for Advanced Research & Technology (CART) – high tech high school
- HOPE Builds
- Kaiser Permanente
- Fresno Bridge Academy, Reading & Beyond
- Clovis Unified School District
- Disabled Students Program & Services, State Center Community College District
- Clovis Adult School
- Fresno Housing Authority
- San Joaquin Valley Manufacturing Alliance
- Sanger Adult School
- Fresno Adult School
- State Center Adult Education Consortium
- The California Endowment
- Fresno Building Healthy Communities
- West Hills Community College District
- Plumbers & Pipefitters Local 246
- Fresno County Office of Education
- Fresno County Department of Social Services
- Fresno, Madera, Tulare, Kings Counties Building Trades Council
- IBEW 100
- Fresno City College
- Fresno State University
- Sheet Metal Workers 104
- Cradle to Career Fresno County
- CA Department of Apprenticeship Standards
- College of the Sequoias
- Northern California Carpenters Apprenticeship
- District Council 16 JATC – Painters & Allied Workers
- Teamsters Local 431
- Operating Engineers Local 3
- Fresno City College Training Institute

- Reading and Beyond
- California Health Sciences University
- Central/Mother Lode Community College Consortium

Kern/Inyo/Mono

Business:

- Johasee Rebar, Inc.
- Grimmway Farms, Inc.
- California Electric Supply Company
- Howard Supply Company
- BW Implement Co.
- Golden Empire Transit
- Clinica Sierra Vista
- Kern Medical
- Frito-Lay
- Hold Your Horses
- HR Professional
- Townsend Design
- Wonderful Company
- Target Distribution
- Tejon Ranch Company
- Famous Footwear
- MacPherson Oil Company
- EDF Renewables
- World Wind & Solar
- JTS Modular, Inc.
- Journey Air Conditioning Co.
- Gazelle Transportation, Inc.
- Kern Health Systems
- Chevron
- Walter Mortensen Insurance
- Kern Oil & Refining Co.
- K. Cornell Capital & Consulting
- PCL Industrial Services, Inc.
- INTEG Enterprises LLS
- Journey Air Conditioning Co.
- Kern County Hispanic Chamber of Commerce
- Greater Tehachapi Chamber of Commerce

- Bakersfield Chamber of Commerce
- Kern County Black Chamber of Commerce

Education:

- Kern County Superintendents of Schools
- Kern Community College District
- Kern High School District
- Delano Joint Union High School District
- California State University, Bakersfield
- Taft College
- Bakersfield College
- Cerro Coso Community College
- Delano Adult School
- Bakersfield Adult School
- College Community Services

Labor:

- IBEW Local 428
- Plumbers & Steamfitters Local 460
- International Union of Operating
- California Rail Builders, LLC
- Kern, Inyo, Mono Building Trades Council
- Southern California Laborers

Community-Based Organizations:

- Mexican American Opportunity Foundation
- Community Action Partnership of Kern
- Golden Empire Gleaners
- Independent Living Center of Kern County
- Bakersfield Homeless Center
- Mission at Kern County
- Bakersfield Rescue Mission
- United Way of Kern County

Economic Development:

- CSUB Small Business Development Center

- Kern Economic Development Corporation

One-Stop Partners:

- California Indian Manpower Consortium, Inc.
- Department of Rehabilitation
- SER - Jobs for Progress
- Housing Authority of Kern County
- Employers' Training Resource
- Employment Development Department
- Cornerstone Solutions, Inc. - Job Corps Service
- Farmworker Institute for Education & Leadership Development
- Kern County Department of Human Services
- Inyo County Health & Human Services
- Mono County Social Services Department

Kings

- AARP
- Adventist Health
- All Valley Printing
- Aqua Azul Water Corporation
- Bank of the West
- B&D Quality Cleaners
- California Department of Rehabilitation
- College of the Sequoias
- Comfort Inn
- CPAs,
- Employment Development Department
- Hanford Mall
- Homac Manufacturing
- International Brotherhood of Electrical Workers Fresno Area Electrical Training Center
- International Brotherhood of Electrical Workers Local 100
- Kenneth A Silva, DDS
- Kings County Board of Supervisors
- Kings County Human Services Agency
- Kings County Office of Education
- Kings View Mental Health Services
- Lowe's

- M. Green and Company
- Marquez Brothers International, Inc.
- Northern California Carpenters Union
- OLAM Spices and Vegetable Products
- Proteus Inc.
- SEIU Local 1000
- SEIU Local 521
- Southern California Edison
- Tree Frog Specialties and Printing
- West Hills Community College District
- A Design For You
- Action Equipment Rentals
- Adventist Health
- Aera Energy LLC, AGUSA Inc.
- Airgas Specialty Products
- All Valley Printing
- Aqua Azul Corporation
- Art Print Service
- Baker Commodities, Inc.
- Bank of the West
- Beco Dairy Automation, Inc.
- Bennett & Bennett Inc.
- Britz-Simplot Grower Solutions
- Burrows, Gary Inc.
- Buttonwillow Warehouse Company
- Calcot Ltd.
- California Bio-Productex Inc.
- California Organic Fertilizers, Inc.
- Camfil Farr Company
- CBS Doors
- Cemex
- Central Valley Meat Company
- City of Hanford
- Champi Fencing
- Cobalt Safes
- College of the Sequoias
- Corcoran Machine Works
- Coveris

- Crown Natural Foods
- County of Kings
- Del Monte Foods
- Enterprise & Commerce Industrial Park
- Fagundes Agri Business
- Fry's Electronics Warehouse
- Gibson Gates & Fencing Systems
- Golden State Feed & Grain
- Hanford Commodities, LLC
- Hanford Grain Company
- Hanford Joint Union High School Dist.
- HCT, Inc.
- Helena Chemical Co.
- Iron Industries Inc.
- J G Boswell Company
- J G Boswell Tomato Company, LLC
- Kahn, Soares, & Conway
- Karl M. Smith, Inc.
- Keenan Farms, Inc.
- Kings Cabinet Systems
- Kings County Air
- Kings County EDC
- Kings Rehabilitation Center
- Lacey Milling Co.
- Leprino Foods Lemoore East
- Leprino Foods Lemoore West
- Mar Vista Resources, LLC
- Marquez Brothers International
- McClard Masonry Inc.
- McLellan Industries
- Mid-State Precast, Morgan & Slates
- Naval Air Station Lemoore
- Nichols Farms
- Northland Process Piping, Inc.
- Norwesco, Inc.
- Olam Spices & Vegetable Ingredients
- Pacific Gas & Electric
- Pitman Family Farms

- Proctor/Crookshanks Companies
- Pyramid Cabinet Systems, Inc.
- Quinn Company
- Robinson's Sheet Metal
- Sasser Specialties
- Sawtelle & Rosprim
- Silveira's Ground Service, Inc.
- South Valley Materials, Inc./Hanford
- Superior Soil Supplements
- Telstar Instruments
- Tessenderlo Kerley, Inc.
- The Gas Co.
- The Hanford Sentinel
- TriCal, Inc.
- Tulare Lake Compost
- Valley Oak Cabinet Mfg.
- Valley Pallet Inc.
- Valley Pump & Dairy Systems
- Verdegaal Brothers Inc.
- Veterinary Pharmaceuticals, Inc.
- Virtus Nutrition, LLC
- Walmart Distribution Center
- Waste Management
- Wells Fargo Bank
- West Hills College Lemoore
- West Pacific Electric Co.
- Westside Transplant
- Windtamer Tarps
- Woodside Electronics Corp.

Madera

- Alfred A. Gallegos Attorney at Law
- AM/PM
- Ardagh Group
- California Employers Association
- California Gastroenterology Associates
- California Indian Manpower Consortium, Inc.
- Camarena Health

- Central California Workforce Collaborative
- CertainTeed
- Chancellor’s Office of the California Community Colleges
- Charles Diaz Trucking
- Children's Hospital Central California
- Church & Dwight Co., Inc.
- Citizens Business Bank
- Coarsegold Pharmacy Wellness
- Comfort Inn, Oakhurst
- Community Action Partnership of Madera County
- Constellation Brands, Inc. - Mission Bell Winery
- Control Enterprises Incorporated
- Delaware North, Parks and Resorts at Yosemite
- Department of Rehabilitation
- Domries Enterprises, Inc.
- Employment Development Department
- Eurodrip U.S.A., Inc.
- Fiesta Auto Insurance
- G. Oberti & Sons
- Georgia Pacific
- Gutile Farms
- Harris Enterprises.
- Housing Authority of the City of Madera
- Innovative Rotational Molding
- International Electrical Workers #100
- JBT Food Tech Corporation
- Kings View, Inc.
- KleenRite Equipment Manufacturing
- Kuykendall Solar Corporation
- Laborers International #294
- Madera County Board of Supervisors
- Madera County Department of Social Services
- Madera County Economic Development Commission
- Madera District Chamber of Commerce members
- Madera Unified School District
- Nemat Inc.
- Papa Murphy’s Pizza
- PG&E

- Salter's Distributing, Inc.

Merced

- Merced Union High School District
- University of California-Merced
- Merced County Human Services Agency
- Merced County Community and Economic Development
- Merced College
- AEBG Consortium
- Merced County Office of Education
- Merced County Board of Supervisors
- ASC Agrecom, Inc.
- EDD
- Joseph Gallo Farms
- Mr. INK Pro
- California Indian Manpower Consortium
- Leap/Carpenter/Kemps Insurance Agency
- Coldstone Creamery
- Central Valley Opportunity Center, Inc.
- Laborers International Union of North America
- Amie Marchini Senior Care
- ServiceMaster
- Pacific Gas and Electric
- Department of Rehabilitation
- Image Masters
- Sheet Meter Workers L.U. #104
- BLUM Center
- Sintex Security Services
- The Plumbers and Pipefitters Local 442
- Atwater Chamber of Commerce
- Hispanic Chamber of Commerce
- Los Banos Chamber of Commerce
- Greater Merced Chamber of Commerce
- City of Merced-Economic Development
- International Brotherhood of Electrical Workers
- BA-Local 442
- Dole Packaged Foods International
- Laird Manufacturing

- Quad Graphics
- E&J Gallo Winery
- Manufacturers Council of the Central Valley
- Castle Family Health Center
- WebCorps Builders
- Label Tech
- UC Berkley
- IFMA-Central Valley Chapter
- Lawrence Livermore National Laboratory
- San Joaquin County WorkNet-EEDD
- Madera County Workfroce Investmetn Corporation
- Fresno Regional Workforce Development Board
- Stanislaus Alliance Worknet
- Workforce Investment Board of Tulare County
- Kings EDC and JTO
- Kern County Employers' Training Resource
- Kriby Manufacturing
- TriCounty Flooring
- JBT
- Small Business Development Center Network
- Californai League of Food Processors
- Resources for Independence
- John B. SanFilipo & Sons, Inc.
- Hilmar Cheese
- J Marchini & Son
- Liberty Packing Company
- Live Oak Farms
- Sensient Natural Ingredients
- Hoffman Security
- McClane Pacific
- CertainTeed
- Kagome
- Morningstar
- Teasdale
- Frito Lay
- 51 Fifty
- Richwood Meats
- Black Oak Casino

San Joaquin

- San Joaquin County Board of Supervisors
- Employment & Economic Development Department
- San Joaquin Economic Development Association
- City of Escalon
- City of Lathrop
- City of Lodi/Lodi Electric Utility
- City of Manteca
- City of Ripon
- City of Stockton
- City of Tracy
- Lathrop District Chamber of Commerce
- Greater Stockton Chamber of Commerce
- Lodi Chamber of Commerce
- Manteca Chamber of Commerce
- Ripon Chamber of Commerce
- Tracy Chamber of Commerce
- Escalon Chamber of Commerce
- African American Chamber of Commerce
- San Joaquin County Hispanic Chamber of Commerce
- Central Valley Asian American Chamber of Commerce
- San Joaquin Delta College
- Center for Business and Policy Research, UOP
- County Office of Education
- Deputy Sector Navigator, Region C- Advanced Manufacturing
- Deputy Sector Navigator, Region C- Agriculture, Water & Environmental Technologies
- Deputy Sector Navigator, Region C, Prop 39 Project Director- Energy, Construction & Utilities
- Deputy Sector Navigator, Region C- Global Trade & Logistics
- Deputy Sector Navigator, Region C- Health
- Deputy Sector Navigator, Region C- Information & Communication Technologies (ICT)/Digital Media
- Deputy Sector Navigator, Region C- Retail/Hospitality/Tourism 'Learn and Earn'
- Deputy Sector Navigator, Region C- Small Business
- Stockton Airport
- SMART/San Joaquin RTD
- Altamont Corridor Express/ SJ Regional Rail Commission

- California Dept. of Transportation (Caltrans)
- Visit Stockton
- Visit Lodi! Conference and Visitors Bureau
- Visit Manteca
- Northern California Chapter, National Electrical Contractors Association
- Laborers International Union of Northern America, Local 73
- San Joaquin Calaveras Center Labor Council
- San Joaquin Building Trades
- Carpenters Local 152
- SEIU Local 1021
- OE3 Operators Engineers Local 3
- Labors Trg. & Retrg. Trust Fund
- Carpenters Training Committee for Northern California
- Dept. of Industrial Relations
- OE3 Operators Engineers Local 3
- United Assoc of Plumbers & Pipefitters Local 442
- Sheet Metal Workers Local 104
- San Joaquin County Human Services Agency
- California State Department of Rehabilitation
- California Human Development
- San Joaquin County Probation
- Pacific Gas & Electric
- Port of Stockton
- SJ Partnership/Business Council
- SJ Delta College SBDC
- State EDD-Labor Market Information Division (LMID)
- State EDD
- SJC Council of Governments
- RS Consulting
- San Joaquin General Hospital Behavioral Health Services
- San Joaquin County Veterans Services
- Fathers & Families
- El Concilio
- African-American Community Services
- Puentes
- Premier Finishing
- Eagle Roofing Products
- Ace Electric Motors Co.

- Surtec, Inc.
- All Counties Glass
- Diamond Foods
- Ameron WTG
- GAF

Stanislaus

- Lawrence Livermore National Laboratory
- DH Consulting LLC
- Patterson Unified School District
- MCCV
- JKB Homes
- CUSD
- Learning Quest Stanislaus Literacy Centers
- Turlock Unified School District
- Modesto City Schools
- EDD - Wagner-Preyser
- Department of Rehab
- CSA
- Job Corps
- CIMC
- DRAIL
- El Concilio-Modesto
- Casa Del Rio FRC
- Friends Outside
- Stanislaus Family Justice Center
- World Relief-Modesto
- Interfaith Ministries
- Modesto Gospel Mission
- Society for Disabilities
- Turning Point Community Program
- Housing Authority of County of Stan.
- CVOC
- Senior Community Service
- MJC
- Computer Tutor
- SCOE
- DCSS
- BHRS
- Opportunity Stanislaus
- Manos Unidas Modesto
- Opendoor Services

Tulare

- AgriStar
- ALCOA
- Alexander Groups
- Amarillo Gear Company
- Amarillo Wind Machines
- Bank of the Sierra
- Beckman Coulter
- Bella La Vina Farms
- Bowsmith
- Bradford Steel Construction
- Burton School District
- Caccitore Wines
- California Dairies
- California State Assembly
- California State Senate
- California State University, Fresno
- Career Development Institute
- Carpenters Union 1109
- Central Valley Meat
- Central Valley Scuba Center
- Champion Homes
- Christy Vault Company
- Cigna
- City of Dinuba
- City of Exeter
- City of Farmersville
- City of Lindsay
- City of Porterville
- City of Tulare
- City of Visalia
- City of Woodlake
- College of the Sequioas
- College of the Sequoias Training Center
- Community Health Clinic
- Con Agra Foods
- Consepts in Controls
- Corcoran Unified School District

- CSET
- CSET Board of Directors
- Cutler Orosi Joint Union School District
- DC Brands
- Department of Rehabilitation
- Dinuba Chamber of Commerce
- Dinuba Joint Union High School District
- Dinuba Unified School District
- Dowdy's Sales and Service
- Electric Motor Shop
- Ellonor Roosevelt Community Learning Center
- Empire Supply
- Employment Development Department
- Essilor USA
- Exeter Chamber of Commerce
- Exeter Unified School District
- Family Health Care Network
- Farmersville Unified School District
- Farwest Distributors
- FAST Credit Union
- Ferguson
- Fisher Manufacturing
- Fisher Metal Products
- Foster Farms
- Fresno Pacific University
- Fresno Small Business Development Center
- Fresno Unified School Disctrict
- GEA
- Gibralter
- Go-Titan
- Groppetti Automotive Group
- Haagen Dazs
- Hanford Joint Union High School District
- Health and Human Resources
- Healthcare Conglomerate Associates
- HHSA
- Hispanic Chamber of Commerce
- Horizon Nut

- Hydrite Chemical Co.
- Idea Printing and Graphics
- International Brotherhood of Electrical Workers
- International Paper
- Issue Number
- ITK Leadership Council
- JD Heilskell
- Jim's Formal Wear
- Joann Fabrics
- Job Corps
- John Muir Academy
- Jostens
- K Truss
- Kaweah Delta Health Care District
- Kings County Office of Education
- Kraft Foods
- Lane Engineers
- Lemoore Union High School District
- Lindsay Chamber of Commerce
- Lindsay Joint Union High School District
- Lindsay Unified School District
- MAF Industries
- Mangini Associates, Inc., ITK Leadership Council
- Marriott Visalia at the Convention Center
- McFarland Unified School Disctrict
- MCS Frame
- Merced College
- Moore Medical
- National Builders Supply
- NDS
- Nestle
- Networks 2 Action
- Odwalla
- ORS Nasco
- Pacific Southwest Container
- Pacific Stihl
- PDDA Filtration
- Physician/Surgeon (Retired)

- Pine, Pedroncelli, and Agular
- Pixley Unified School District
- Portervile Unified School District
- Porterville Adult School
- Porterville Chamber of Commerce
- Porterville College
- Porterville Unified School District
- Pregis
- Pro Document Solutions
- Producers Dairy
- Proteus, Inc.
- Provisions Food Company
- Pro-Youth Heart
- PSW Rehab
- Quad Knopf
- Rabobank
- Reedley College
- Research for Hire
- Retired Sunmaid Administrator and Farmer
- Riverside County Economic Development Agency
- Royalty Carpet
- Royalty USA
- RR Donnaelley
- Ruiz Foods
- San Joaquin Valley College
- Screw Conveyor Corp
- Seals and Biehle Contractors
- Seals Biehle Construction
- SEE and Company
- Sempra Energy
- Sequoias Adult Education Consortium
- Sequoias Riverland Trust
- Serpa Packaging
- Service Master
- Sierra View Medical Center
- Soil Basics
- Southern California Edison (Retired), ITK Leadersh
- Spraying Devices

- Springville Chamber of Commerce
- Springville Unified School District
- State Center Community College District
- Suberban Pipe and Steel
- Sun Fresh
- Sundale School District
- SunPower
- Svenhards
- TC Probation
- TCOE
- Tempo Foam
- The Lockwood Agency, ITK Leadership Council
- Tri-Mag
- Tucoemas Federal Credit Union
- Tuff Tubs
- Tulare Adult School
- Tulare Chamber of Commerce
- Tulare Community Health Clinic
- Tulare County
- Tulare County Board of Supervisors
- Tulare County Board of Supervisors
- Tulare County Board of Supervisors
- Tulare County Ecconomic Develop Corporation
- Tulare County Farm Bureau
- Tulare County Federal Credit Union
- Tulare County Health and Human Services Agency
- Tulare County Office of Education
- Tulare County Office of Education/SEE
- Tulare County Public Health Department
- Tulare Economic Development Agency
- Tulare Iron Man
- Tulare Joint Union High School District
- Tulare Regional Medial Center
- Tulare Unified School District
- Tulare Union Joint Unified School District
- Tulare-Kings Hispanic Chamber of Commerce
- Tule River Tribe
- Turning Point of Central California

- United Staffing
- Universal Biopharmareserach Institute
- University of California, Merced
- University Prepatory High School
- UPS
- US Farm Systems
- Valley ROP
- Ventura Coastal
- VF Outdoor, Inc.
- Visalia Adult Education Consortium
- Visalia Adult School
- Visalia Chamber
- Visalia Chamber of Commerce
- Visalia Employment Connection
- Visalia Rescue Mission
- Visalia Unified School District
- Voltage Multipliers
- VWR Distribution
- Warren & Baerg
- West Hills Community College
- Woodlake Unified School District
- Workforce Investment Board of Tulare County

ATTACHMENT 9

Name	Organization
Pang Vangyi	State Center Adult Education Consortium
Pat R. Barr	WDB
Efrain Guizar	Fresno County Office of Education
Ka Xiong	Fresno WDB
Ricky L. Talley	Clovis Adult Education
Courtney McMahan	Clovis Adult School
Ed Schmalzel	Clovis Adult School
Andrea Story	Fresno County DSS
Giselle Simon	West Hills College Lemoore
S. Norman	TRCO
Andrea Reyes	Fresno County Economic Development Corp.
Robert Topete	Plumbers & Pipefitters Apprenticeship
Chuck Staton	Electrical Apprenticeship
Gary Schlueter	Fresno Adult School
Dan Sousa	State Center CCD
Valerie Fisher	Health Workforce Dept
Corinna Reneira	Director of Apprenticeship Standards
David Castillo	West Hills College

Name	Organization
Irma Garcia	Fresno Housing
Jeff Davis Jr.	Fresno EOC
Laneesha Senegal	H.O.P.E.
Deb Nanhulle	FBC
Gary Schlueter	Fresno Adult School
Sherri Watkins	State Center Adult Education Consortium
Patric Farrar	Merced Co. Dept of Workforce
Nancy Penny	Sanger Adult
Brandi Johnson	Fresno Housing
Nikki Newsome	Reading & Beyond - Bridge Academy

Name	Organization
Katrina Starman	DOR
Priscilla Varela	DOR
Imelda Juarez	KCMH - VOC
Mauro Laris	MAOF
Melinda Brown	KEDC
Diane McClanahor	DOR
Gloria Hernandez	HACK
Michael Kane	Cerro Coso
June Martinez	KCMH Ontrack
Kenny Grejoir	Johasee Rebar
April Morris	Grimmway Fund
Shanda Evett	DHS
Brandon Evans	DHS
Mai Knue	Madera Workforce
Rica Galiza	Dept of Rehab
Joel Seal	BW Implant
Magda Menendez	MAOF
Rob Arias	KCSOS
John Means	KCCD
Doug Kremar	Job Corps
Luis Lopez	HSC
Victoria Hernandez	HACK
Jennifer Patino	CSUB
Les Clark	OIW
Greg McGikney	Calif Electric Supply
Sarai Jones	ETR
Ricky Esparza	ETR

Grant Wong	ETR
M. Turnipsoel	KCTA
Ralph Martinez	CAFK
Jan Lemucchi	ILCKC
Gina Knovos	KHS

Name	Organization
Shanda Evett	DHS
Eileen Brush	GET
Ope Jelugbu	GET
Veronica Moore	Dept of Rehab
Jodi Loeffler	Bakersfield Adult
Sarai Jones	ETR
Nikka Vargas	Housing Authority
Pam Holiwell	KCDHS
Stacy Ferreira	Clinica Sierra Vista
Candy Gettman	ETR
Michael Kane	Cerro Coso
Melinad Browly	Kern EDC
June Martinez	KCMH
Jermaine Tyson	
David Villarino	Field Institute
Jimmie Soto	ILCKC
Jan	ILCKC
Mark Wyatt	KHSD-BAS
Lua Hockersmith	Kern Medical
Randi Kizzar	Westec
Ricky Esparza	ETR
Mauro Laris	MAOF
Brandon Evans	DHS
Maida Alveraz	MAOF
Teresa Hitchcock	ETR
Jorge Espinosa	Madera MCWIC
Jun Lopez	HSC

Beth Bgwaters	KIT Community
Katrina Hoagland	Frito Lay
Greg McGiffney	California Electric Supply
Gloria Peleyri	KCMH
Todd Kepez	PCL
Rob Arias	KCSOS
Jennifer Patire	CSUB
John Spaulding	BTC
Grant Wong	ETR
Aaron Ellis	ETR
Nyakundi Michieka	CSUB
Christian Shannon	KCSOS
Denise Crawford	Bakersfield College
Imelda Juarez	KCMH
Russell Jolusa	ABC
Michael Turnipsend	K???
Ralph Martinez	CAPK

Name	Organization
John Lehn	Kings Co. WIB/JTO
Xochityl Rodriguez	Kings Co. /HSA-ETW
Kathlene Brookshire	Kings Co/HAS/ETS
Vince Velo	Kings Co/WDB/JTO
Dusty Ference	Kings Co Farm Bureau
Thad Russell	College of Sequoias
Robert Aura	JTO
Kristin Robinson	COS
Nancy Silva	WIB/Silva Dental
Kelley Mattos	KC Human Resources
Stephanie Murphy	Adventist Health
Kes Andersen	Leprino
Kristin Clark	West Hills College Lemoore
Matt Burden	Mid-State Precost
Paula Lehn	Fast Credit Union

Name	Organization
Bertha Vega	MCWIC
Pam Lowery	MCWIC
Maiknue Vang	MCWIC
Andy Fiskum	Alliance Worknet
Victor Montes	A1
Hilda Castrella	MHS
Lori Marchy	DSA for Ag
Jerry Franksen	SJVC/CEA
Melisa Bushey	MCH
Edilia Perez	Sunsweet Dryers
Abel Alcocer	EDD
Gurminder Sangha	COS/LCCRO
Jennifer Rivera	Madera Co. DSS
Heidi Rousey	EDD/UI
Jesus Gamboa	CVOC
Martha Ramirez	Madera Housing
Wendy Burke	Tenaya Lodge
Robert Paythreus	
Julie Herd	MCEDC
Shelley Attix	DSN-RHTLE Sector
John Andersone	
Vilma Reynoso	MUHSD
Loretta Bagssi	SEL/Rons Towing
Pat Gorda	JBT
Shermaene Roemhildt	Merced County WIB
Lance Lippincott	Merced County WIB
Tracie Contreras	Madera WDB

Jorge Espinosa	Madera WDB
Larry McLaughlin	Comm. Colleges/ATRE Sector
Karri Hammerstrom	Central/ML Reg Consortium
Devon Dilly	SJVC
Monique Figueroa	Madera Comm. Hospital
Javier de la Cerda	Sunsweet Dryers
Steven Gutierrez	EDD
Sofia Muhn	EDD
Sylvia Garibay	EDD
Lucia Avila	MHA

Name	Organization
Harpreet Takhar	MCOE After School
Andre Griggs	MCOE After School
Gail Lopez	Madera
Autumn Gardia	Merced College
Tammy Johnson	UC Merced Extension
Margarita Cabalbag	EDD Workforce Srvc
Valerie Fisher	CCCC-Health Workforce
Rebecca Petty	HSA/Employment Services
Amelia Cuen	HSA/Employment Services
Mary Ruiz	EDD
Lynn C Reimer	UC Merced Extension
Meshan Record	Merced AJCC
Constantino Aguilar	Merced Union High School District
Michelle Watkins	Black Oak Casino Resort
Darren Lockwood	Black Oak Casino Resort
Becky Barabe	Merced College
Shelly Conner	Merced College
Shelley Attix	CA-RHT Sector/Central Region

Name	Organization
Ward Andrus	
Gene Bigler	
Lori Marchy	
David Jimenez	
Pat Patrick	Lodi Chamber
Chris Klement	SJCOE
Julie Jansen	SJCOE
Les Fong	SJRT
Ernest Williams	Worknet
Carlos Magana	EDD
Peter Simon	
Michael Mark	
Steve Lopez	
Lorraine Perry	
Ranita Reed	
Carlos Hirota	
Greg Vincelet	
Sheilah Goulart	
Kathy Hart	
Salvador Vargas	
Jessica Hernandez	SJC Worknet
Valerie Vega	SJC Worknet
Roslyn Burse	
Kathleen Luangrath	SJC Worknet
Julie Riley	SJC Worknet
Hector Quintero	SJC Worknet
Thuan Doan	SJC Worknet

Jacquie Q Thomas	SJC Worknet
Ed Wanket	
Regina Ramam	SJC Worknet
Elena Manqahat	Worknet
Lesli Jones	SJC Worknet

Name	Organization
John M Solis	San Joaquin County Worknet
Rick Aguilera	San Joaquin County Worknet
Tonnie Mallory	San Joaquin County Worknet
Srey Kho	El Concilio
Chris Kleinert	SJCOE
Lily Aman	CA Human Development
Shelley Burcham	City of Tracy
Steve Lantsbergh	San joaquin County EOA
Jessie Garza-Roderick	SJDC-Mountain House Campus
Lorraine Perry	Employment Development Dept
Nati Martinez	EDD/LMID Labor Market Info
Janice Miller	City of Stockton
Sheri Orieto	Orieto Consulting
Jose Moreno	El Concilio Calworks
Gene Bigler	Puentes
Kent Bradbury	San Joaquin RTD
Les Fong	Les Fong & Assoc.
Salvador Vargas	San Joaquin Delta Coll.
Lorinda Forrest	San Joaquin Delta College
Faul Hernandez	UIA Local 442
Michael Mark	Sheet Metal Workers Local #104
Michael Leong	Carpenters Training Committee for Northern CA
Alfredo Mendoza	SJC EEDD
Allet Williams	SJC Worknet
Carol Hirota	Stockton USD Adult Education

Name	Organization
Ed Cuellar	Community Services Agency
Erlinda Cariano	CSA
Irene Lopes	CSA
Vinal Chand	Alliance Worknet
Alfredo Mendoza	SJC Worknet
John Jepson	CVOC
Heidi Rousey	EDD/UI
Dallas Plag	CUSD
Dustin Pact	CUSD
Juan Dendoza	CUSD
Bruce Merchant	Alliance Worknet
Velma While Bear	Cal Indian Manpower Consortium
Irene Espinoza	Alliance Worknet
Teresa Grea	Alliance Worknet
Barbara Morales	Alliance Worknet
Linda Alaniz	Turlock Adult School
Dolores Brunson	SCSEP
Karen Williams	Learning Quest
Lucio Cruz	CVOC
Linda Del Carlo	Housing Authority
John Lowder	Housing Authority
Margarita Cabalbag	EDD Workforce Services
Mahalia Gutice	DOR
David Lathrop	Turlock Adult
Jaskaran Dhesi	Alliance Worknet
Eugene Garcia	Alliance Worknet
John Chamberlin	Planning Consultant

Ron Cripe	Modesto Jr. College
Paul Rodgers	AW
Lynn Sanchez	AW
Eric Anderson	Modesto City Schools

Name	Organization
Martha Alexandros	TCOE/SEE
Ruben Alvarez	Porterville Unified
Randy Baerg	WIB BOD Member - Warren & Baerg Mfg., Inc.
Gilbert Bareng	Mangini Associates Inc.
Cynthia Brown	Porterville Unified School District
Carla Calhoun	CSET
Lisa Castillo	Cutler-Orosi Unifed School District
Eldonna Caudill	WIBTC
Shelley Attix	Central CA-RHT Sector
Bill DeLain	TCWIB
Valerie Fisher	Health Workforce Initiative
Maria Guerrero	CSET
Gil Jaramillo	Fresno State SBDC
Desiree Landeros	WIB of Tulare County
Kenny Lavinder	Carpenters Local 1109
Ryan Leasure	PUSD
Martha Loya	Proteus
Dan Martin	Nestle
Bruce Nicotero	Jo-Ann Fabric and Craft Stores
Craig Plath	CSET
Patricia Pullen	WIB
Steve Reid	Hydrite Chemical Co
Mimi Schuler	Porterville Unified School District
Ryan Stillwater	Visalia Rescue Mission
Joh Werner	SAEC
Jorge Zegarra	College of the Sequoias
Devon Jones	COV

Jennie Bautista	WIB
John Gonzalez	WIB
Gurminder Sangha	COS/CCCCO
Jason Harper	WIB
Blanca Bonilla	WIB
Carlene Estes	Workforce Investment Board
Marianela Fraga	CSET
Karri Hammerstrom	Central/Mother Lode Regional Consortium
David McMunn	Workforce Investment Board of Tulare County
Dan Meinert	City of Dinuba EDC
Linda Mendez	CSET
Paula Murray	Tulare Kings Linked Learning Consortium
Alma Rocha	HHSA-TulareWORKs
Mary Rodarte	WIB of TC
Ephraim Rodriguez	HHSA/TW
Donnette Silva Carter	Tulare Chamber of Commerce
Drew Sorensen	Woodlake USD
Gabbie Alvidrez	Tulare WIB

Name	Organization
Pang Vangyi	State Center Adult Education Constortium
Pat R. Barr	FRWDB
Efrain Fuizar	FCOE
Ka Xiong	FRWDB
Ricky Tallay	Clovis Adult Education
Courtney McMahon	Clovis Adult School
Ed Schmalzel	Clovis Adult School
Andrea Story	Fresno County DSS
Giselle Simon	West Hills College
S. Norman	TRCO
Adnrea Reyes	Fresno County Economic Development Corp.
Robert Topete	Plumbers and Pipefitters Local 246
Chuck Stanton	Electical Apprencticeship Program
Gary Schlueter	Fresno Adult School
Dan Sousa	State Center CCD
Valeire Fisher	Health Workforce Investment
Corinna Renaira	Director of Apprenticeships Standards
David Castillo	West Hills College

Name	Organization
Irma Garcia	Fresno Housing
Jeff Davis, Jr.	Fresno EOC
Lareesha Senegal	H.O.P.E.
Gary Schlueter	Fresno Adult School
Sherri Watkins	State Center Adult Education Constortium
Patric Farrar	Merced County Department of Workforce Investment
Nancy Penny	Sanger Adult
Brandi Johnson	Fresno Housing
Nikki Newsome	Reding and Beyond Bridge Academy

Name	Organization
Shande Evelt	DKTS
Eileen Brush	GET
Jodi Loeffer	Bakersfield Adult
Sarai Jones	ETR
Nikky Vargas	Housing Authority
Pam Holiwell	KCDHS
Candy Getman	ETR
Michal Kane	Cerro Coso CC
Melinda Brwoly	Kern EDC
June Martinez	KCMH
David Villarino	Field Institute
Jimmie Seto	KCKC
Mark Wyatt	KHSD-BAS
Lisa Hockersmith	Kern Medical
Randy Kizzar	Westes
Ricky Esparza	ETR
Mario Laris	MAOF
Brandon Evans	DHS
Teresa Hitchcock	ETR
Jorge Espinosa	Madera MCWIC
Beth Bywaters	KIT Community
Katrina Hoagland	Frito Lay
Gloria Peryizi	KCMH
Todd Kepez	PCL
Rob Arias	KCSOS
Jennifer Patin	CSUB
John Joauld	BTC
Ovant Wong	EFR
Adam Ellis	ETR
Nyakundi Michele	CRYB
Christian Sharon	KCSOS
Denise Crawford	Bakersfield College
Imelda Juarez	KCMH

Name	Organization
Shande Evelt	DKTS
Eileen Brush	GET
Jodi Loeffer	Bakersfield Adult
Sarai Jones	ETR
Nikky Vargas	Housing Authority
Pam Holiwell	KCDHS
Candy Getman	ETR
Michal Kane	Cerro Coso CC
Melinda Brwoly	Kern EDC
June Martinez	KCMH
David Villarino	Field Institute
Jimmie Seto	KCKC
Mark Wyatt	KHSD-BAS
Lisa Hockersmith	Kern Medical
Randy Kizzar	Westes
Ricky Esparza	ETR
Mario Laris	MAOF
Brandon Evans	DHS
Teresa Hitchcock	ETR
Jorge Espinosa	Madera MCWIC
Beth Bywaters	KIT Community
Katrina Hoagland	Frito Lay
Gloria Peryizi	KCMH
Todd Kepez	PCL
Rob Arias	KCSOS
Jennifer Patin	CSUB
John Joauld	BTC
Ovant Wong	EFR
Adam Ellis	ETR
Nyakundi Michele	CRYB
Christian Sharon	KCSOS
Denise Crawford	Bakersfield College
Imelda Juarez	KCMH
Jay Lemucchi	KCKC
Sandra Mitte	
Lupe Aguirre	Bakersfield College
Luis Lopez	HSC
Pam Holiwell	DITS
Kathy Johnson	WKAEN
Art Medina	HOFK
Bryan Maritnez	CRB
John Lopez	
Ricky Esparza	ETR
Grant Wong	ETR
June Martinez	KCMH
Veronica Vega	CRD

Tina Hiroste	WIOA TAFT
Betch Harrison	BC
Shannon Koster	KUJ
Adeline Ramirez	WKAEN
Lael White	Hold Your horses
Tammy Haney	ETR
Saul Lewis	DOR
Sarai Jones	ETR
Imelda Juarez	KCMH
Alyssa Haas	KIT Community
Rob Arias	KCSOS
Shanda Evett	DHS
Bertha Vega	MCUIC
Melinda Brown	KEDR
Shelley Attix	CA Community Colleges
Jennifer Patino	CSXR
Missy Rindge	Frito Lay
Panita Stule	KCCD
Kelly Bearden	CSUB SBDC

ATTACHMENT 10

MEMORANDUM OF UNDERSTANDING
BETWEEN
FRESNO AREA WORKFORCE INVESTMENT CORPORATION,
KERN/INYO/MONO EMPLOYER'S TRAINING RESOURCE,
KINGS COUNTY JOB TRAINING OFFICE,
MADERA COUNTY DEPARTMENT OF EDUCATION, WORKFORCE DEVELOPEMENT OFFICE,
MERCED COUNTY DEPARTMENT OF WORKFORCE INVESTMENT,
SAN JOAQUIN COUNTY EMPLOYMENT AND ECONOMIC DEVELOPMENT DEPARTMENT,
STANISLAUS COUNTY DEPARTMENT OF EMPLOYMENT AND TRAINING, AND
TULARE COUNTY WORKFORCE INVESTMENT BOARD, INC.

WHEREAS, Central California Workforce Collaborative (CCWC) was formed to promote a collective effort to address Workforce Investment Act (WIA) issues and funding opportunities on a regional basis;

WHEREAS, the undersigned workforce investment agencies desire to formally collaborate in partnership on a regional basis concerning WIA issues and funding opportunities;

WHEREAS, the parties hereto, individually and collectively, agree by the execution of this Memorandum of Understanding (MOU) to the obligations, performances and accomplishments of the tasks described herein, specifically, to coordinate resources and opportunities to ensure effective and efficient delivery of employment and training services to the region, where regional efforts are appropriate;

WHEREAS, this MOU describes the terms and conditions under which the undersigned workforce investment agencies will participate as the CCWC in pursuing WIA issues and funding opportunities on a regional basis; and

WHEREAS, this MOU is made by and between the undersigned workforce investment agencies, each of which are referred to singularly as "Party", or collectively as the "Parties".

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

1. PURPOSE

The purpose of this MOU is to establish cooperative and mutually beneficial relationships between the undersigned Parties whose participation in CCWC has been determined to be vital to bringing regional workforce funding opportunities to fruition by aligning and leveraging workforce investment and philanthropic funds for strategic investments to improve the workforce system in Central California. This MOU also sets forth the relative responsibilities of the Parties as they relate to a regional effort to plan and implement an integrated workforce funding effort for the region.

To ensure the maximum flexibility for all Parties under this MOU, it is agreed that the Parties may enter agency-specific agreements that are in furtherance of and complementary to this MOU. At a minimum, however, the Parties to this MOU agree to enforce the aspects of this MOU at the local level and/or encourage local representatives to enter into this MOU locally (including area-specific information).

2. VISION OF THE COLLABORATIVE

CCWC in collaboration with LWIA's[ml] of the region should respond effectively and quickly should federal and state funding opportunities that emphasize regional collaboration be offered. CCWC should implement the grants and undertake collaborative planning and implementation process.

3. TERM OF THE MOU.

This MOU is effective as of the date of the last signature hereto and shall continue for an initial term of one year and from year to year thereafter until terminated by the Parties hereto as set forth herein.

4. DECISION-MAKING PROCESS

The Parties anticipate a collaborative working relationship for this regional approach to workforce issues and funding mechanisms. The Parties agree to take all reasonable steps needed to best serve the collective interests of the Parties. CCWC shall consult with other Parties on major policy matters relating to the development, implementation, operation and funding of projects. CCWC has the responsibility for assuring the accomplishment of the purposes of the MOU. The Parties agree to cooperate through CCWC in carrying out its responsibilities under this MOU. In recognition of these basic principles, the Parties further agree as follows:

a. If there is a dispute over major policy matters not described in paragraph b, that relate to development, implementation, operation, allocation of funds, or other aspects of this MOU, CCWC will attempt to have the Parties reach agreement by consensus. If consensus cannot be reached on such matters, then unresolved issues may be decided by a two-thirds vote of all the Parties. Each party to this agreement is allocated one vote. A quorum for the conduct of business shall be a majority of the voting Parties to the MOU.

b. Notwithstanding sub-paragraph a, CCWC may make any decision that it regards as necessary or desirable to carry out its responsibilities and commitments under this MOU. Before exercising such authority, CCWC shall consult with the Parties to the maximum feasible extent.

c. Notwithstanding any other provisions of this MOU, CCWC shall have the authority to make binding decisions that it believes are either minor or implement previous policy decisions of the Parties.

d. No action shall be taken by CCWC which requires expenditures or involvement by any Party or Parties other than CCWC without prior approval of the named Parties.

5. PROCEDURES FOR AMENDMENT

This MOU and any amendments thereof shall remain in effect until terminated by the Parties hereto as set forth herein. Parties may request, in writing, an amendment to this MOU. The changes shall be documented, signed, dated under the conditions agreed upon by two-thirds or more of the Parties, and attached to the original MOU. If any provision of the MOU is held invalid, the remainder of the MOU shall not be affected.

6. TERMINATION

Participation in this MOU may be terminated by any Party for any reason after the Party complies with all of the conditions of termination. The conditions of termination include:

(a) The Party shall notify all the other Parties to this MOU in writing, of the Party's intention to terminate at least ninety (90) days prior to its termination; and (b) Any reasonable expenses associated with the Party's termination from this MOU shall be paid in full by the terminating Party.

7. PROVISION OF SERVICES

Each Party to this MOU agrees to enforce and/or encourage the following commitments:

* Each Party will select a representative and/or representative's designee to participate in CCWC activities and other required meetings of the Parties;

* Each Party will fund and implement its share of agreed upon activities of CCWC with either in-kind or financial contributions;

* Each Party will assign appropriate staff to work on issues and/or funding mechanisms; and

* Each Party will investigate all funding sources, both workforce investment and private, for projects determined by CCWC to be mutually beneficial to the region.

8. BREACH OF THE MOU

The Parties agree that each shall fulfill its responsibilities under this MOU in accordance with the provisions of law and regulations that govern its activities. This MOU does not negate any operating procedures in effect. If at any time a Party is unable to perform its

agreed functions under this MOU, such Party shall immediately provide written notice to the other Parties describing its inability to fulfill the requirements of this MOU and establish a date at the earliest convenience, but no more than thirty (30) days, to mutually resolve the issue.

Failure to abide by this MOU is basis for expulsion of such Party by the other Parties.

9. MISCELLANEOUS PROVISIONS

a. Mutual respect of organizational practices. All Parties agree to respect each other's

organizational practices and management structures in the activities engaged under this MOU.

b. Retention of individual action. This MOU does not restrict the Parties from the ability to individually (or collectively) pursue any policy, action or funding mechanism that CCWC could under the terms of this MOU; however, any such Party or Parties shall make reasonable efforts to provide advance notice of their action to the other Parties and allow them to comment upon or join in their action before proceeding.

c. Employees. It is expressly understood and agreed by all Parties that employees of Parties receiving compensation for work performed for this MOU shall in no way be deemed employees of CCWC.

d. Brown Act. The Parties acknowledge familiarity with applicable State laws, rules and regulations with regard to public meetings and will abide by them.

e. Indemnification and liability. By executing this MOU, the Parties agrees to work together to address issues and pursue funding streams to the benefit of their respective regions. However, the Parties are not legally "partners" to the extent that the term encompasses joint and several liability. Each Party under this MOU is responsible for its own employees, representatives, agents, and subcontractors.

However, it is understood and agreed that each Party shall, to the extent permitted by law, defend, indemnify and save harmless every other Party, and its officers and employees, from all claims, suits or actions of every name, kind and description resulting from the indemnifying Party's performance of this MOU, excluding any injuries, death, damage, or liability resulting from the negligence or willful misconduct of the other Parties or their officers or employees.

f. Equal opportunity and nondiscrimination. The Parties acknowledge familiarity with applicable Federal and State laws, rules, regulations, policies, procedures, and reporting requirements and will abide by them. This includes, but is not limited to, discrimination policies, compliance with Americans with Disabilities Act, and maintenance of drug free

PER SIGNATURE, WE AGREE TO ENFORCE THE PROVISIONS AND INTENT OF THIS MOU.

Blake Konzen — March 30, 2007

FRESNO AREA WORKFORCE INVESTMENT CORPORATION — DATE

Verna Lewis — March 30, 2007

KERN/INYO/MONO EMPLOYER'S TRAINING RESOURCE — DATE

[signature] — March 30, 2007

KINGS COUNTY JOB TRAINING OFFICE — DATE

Elaine M. Craig — March 30, 2007

MADERA COUNTY WORKFORCE INVESTMENT BOARD — DATE

Andrea T. Baker — March 30, 2007

MERCED COUNTY DEPARTMENT OF WORKFORCE INVESTMENT — DATE

[signature] — March 30, 2007

SAN JOAQUIN COUNTY EMPLOYMENT AND ECONOMIC DEVELOPMENT DEPARTMENT — DATE

Jeffrey Rowe — March 30, 2007

STANISLAUS COUNTY DEPARTMENT OF EMPLOYMENT AND TRAINING — DATE

Joyce H Daniel — March 30, 2007

TULARE COUNTY WORKFORCE INVESTMENT BOARD, INC. — DATE