Employment Development Department
State of California

California Labor Market and Economic Analysis

2012

Prepared by:
Labor Market Information Division
Employment Development Department
May 2, 2012

LaborMarketInfo
www.labormarketinfo.edd.ca.gov

Executive Summary

Introduction

The following executive summary highlights data included in the comprehensive economic and labor market analysis prepared by the Employment Development Department's Labor Market Information Division to support the California Workforce Investment Board's (CWIB) strategic planning process. This analysis was conducted to inform stakeholders about the current conditions and outlook for California's economy.

2011 California Industry Employment

- California's labor market consisted of just over 14 million non-farm jobs (10.7 percent of the nation's non-farm jobs)–representing the largest labor market in the U.S.

- The trade, transportation and utilities (18.4 percent); government (16.6 percent); professional and business services (14.7 percent); and educational and health services (12.7 percent) industry sectors had the largest shares of payroll jobs across the state.

- 2.7 percent (385,300 jobs) of the state's payroll jobs (14,445,700 jobs) were generated by the farm sector. Only the mining and logging sector made up a smaller share (0.2 percent) of payroll jobs, with just over 28,000 jobs.

Economic Conditions in California

- Despite the lingering effect of the Great Recession, California's economy experienced a moderate expansion; adding 327,600 jobs from September 2009 – December 2011.

- From September 2009 through December 2011, job growth derived from seven industry sectors; of those, mining and logging, professional and business services, and educational and health services grew at the fastest pace.

- By December 2011, the state's unemployment rate was 1.2 percentage points (11.2 percent) lower than its recessionary high of 12.4 percent, yet remained higher than its pre-recession low of 4.8 percent.

Sectors with Competitive Economic Advantage and Importance

- California has eight economic base industries: professional, technical, scientific, and management services; diversified manufacturing; wholesale trade and transportation; tourism and entertainment; resource-based; high technology manufacturing; basic information services; and government (federal only) are primarily geared to serving external markets. The state's ability to attract and retain firms within these industries largely determines how fast the state will grow relative to other states.

- The state's economic base industry employment held a 37.3 percent share (5.3 million jobs) of the state's total employment. Over the two years ending in December 2011, economic base industries grew at twice the pace of the overall state economy.

- Ten of the 16 fastest growing industry subsectors in terms of jobs were in economic base sectors. In terms of percentage growth, 12 of the 16 fastest growing industry subsectors derived from economic base sectors as well.

Mass Layoff Statistics

- Mass Layoff Statistics (MLS) are collected to identify, describe, and track large job cutbacks by establishments; providing insight into current economic trends across the state. As the state economy recovered from 2010 through 2011, almost all of the state's industry sectors experienced declines in the number of mass layoff events; most notably the manufacturing (41.8 percent decline), finance and insurance (34.1 percent decline), and transportation and warehousing (28.4 percent decline) sectors. In addition, the number of separations[1] also declined in every industry sector. The largest declines occurred in government, construction, and wholesale trade.

Demographics of California's Labor Force

- California has the nation's largest working age population consisting of 28.6 million persons and is inclusive of one of the nation's youngest, most diverse, and highly skilled labor forces (32.8 percent held a bachelor's degree or higher) as well. In 2011, the labor force consisted of 16.2 million employed and 2.2 million unemployed persons.

- The state's share of workers 34 years old or younger (36.8 percent) was 1.2 percentage points higher than the nation's (35.6 percent). In addition, Hispanics represented 35.9 percent of the labor force, more than twice as high as their national representation (14.9 percent).

Effects of Domestic and Foreign Migration on California's Labor Force

- The size of California's labor force is influenced by changes to its population. This includes the net change the state's population, including net changes to the state's working age population (+255,000 net change) and net in-migration, the count of people moving into the state minus the number of people moving out of the state (-169,300 persons net change). Net migration includes the number of people entering the state from other countries.

---

[1] Separations represent counts of initial regular Unemployment Insurance benefit claims filed by workers who have lost their jobs. This does not include claims for extended Unemployment Insurance benefits.

- 53.8 percent of the state's population was born in California; the remainder of the state's residents was born in another state (17.8 percent), foreign country (27.2 percent), or U.S. territory (1.2 percent).

California Industry and Occupational Employment Projections 2010-2012

- California is forecasted to experience widespread, moderate growth from 2010-2012 with the addition of more than 486,000 non-farm jobs by the third quarter of 2012. Demographic trends and an increased consumer demand for goods and services are some of the factors that will facilitate short-term job growth in the state's economy.

- More than half of the projected non-farm growth is projected to come from the professional and business services (152,700 jobs); educational services (private), health care and social assistance (78,500 jobs); and leisure and hospitality (58,000 jobs) sectors.

- 1.2 million job openings are forecasted for the state's economy by the third quarter of 2012 due to industry growth (538,800 jobs) and the need to fill vacancies when a worker retires, changes careers, or leaves for personal reasons (727,900 jobs).

- Thirty-four percent of the jobs generated from industry growth (538,800 jobs) are forecasted to come from the office and administrative support (79,700 jobs); sales and related (60,200 jobs); and food preparation and serving related (45,000 jobs) occupational groups.

- More than half of the top 50 occupations will have more openings due to replacement needs as workers continue to move in and out of these occupations.

California Industry and Occupational Employment Projections 2008-2018

- The ten-year forecast cites state population growth and the rise of foreign imports and exports as factors contributing to the state's long-term job growth.

- The educational services (private) and health care and social assistance are two of the three industry sectors that will generate a majority of the non-farm job growth; collectively these two sectors are forecasted to add over 400,000 jobs by 2018.

- California's employment[2] is forecasted to expand to over 18 million jobs by 2018, with the addition of more than 1.6 million jobs, in effect, recovering more than the 1.1 million jobs lost (not seasonally adjusted) during the latest economic downturn.

---

[2] This includes employment covered and not covered by Unemployment Insurance. Non-covered employment includes self-employed workers, unpaid family workers, and private household workers.

- Occupations with a large number of job openings such as: registered nurses, general and operations managers, first-line supervisors/managers of office and administrative support workers, executive secretaries and executive administrative assistants, accountants and auditors, and sales representatives, wholesale and manufacturing, except technical and scientific products are expected to generate 40,000 job openings each and offer median hourly wages in excess of $20 per hour.

- The percentage growth rate for each of the state's top 50 fastest growing occupations is projected to be more than twice as high as the 9.7 percent rate projected for occupations in the state. These occupations are concentrated heavily in the health care industry, indicative of the continued demand for quality health care throughout the forecast period.

Growth Industries with High-Demand Occupations

- Health care and social assistance; professional, scientific, and technical services; and wholesale trade are growth industries projected to expand due to long-term structural trends in the state's economy. However, the growth of these industries can vary depending on the geographic region, the composition of local businesses, the nature and talents of the local workforce, and the interaction between business, education, and workforce preparation.

- Employment for the top 10 high-demand occupations[3] within the health care and social assistance; professional, scientific, and technical services; and wholesale trade industries are projected to increase by over 50,000 jobs between 2008 and 2018. High-demand occupations require varied levels of expertise that have training requirements ranging from on-the-job employer training for entry-level wholesale trade occupations to advanced training coupled with a bachelor's degree or higher for occupations in professional, scientific, and technical service industries.

- Most of California's industries contain a wide range of occupations and some share similar work activities. For example, the top five largest growth occupations within the health care and social assistance industry, which range from nursing attendant to registered nurse, each perform similar work activities, though the activities may vary greatly in complexity. These activities include assisting and caring for others; monitoring processes, materials, or surroundings; and identifying objects, actions, and events.

- The top 10 high-demand occupations within each respective growth industry share five distinct skill sets as defined by the Occupational Information Network (O*NET):

---

[3] High-demand occupations are representative of occupations that are located within industries that show current and projected employment growth, typically those occupations that are projected to experience the fastest or largest absolute growth, such as registered nurses.

Active listening – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Critical thinking – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.

Monitoring – Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Reading comprehension – Understanding written sentences and paragraphs in work-related documents.

Speaking – Talking to others to convey information effectively (in most instances, the ability to communicate in English is explicitly stated or inferred).

Occupations with High Unemployment and Related Skills

- 2010 American Community Survey data suggests that occupations within industries that experienced high unemployment rates have many of the same skills required for in-demand occupation, albeit at different competency levels.

- Some dislocated workers within these occupations (e.g., carpenters, sales route drivers) could benefit from training that helps align transferable skills such as critical thinking to in-demand occupations within, but not limited to, the health care and wholesale trade industry sectors.

Career Pathways

- Career pathways illustrate an individual's progression of training, formal education, and occupational experiences to advance to a desired occupation with a higher wage. Tasks performed along the pathway may be specific to individual occupations, but skills and knowledge are shared and enhanced over the course of time (e.g., home health care aides to registered nurse).

Regional Information:

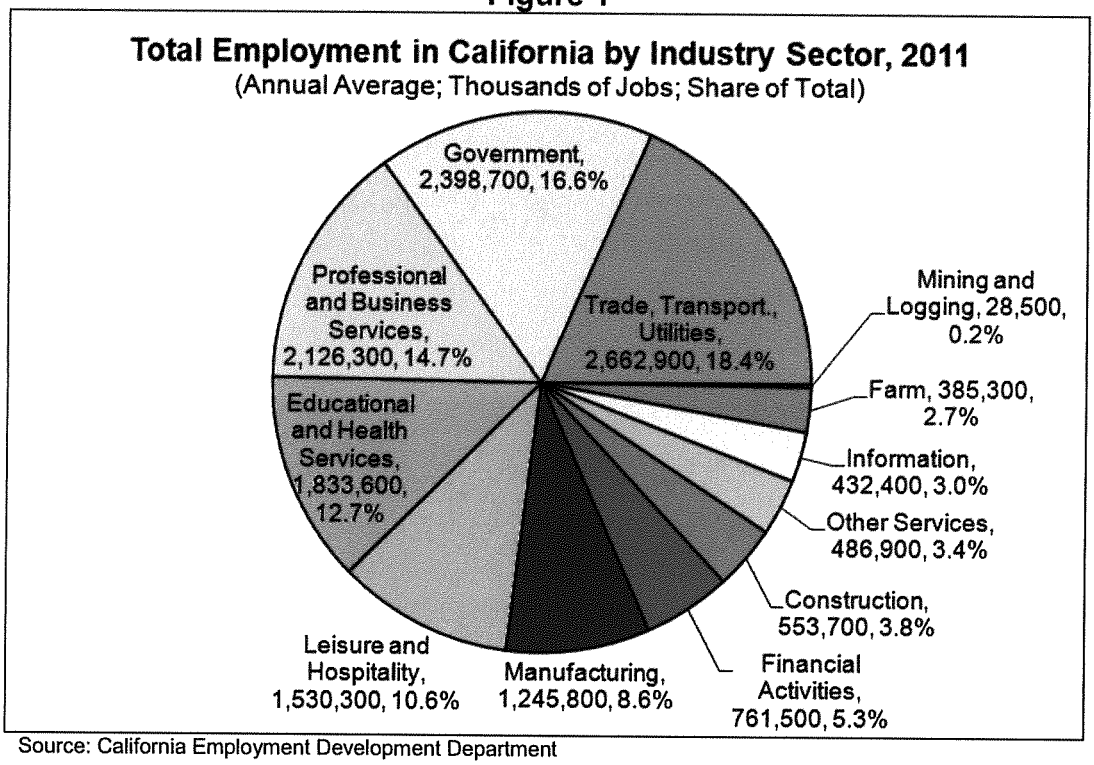
- In an economy and labor market as large and diverse as California, local and regional analyses are equally important. For additional information, see the Labor Market Information Web site www.labormarketinfo.edd.ca.gov and the California Workforce Investment Board Web site at http://www.cwib.ca.gov/plans_policies_state_plans.htm.

Labor Market and Economic Analysis

Overview of Current California Industry Employment

California has the largest labor market in the United States. Payrolls in all California industries totaled 14,445,700 jobs in 2011. Farm sector employment totaled 385,300 jobs, comprising 2.7 percent of all California jobs. Nonfarm employment totaled 14,060,500 jobs. One out of every nine (10.7 percent) nonfarm jobs in the United States was located in California. The vast majority (84.7 percent) of California's jobs were in service-providing industries. Goods producing industries supplied just 15.3 percent of California jobs. Figure 1 shows California total employment in 2011 by industry sector.

Figure 1



Source: California Employment Development Department

Employment in the trade, transportation, and utilities; government; and professional and business services sectors each totaled more than 2 million jobs in 2011. Together, these three sectors accounted for half (49.8 percent) of California's jobs. Employment in three additional sectors – educational and health services, leisure and hospitality, and manufacturing – each totaled more than 1.2 million jobs. These three sectors combined comprised nearly one-third (31.9 percent) of overall employment. The remaining six industry sectors each had fewer than 800,000 jobs, and combined, accounted for less than one-fifth (18.3 percent) of the state's jobs.

According to an average of Quarterly Census of Employment and Wages (QCEW) Program data for the four-quarter period ending September 2011, the average annual pay in all California industry sectors was $54,777.[4] Mining and logging and the information sector were California's highest paying industry sectors, with average annual pay of $134,023 and $106,625, respectively. Five additional industry sectors had higher average pay than the overall average: financial activities ($81,963), manufacturing ($76,462), professional and business services ($71,506), government ($58,781), and construction ($56,476). In contrast, the lowest paying industry sectors were leisure and hospitality ($24,689), agriculture ($25,465), and other services ($26,342). Table 1 provides a ranked list of major California industry sectors by average pay for the four quarters ending with the third quarter of 2011.

Table 1

Average Pay in Major California Industry Sectors: Third Quarter 2011

(Four-Quarter Average of Quarterly Census of Employment and Wages Data)

Industry Sector	Average Weekly Pay ($)	Average Annual Pay ($)
Total, All industries	1,053	54,777
Mining and Logging	2,577	134,023
Information	2,050	106,625
Financial Activities	1,576	81,963
Manufacturing	1,470	76,462
Professional and Business Services	1,375	71,506
Government	1,130	58,781
Construction	1,086	56,476
Education and Health Services	1,009	52,474
Trade, Transportation, and Utilities	857	44,576
Other Services	507	26,342
Agriculture, Forestry, Fishing and Hunting (Excluding Logging)	490	25,465
Leisure and Hospitality	475	24,689

Source: Quarterly Census of Employment and Wages Program, California Employment Development Department

Several industry sectors included both higher and lower paying subsectors. Within the financial activities sector, the four-quarter average pay in the finance and insusrance subsector ($96,713) was nearly double that of the real estate and and rental and leasing subsector ($51,266). Within the professional and business services sector, average pay in the management of companies and enterprises and the professional, scientific, and technical services subsectors ($101,560 and $93,889, respectively) was much higher

[4] The gross average wage data of the QCEW do **not** take into account the number of hours worked by employees and includes all compensation, including bonuses.

than in the administrative and support and waste services subsector ($37,925) during the four-quarter period. Within the educational and health services subsector, annual pay in the health care and social assistance and the educational services subsectors averaged $53,815 and $45,374, respectively. Within the health care and social assistance subsector, the health care industry ($58,307) paid much more than social assistance ($27,681). Within the trade, transportation, and utilities sector, the four-quarter average pay in the wholesale trade ($66,993) and transportation, warehousing, and utilities subsectors ($55,185) was much higher than in the retail trade ($31,784).

Economic Conditions in California

The year 2011 ended with the California economy on a sustained path of moderate expansion, but still trying to escape the grasp of the Great Recession. From September 2009 through December 2011, California nonfarm payrolls grew by 327,600 jobs. Moreover, the economy was growing at a steady pace. The state's year-over job gains totaled 167,900 (1.2 percent) in December 2011. This was a slight improvement over the 145,500 jobs (1.0 percent) the state gained over the year ending in December 2010. Despite this job growth, total nonfarm employment in California in December 2011 remained more than one million jobs below its pre-recession peak in July 2007. The economy had recovered less than one-quarter of the nearly 1.4 million jobs it lost during the recession.

Table 2 shows the changes in industry sector jobs from September 2009 through December 2011, with the sectors ranked by percentage growth. Figure 2 shows the five-year growth trend in non-farm employment through December 2011.

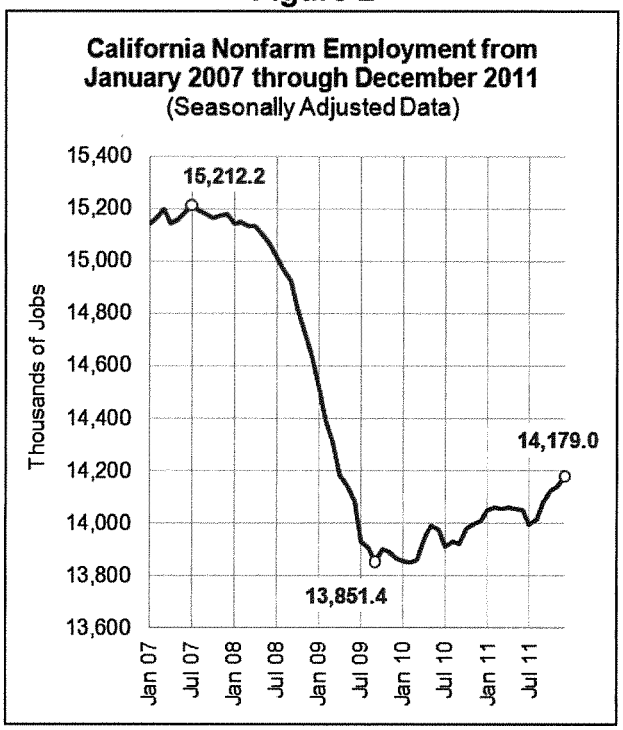
Table 2

Changes in California Industry Sector Jobs: September 2009 - December 2011
(Thousands of Jobs; Seasonally Adjusted Data)

	Change in Number	Change in Percent
Total Nonfarm Jobs	**327.6**	**2.4%**
Mining and Logging	2.9	11.4%
Professional and Business Services	147.1	7.3%
Educational and Health Services	96.0	5.4%
Leisure and Hospitality	53.4	3.6%
Trade, Transportation and Utilities	80.1	3.1%
Information	10.1	2.3%
Other Services	6.3	1.3%
Financial Activities	-3.5	-0.5%
Manufacturing	-7.5	-0.6%
Government	-29.6	-1.2%
Construction	-27.7	-4.7%

Source: Quarterly Census of Employment and Wages Program, California Employment Development Department

Figure 2



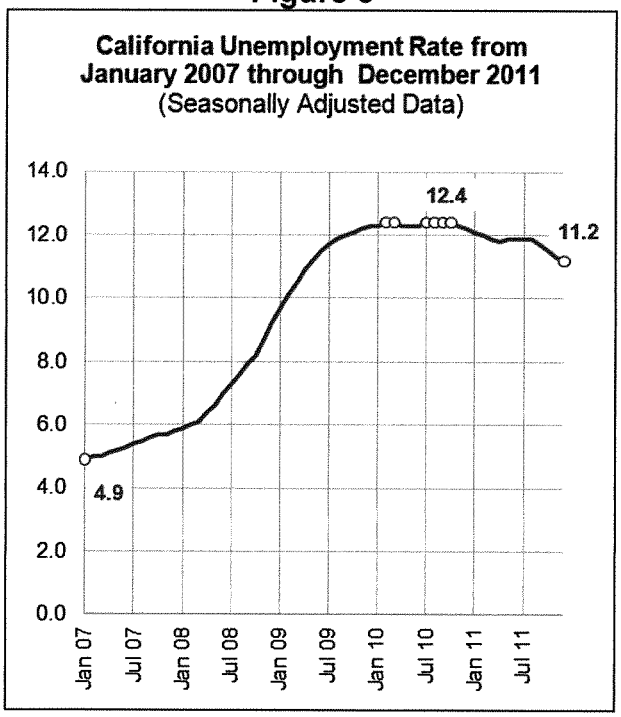
Source: Quarterly Census of Employment and Wages Program, California Employment Development Department

California's industry job growth was broad-based across most of the economy from September 2009 through December 2011, with seven sectors gaining jobs and four sectors losing jobs. Professional and business services; educational and health services; and trade, transportation, and utilities added the most jobs, gaining a combined 323,200 jobs over the period. Mining and logging, professional and business services, and educational and health services grew at the fastest pace over the period.

Four sectors lost jobs even as the rest of the economy was recovering. The largest losses were in government and construction, followed by manufacturing and financial activities. However, construction, manufacturing, and financial activities each gained jobs over the year ending in December 2011, suggesting that employment conditions in these industries had stabilized and were poised to improve. Government was the exception. The sector experienced deeper job losses over the course of 2011 than it did during 2010.

California's unemployment rate was 11.2 percent in December 2011. Although still historically high, the year ended with unemployment trending downward. The December 2011 rate was 1.2 percentage points lower than its recessionary high of 12.4 percent that occurred six times in 2010. Although there were still 2,060,100 unemployed Californians in December 2011, their number had fallen by 212,800 since the recessionary peak in September 2010. Figure 3 shows the five-year trend in the California unemployment rate ending in December 2011.

Figure 3



Source: Local Area unemployment Statistics Program, California Employment Development Department

Although unemployment conditions in California were improving and heading in the right direction at the end of 2011, the economy still had a long way to go in its recovery from the recession. In December 2011, California's unemployment rate was 6.4 percentage points higher than its pre-recession low of 4.8 percent in September through November 2006. There were 1.2 million more unemployed Californians than there were in October 2006, when unemployment was at the pre-recession low.

Sectors with Competitive Economic Advantage

Distinguishing between economic base industries and population-serving industries is useful in analyzing competitive economic advantage and importance. Population-serving industries primarily serve local markets in the state and include industries such as retail trade, health care, food services, state and local government, construction, and finance. Population growth typically is the primary driver of job growth in these industries. In contrast, economic base industries typically serve external markets. As a result, firms in economic base industries have more flexibility in deciding where to locate their operations or production facilities. A state or region's ability to attract and retain these firms largely determines how fast a state will grow relative to other states in the nation. In turn, a dynamic economic base spurs income and employment growth in population-serving industries.

California's economic base is comprised of eight industries: professional, technical, scientific, and management services; diversified manufacturing; wholesale trade and transportation; tourism and entertainment; resource-based production activities; high technology manufacturing; basic information services; and government (federal only). Table 3 shows the employment levels of these industries in 2011.

Table 3

Employment in California's Economic Base Industries, 2011
(Annual Average Data)

	Number of Jobs	Share of All Economic Base Industry Jobs (%)	Share of Total Employment (%)
Total Employment, All Industries	14,445,700	--	--
Population-Serving Industries	9,060,100	--	62.7%
Economic Base Industries	5,385,600	100.0%	37.3%
Economic Base Sectors:			
Professional, Technical, Scientific, and Management Services	1,595,600	29.6%	11.0%
Wholesale Trade and Transportation	1,034,900	19.2%	7.2%
Diversified Manufacturing	823,900	15.3%	5.7%
Tourism and Entertainment	591,400	11.0%	4.1%
Resource Based	444,800	8.3%	3.1%
High Tech Manufacturing	390,900	7.3%	2.7%
Federal Government	255,100	4.7%	1.8%
Basic Information Services	249,000	4.6%	1.7%

Source: Quarterly Census of Employment and Wages Program, California Employment Development Department

Employment in California's economic base industries totaled 5,385,600 jobs in 2011, making up 37.3 percent of the state's total employment. The professional, technical, scientific, and management services sector was the largest economic base sector with 1,595,600 jobs, followed by wholesale trade and transportation (1,034,900 jobs). These two sectors industries accounted for nearly half (48.8 percent) of the jobs in California's economic base, and nearly one-fifth (18.2 percent) of overall employment. The diversified manufacturing sector and the tourism and entertainment sector (including motion pictures and sound recording) were the other sectors that individually comprised more than 10 percent of total jobs in California's economic base. Together, these sectors accounted for just over one-quarter (26.3 percent) of the jobs in the base. The remaining jobs in California's economic base were scattered in the resource-based, high technology manufacturing, federal government, and basic information services sectors.

Table 4 shows the changes in employment in California's economic base and population-serving industries over the two years ending in December 2011.[5] The industry sectors have been ranked by percentage change. Population-serving industries have been regrouped into sectors in order to highlight their employment growth

[5] A two-year comparison was chosen to analyze job growth during the economic expansion because the data are not seasonally adjusted. Comparing data from like months is the most effective way to control for normal seasonal patterns of employment when analyzing unadjusted data.

potential. These sectors are: private educational services, health care services, consumer industries (retail trade, food services, personal services, rental and repair), finance, social assistance and nonprofit organizations, state and local government (including public education), construction and real estate, and all other population serving industries.

Table 4

Changes in Jobs in California's Economic Base and Population-Serving Industry Sectors: December 2009 - December 2011
(Not Seasonally Adjusted Data)

	Change in Number	Change in Percent
Total Employment, All Industries	**288,300**	**2.0%**
All Economic Base Sectors	**208,100**	**4.0%**
Resource-Based Production	39,600	11.2%
Professional, Technical, Scientific, and Management Services	105,500	6.8%
Wholesale Trade and Transportation	40,000	4.0%
Tourism and Entertainment	17,400	3.0%
High Tech Manufacturing	6,600	1.7%
Federal Government	4,100	1.7%
Basic Information Services	2,200	0.9%
Diversified Manufacturing	-7,300	-0.9%
Total Population-Serving Sectors	**80,200**	**0.9%**
Private Educational Services	24,400	7.6%
Health Care Services	46,300	3.7%
Consumer Industries (including rental and repair)	69,300	2.4%
Other Population-Serving Industries	14,200	2.0%
Finance	6,000	1.2%
Social Assistance and Nonprofit Organizations	4,100	1.0%
State and Local Government	-61,300	-2.8%
Construction and Real Estate	-22,800	-3.0%

Source: Quarterly Census of Employment and Wages Program, California Employment Development Department

The data show that California's economic base grew by 208,100 jobs (4.0 percent) over the two years ending in December 2011, and grew at twice the pace of the overall economy and more than four times the rate of population-serving industries. The high-skill professional, technical, scientific, and management services sector grew by 105,500 jobs over the two-year period, accounting for over half of the job growth in California's economic base. The wholesale trade and transportation sector (40,000 jobs) added the second largest number of jobs over the period, followed by the resource-based sector (39,600 jobs), and tourism and entertainment sector (17,400 jobs). These

same sectors were California's fastest growing economic base sectors over the last two years, paced by the resource-based sector's 11.2 percent job gain.

Whereas the high-tech manufacturing sector grew by 6,600 jobs over the two years ending in December 2011, the diversified manufacturing sector lost 7,300 jobs and was the only sector in California's economic base to lose jobs over the period. This underscores a longer-term trend in California manufacturing, in which the state has maintained a competitive advantage in more advanced, sophisticated, and knowledge-based manufacturing while more repetitive, less skill-demanding manufacturing functions have moved or been outsourced to other states or abroad, where labor costs are cheaper.

Private educational services and health care services were the fastest growing sectors in the population-serving segment of the economy over the two years ending in December 2011. In sharp contrast, budget-strapped state and local governments, which include public educational services, lost 61,300 jobs over the two-year period even as the rest of the economy was expanding. These losses were concentrated in local public education.

Private educational services and health care services were also the only two sectors in the California economy to expand their employment during the Great Recession. Job growth in health care services has been driven by the health demands of the aging baby boomer generation, and this growth trend should continue well into the foreseeable future. Employment growth in the private educational services sector occurred at the same time that job losses in public education mounted. Given the uncertain budget outlook of state and local governments, this trend will likely continue.

Emerging Industry Sectors

California has traditionally been an incubator for emerging industries, particularly in the fields of high technology, information technology, science, and engineering. However, it is inherently difficult to identify and quantify employment in emerging industries. Not only are industry classifications delineated based on past experience, but there is typically a time lag before new establishments are counted and included in the establishment survey on which industry employment estimates are based.

Table 5 shows California's 16 fastest growing industry subsectors in number and percent from December 2009 through December 2011. The table distinguishes between economic base and population-serving subsectors.

Ten of California's fastest growing industry subsectors in number of jobs were economic base subsectors, as were 12 of the fastest growing subsectors in percentage growth. These economic base subsectors signal areas in which California holds a competitive advantage: professional, technical, scientific, and management services (computer systems design and related services; management, scientific, and technical consulting services; specialized design services); high technology manufacturing (computer and electronic product, machinery, and primary metal manufacturing); entertainment (motion

pictures and sound recording industries); international trade (wholesale trade and transportation industries); and resource-based industries (agriculture, forestry, fishing, and hunting; support activities for mining).

Looking forward, many believe that California's clean air initiative (Assembly Bill 32) creates conditions and incentives that are in principle favorable to the development of a clean and alternative energy industry sector. Whether or not such an industry sector emerges, the key to California's success as an incubator of emerging industries has been its well-integrated network of high technology manufacturing and services firms, its research universities and institutions, its educated and skilled workforce, and its culture of innovation and entrepreneurship. Maintaining and nurturing of this infrastructure and the preparation and continued development of a skilled and educated workforce is critical to this effort and is vital to California's future economic success.

Table 5

California Nonfarm Industry Subsectors with the Largest Job Gains
December 2009 - December 2011
(Not Seasonally Adjusted Data)

	Two-year Change in Number	Sector		Two-year Change in Percent (%)	Sector
Food Services & Drinking Places	47,700	P	Junior Colleges (Private)	25.8	P
Ambulatory Health Care Services	37,900	P	Support Activities for Mining	25.5	B
Agriculture, Forestry, Fishing & Hunting	37,200	B	Management, Scientific & Technical Consulting Services	16.6	B
Employment Services	31,200	B	Colleges, Universities & Professional Schools (Private)	14.6	P
Management, Scientific & Technical Consulting Services	25,400	B	Computer Systems Design & Related Services	12.7	B
Computer Systems Design & Related Services	24,800	B	Agriculture, Forestry, Fishing & Hunting	12.4	B
Colleges, Universities & Professional Schools (Private)	19,000	P	Wholesalers Electronic Markets Agents & Brokers	9.5	B
Clothing & Clothing Accessories Stores	15,600	P	Employment Services	9.2	B
Motion Picture & Sound Recording Industries	13,200	B	Primary Metal Manufacturing	9.2	B
Merchant Wholesalers, Durable Goods	11,900	B	Motion Picture & Sound Recording Industries	8.9	B
General Merchandise Stores	11,400	P	Machinery Manufacturing	8.4	B
Merchant Wholesalers, Nondurable Goods	11,000	B	Clothing & Clothing Accessories Stores	8.4	P
Nursing & Residential Care Facilities	9,000	P	Truck Transportation	7.9	B
Wholesalers Electronic Markets Agents & Brokers	8,300	B	Other Schools & Instruction (Private)	7.4	P
Computer & Electronic Product Manufacturing	8,200	B	Advertising & Related Services	7.3	B
Truck Transportation	8,000	B	Specialized Design Services	7.1	B

B= Economic Base Subsector, P = Population-Serving Serving

Source: Quarterly Census of Employment and Wages Program, California Employment Development Department

Mass Layoff Statistics

Mass Layoff Statistics (MLS) provide additional insight into current economic trends. These data identify, describe, and track large job cutbacks by individual establishments. A potential mass layoff event occurs when an establishment has 35 initial unemployment compensation claims filed against it within a five-week period. A verified mass layoff event occurs when an employer verifies that 50 or more employees were separated from their jobs for more than 30 days.

Table 6 displays California potential mass layoff events by industry for 2009-2011. The MLS data underscore that the effects of the recent economic downturn had been widely felt across major industry sectors and subsectors. Industry data show that there were 4,372 potential mass layoff events in California in 2011, a decrease of 16.6 percent from 2010. In contrast, there were 5,096 potential mass layoff events in California in 2010, an increase of 33.0 percent from 2009, when there were 3,412 events.

The downturn was most prevalent from 2009-2010 when all California industry sectors and subsectors experienced an increase in the number of potential mass layoff events. The number of mass layoff events in the agriculture, forestry, fishing and hunting and the healthcare and social services sectors doubled. Three additional industries experienced an increase in potential mass layoff events of more than 40.0 percent from 2009 through 2010: government; educational services; and arts, entertainment and recreation. Meanwhile manufacturing experienced the smallest increase during this downturn. As the economy started to recover, almost all California industry sectors and subsectors experienced a decrease in the number of potential mass layoff events. The manufacturing industry had the greatest decline of 41.8 percent. Three additional industries experienced a one-third decrease in potential mass layoff events from 2010 through 2011: finance and insurance, wholesale trade, and transportation and warehousing.

Table 6

Potential Mass Layoff Events in California 2009-2011
Change-Over Data by Industry
(Not Seasonally Adjusted Data)

		Potential Events			Potential Events Initial Claims			Year-over-change Events		Year-over-change Separations	
Industry		2009	2010	2011	2009	2010	2011	2009-2010	2010-2011	2009-2010	2010-2011
California Total	NAICS	3,412	5,096	4,372	730,187	1,253,544	1,038,248	33.0%	-16.6%	41.8%	-20.7%
Agriculture, Forestry, Fishing and Hunting	11	215	567	501	29,168	89,371	75,307	62.1%	-13.2%	67.4%	-18.7%
Construction	23	413	521	400	51,375	71,405	49,042	20.7%	-30.3%	28.1%	-45.6%
Manufacturing	31-33	489	492	347	65,031	75,897	56,856	0.6%	-41.8%	14.3%	-33.5%
Wholesale Trade	42-43	90	109	83	9,637	12,996	9,180	17.4%	-31.3%	25.8%	-41.6%
Retail Trade	44-45	299	414	378	92,488	152,112	125,393	27.8%	-9.5%	39.2%	-21.3%
Transportation and Warehousing	48-49	98	140	109	26,956	34,523	26,955	30.0%	-28.4%	21.9%	-28.1%
Information	51	185	289	286	90,577	188,182	171,943	36.0%	-1.0%	51.9%	-9.4%
Finance and Insurance	52	114	177	132	27,789	42,707	30,356	35.6%	-34.1%	34.9%	-40.7%
Professional and Technical Services	54	170	243	204	42,803	70,634	60,494	30.0%	-19.1%	39.4%	-16.8%
Administrative and Waste Services	56	435	613	607	137,610	225,844	196,260	29.0%	-1.0%	39.1%	-15.1%
Educational Services	61	314	579	493	59,630	114,592	97,976	45.8%	-17.4%	48.0%	-17.0%
Health Care and Social Assistance	62	104	210	221	14,269	31,701	30,125	50.5%	5.0%	55.0%	-5.2%
Arts Entertainment and Recreation	71	100	175	154	15,110	30,111	25,971	42.9%	-13.6%	49.8%	-15.9%
Accommodation and Food Services	72	209	310	253	40,770	62,705	49,050	32.6%	-22.5%	35.0%	-27.8%
Government	92	61	115	107	12,559	32,396	21,629	47.0%	-7.5%	61.2%	-49.8%

MLS Notes:

1) The Mass Layoff Statistics (MLS) Program collects reports on mass layoff actions that result in workers being separated from their jobs. Monthly mass layoff numbers are from establishments which have at least 35 initial claims for unemployment insurance (UI) filed against them in a 5-week period.

2) Claims are defined as initial unemployment claims.

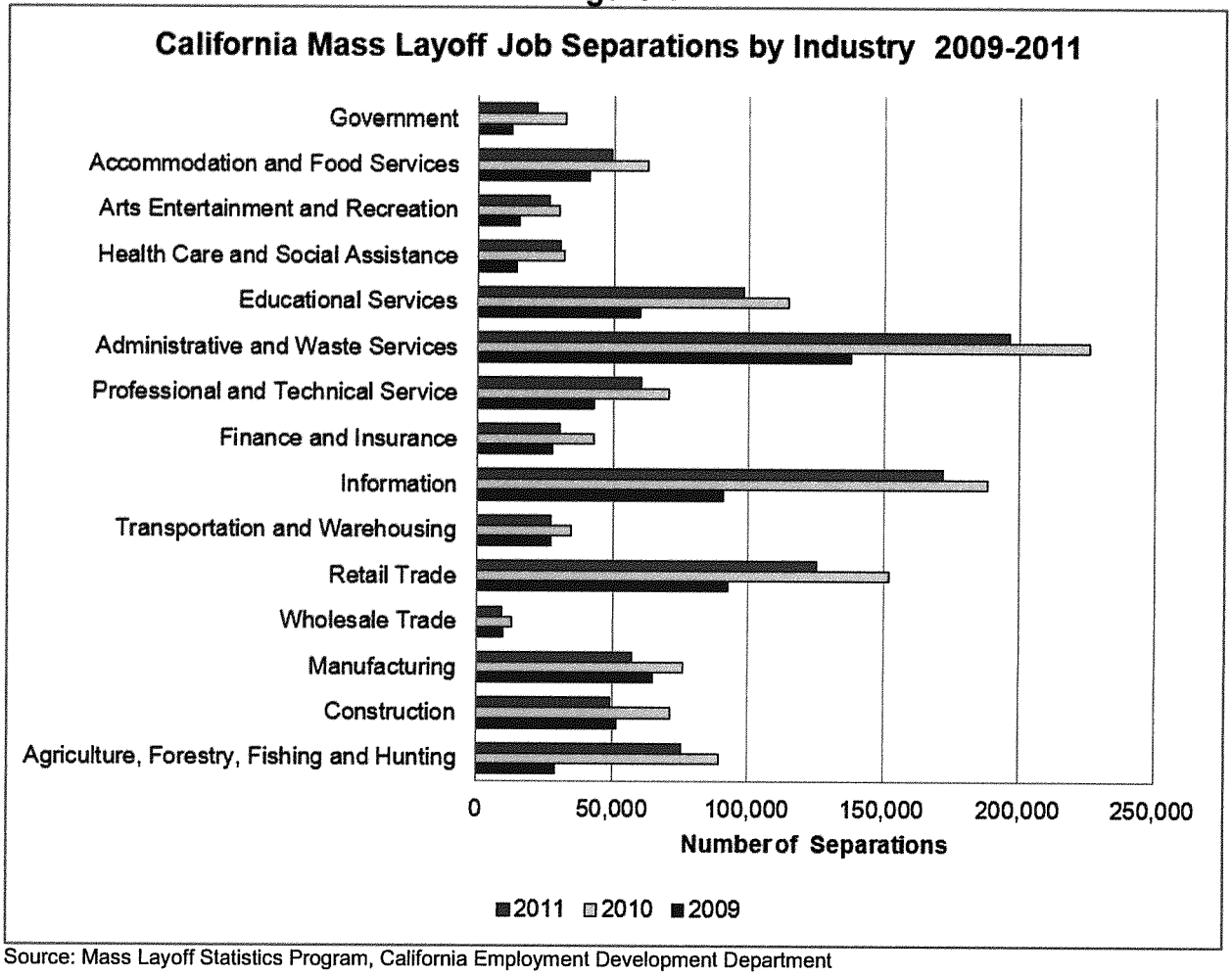
3) Industries may not add to total; some industries are not published due to confidentiality.

Source: Mass Layoff Statistics Program, California Employment Development Department

Figure 4 shows the number of job separations caused by mass layoff events by industry over the 2009 to 2011 period. Job separations are represented by the number of initial claimants that filed for their first 26 weeks of unemployment. The number of separations increased in every industry from 2009 to 2010. During this time period the industries with the greatest increase in the number of separations were the agriculture, forestry, fishing, and hunting; the healthcare and social services; and the educational services industry sectors. The manufacturing industry showed the smallest increase. As the economy started to recover, the number of separations declined in every industry from

2010 to 2011. The industries with the greatest decrease in the number of separations were government, construction, and wholesale trade. The healthcare and social assistance industry had the smallest decrease.

Figure 4



Source: Mass Layoff Statistics Program, California Employment Development Department

From 2009 through 2011, mass layoff events in California affected various demographic groups in the labor force, as seen in Table 7. The demographic groups of separating workers remained fairly stable from 2009 to 2011. By gender, males were more affected by mass layoffs than females. The age group most affected by mass layoffs was the 30 to 44 years old category, which accounted for 34.2 percent of all affected workers. This age group makes up about forty percent of the state's labor force. The second largest age group that was affected by mass layoffs was the under 30 age category. By race and ethnicity the largest group of workers affected by mass layoffs was the white/non-Hispanic category, while those of Hispanic origin represented a slightly smaller share of the mass layoff-related separations. Mass layoff events affected 2.2 percent of the state's labor force in 2011.

Table 7

Demographic Characteristics of Californians Affected by Verified Mass Layoff Events
2009-2011

	Number of Affected Workers					
	2009	Percentage	2010	Percentage	2011	Percentage
All Workers	556,695	100.0%	418,391	100.0%	401,966	100.0%
Gender						
Male	337,682	60.7%	247,577	59.0%	242,673	60.4%
Female	218,372	39.2%	170,188	41.0%	158,716	39.5%
Age						
Under 30	150,134	27.0%	114,278	27.0%	94,687	23.6%
30 to 44	190,112	34.2%	139,651	33.0%	142,934	35.6%
45 to 54	127,457	22.9%	93,821	22.0%	95,403	23.7%
55 and over	87,930	15.8%	69,703	17.0%	68,138	17.0%
Race/Ethnicity						
White/Non-Hispanic	212,808	38.2%	169,454	41.0%	176,518	43.9%
Black/Non-Hispanic	49,250	8.8%	37,293	9.0%	31,805	7.9%
Hispanic origin	201,385	36.2%	150,315	36.0%	136,130	33.9%
American Indian or Alaskan Native	4,144	0.7%	3,062	1.0%	2,525	0.6%
Asian or Pacific Islander	40,630	7.3%	24,037	6.0%	20,680	5.1%

Notes:
1) This table summarizes the demographic characteristics of workers who filed unemployment claims against employers that were involved in a verified mass layoff event. A verified mass layoff event occurs whenever 50 or more employee's are laid off for more that 30 days.
2) Workers who were not classified by demographic characteristics are not shown in this table.

Source: Mass Layoffs Statistics Program, California Employment Development Department

Demographics of California's Labor Force

As the most populous state in the nation, California also has the nation's largest labor force and working-age population. In 2011, the EDD reported a working-age population (civilian, non-institutional, persons age 16 years and over) of 28.6 million, of which 18.4 million were in the labor force – 16.2 million employed and 2.2 million unemployed. This translates into a labor force participation rate of 63.4 percent. The demographic composition of California's labor force differs in two main respects from the nation as a whole. First, it is slightly younger: 58.6 percent of California's labor force was less than 45 years old in 2011, while 56.8 percent of the nation's labor force was aged between 16 and 44 years in 2011. Second, it has a substantially larger percentage of Hispanics: 35.9 percent in California compared to 14.9 percent in the U.S. California also has a highly skilled labor force, and one that contains a large number of foreign born and non-English speaking workers. For instance, in 2010, 27.5 percent of California workers were foreign born compared to 12.9 percent in the nation, and 10.5 percent of all Californians lived in households where all adults spoke only Spanish.

Table 8

Demographics of California Labor Force Working-age Population, 2011 (Age 16 and Over, Annual Average)				
Demographic	**Population aged 16 and over**	**Population Share (Percent)**	**Labor Force**	**Labor Force Share (Percent)**
Race				
Total, all races	28,604,000	100	18,147,000	100
White	22,017,000	77.0	14,040,000	77.4
Asian	3,717,000	13.0	2,361,000	13.0
Black	1,808,000	6.3	1,060,000	5.8
All Others	1,063,000	3.7	686,000	3.8
Ethnicity				
Hispanic or Latino ethnicity	9,875,000	34.5	6,511,000	35.9
Age				
16-19	2,132,000	7.5	563,000	3.1
20-24	2,792,000	9.8	1,908,000	10.5
25-34	5,294,000	18.5	4,210,000	23.2
35-44	4,916,000	17.2	3,948,000	21.8
45-54	5,124,000	17.9	4,104,000	22.6
55-64	4,055,000	14.2	2,658,000	14.6
65 and older	4,292,000	15.0	755,000	4.2
Total	28,604,000	100	18,147,000	100

NOTE: Persons whose ethnicity is identified as Hispanic or Latino may be of any race.
Source: U.S. Bureau of Labor Statistics (BLS), Current Population Survey (CPS)

Age

In 2011, 36.8 percent of the California labor force was 34 years old or younger, compared to 35.6 percent for the entire nation. Conversely, 41.4 percent of the California labor force was 45 years of age and older, compared to 43.1 percent for the nation. Like the rest of the nation, California faces an aging workforce, and loss of skilled workers due to retirement.

Only 26.4 percent of Californians aged 16-19 participated in the civilian labor force in 2011. This age group's participation rate has declined by 19.3 percentage points since 2000, which is much higher than the drop of 3.7 percentage points in the statewide labor force participation rate during the same time. Those aged 20-24 years recorded a 7.8 percentage point decline in labor force participation rate between 2000 and 2011, from 76.2 percent to 68.4 percent. In contrast, the labor force participation rates of those aged 55-64 and 65 and older increased by 5.2 percentage points and 5.0 percentage points, respectively, since 2000.

Race and Ethnicity

California has a highly diverse population and labor force, especially compared to the nation as a whole. For example, as described above, Hispanics comprised a much larger percentage of the California labor force than the nation's drop in 2011. Broken out by race and ethnicity, the California labor force was 77.4 percent white, 13.0 percent

Asian, 5.8 percent black, and 35.9 percent Hispanic. For the nation, it was 81.1 percent white, 11.7 percent black, 4.8 percent Asian, and 14.9 percent Hispanic.

Education

The California labor force is highly skilled. In 2011, 32.8 percent of California's labor force had a bachelor's degree or higher, slightly higher than the nation's 32.0 percent share. Conversely, 14.8 percent of the state's labor force had not received a high school diploma or GED in 2011, a rate that was 4.5 percentage points higher than the comparable national rate. In 2011, the unemployment rate for California workers without a high school diploma was 15.5 percent, 3.0 percentage points higher than workers who had graduated high school. In contrast, those possessing a bachelor's degree or higher had an unemployment rate of 5.8 percent. The employment opportunities of many adults are also limited by poor English skills. As mentioned above, the share of the state's foreign born population is more than double the nation's share. Nearly a third of Californians aged 5 years and older lived in a household where Spanish was the predominant language spoken at home. Nationally 12.5 percent of households primarily speak Spanish.

Implications/Issues

When examining California's available labor force, a number of implications related both to age, ethnicity, and educational attainment become apparent. While California will likely have a younger labor pool than the nation in the next decade, it will still have to deal with an aging labor force, and the challenges that it may produce. Prior to the recent recession, a major consideration was how to replace aging workers in the state. This was exacerbated by the high drop-out rate by high school students who lacked the education or training necessary to fill job vacancies resulting from the retirement of those older workers. One of the recession's effects has been higher labor force participation by older workers, seemingly at the expense of younger workers. This has made it even harder for those who drop out of high school. This phenomenon presents the state with two concerns: how can young workers, many who lack a college degree or GED, be introduced into the labor market and provided employment opportunities, and how does California replace the knowledge and expertise possessed by older workers once they leave the labor force.

Regarding ethnicity, California's diverse population presents both challenges and opportunities. A unique challenge presented by a diverse labor force is that foreign immigrants often lack English-language skills, which can initially limit their opportunities. Moreover, they sometimes have difficulties adapting to American culture, sometimes clinging to cultural mores from the countries from where they or their families immigrated. These may not mesh well with American cultural mores or may be misunderstood by those with other cultural backgrounds, and may affect the ability of some to succeed educationally or integrate into the workplace.

What steps does the state need to take to address these challenges? Two answers that are easy to suggest, but not always easy to implement are to: 1) offer more English as a

second language courses, and 2) develop and employ managers, supervisors, and trainers who are culturally attuned or sensitive to the diverse labor force.

Effects of Domestic and Foreign Migration on California's Labor Force

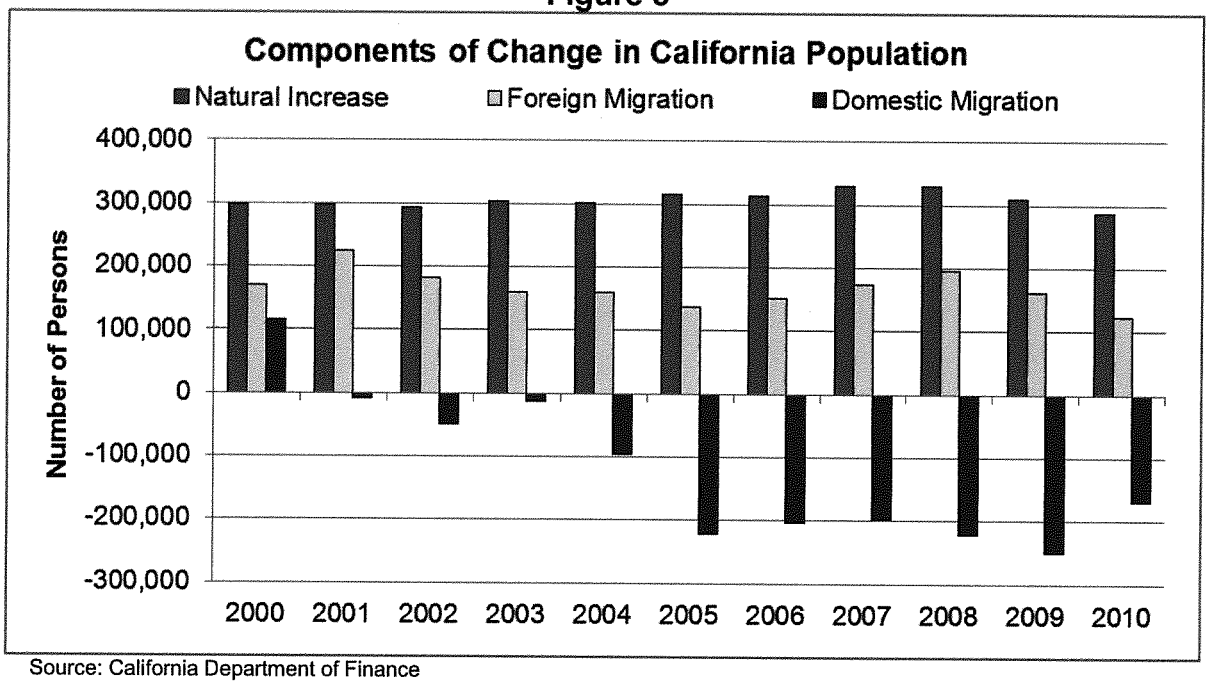
California's population is subject to change in three ways: natural increase, the net change of annual births and deaths in the state; domestic migration, the net change of people moving into and out of the state (from within the U.S.); and foreign migration, the total number of people entering the state from other countries or leaving to live and work in other countries.

Natural increase has contributed, on average, around 300,000 new residents to the state in each year from 2001 to 2010. In 2010 there were 287,600 more births in the state than there were deaths.

In each of the ten years from 2001 to 2010 more people left California for other states than moved into California. The net loss was more than 200,000 people in four out of five years between 2005 and 2009. In 2010 169,300 more people left the state than moved in.

As Figure 5 illustrates, population change in the state, contributed to by both natural increase and the number of people moving to California from other countries, has been relatively stable since 2000. In contrast, the net change contributed by people moving to and from California (within the U.S.) has varied considerably, from a gain of 115,500 in 2000 to a loss of 249,700 in 2009.

Figure 5

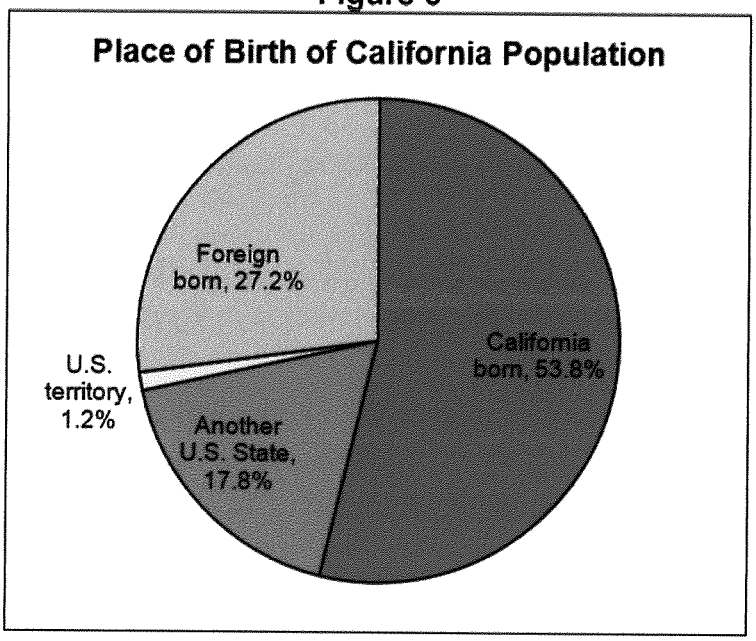


Source: California Department of Finance

As a result of annual migration almost half of the California population was born outside the state.

Migration is a flow concept. The cumulative effect of the large numbers of migrants is seen in data relating to the entire population – a stock concept. In 2010 17.8 percent of California residents had been born in another state and 27.2 percent had been born abroad (see Figure 6).

Figure 6



Source: U.S. Census Bureau, American Community Survey (ACS) 2010

California is a diverse state where net population change from migration varies from area to area.

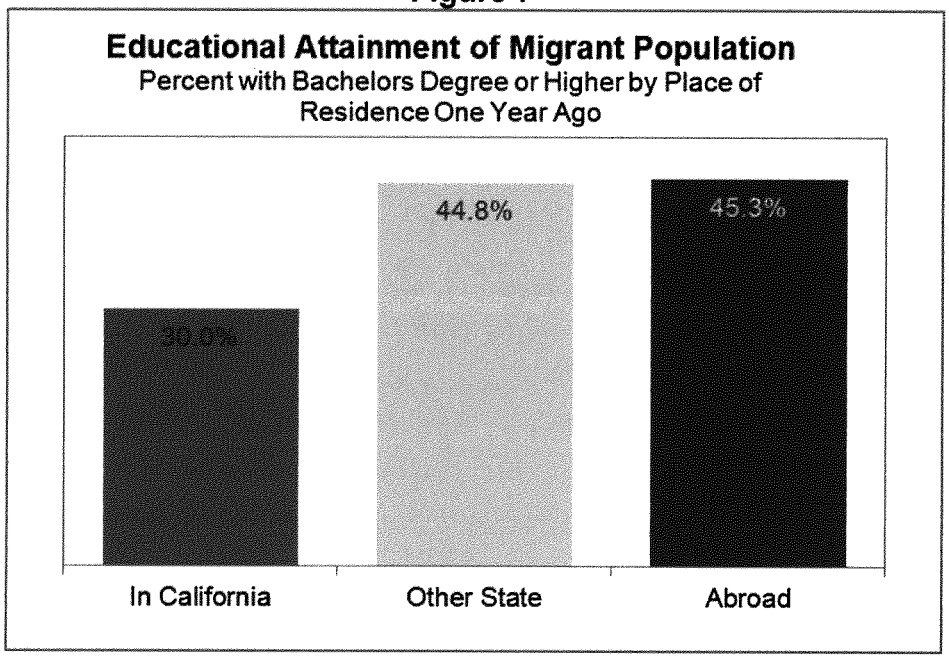
Overall, all but seven of California's 58 counties experienced population growth between 2009 and 2010. People moving into California from other countries contributed to population growth in 57 counties. This growth, combined with net natural increases, more than offset net domestic migration-related population losses in 40 counties. The largest losses to domestic migration were in coastal, highly urban counties where high housing costs are pushing workers to live elsewhere. Los Angeles (down 91,900) and Orange (down 16,000) experienced the large population losses due to domestic migration. In contrast, interior regions of California where housing costs are cheaper experienced growth from population movement between states. Riverside County experienced the largest net gain in population from domestic migration, an increase of 11,400 people between 2009 and 2010.

Demographic characteristics of persons moving to California affect labor markets and pose a special challenge for state training programs.

For education and training programs, it is important to determine the education, skills, and work experience brought by new California residents. Generally, new migrants to the state tend to be better educated than those who were California residents in the

previous year. As seen in Figure 7, over two-fifths of those who had migrated to California in the past year from other states and other countries possess at least a bachelor's degree, compared to about a third of those moving within the state. Additionally, the ability to speak English "very well" varies considerably by language group, as shown in Table 9. Persons speaking Spanish and those speaking Asian/Pacific Islander languages have higher proportions of their group with little or no English-language skills.

Figure 7



Source: U.S. Census Bureau, American Community Survey (ACS) 2010

Table 9
English Proficiency by Language Spoken at Home

Language Spoken	Percent of Population	Speak English less than "very well"
English	57.0%	--
Spanish	28.5%	47.6%
Indo-European languages	4.3%	32.6%
Asian and Pacific Island languages	9.4%	49.3%
Other languages	0.9%	32.0%

Source: U.S. Census Bureau, American Community Survey (ACS) 2010

In summary, the state's labor force is aging, but California remains a destination state for working-age migrants who help bolster the labor force. Many people moving to the state from other U.S. states and foreign countries are highly educated, but many Californians lack the ability to speak English proficiently. Integrating its large and diverse population will present California with both challenges and opportunities in the coming years.

California Short- and Long-Term Industry and Occupation Employment Projections

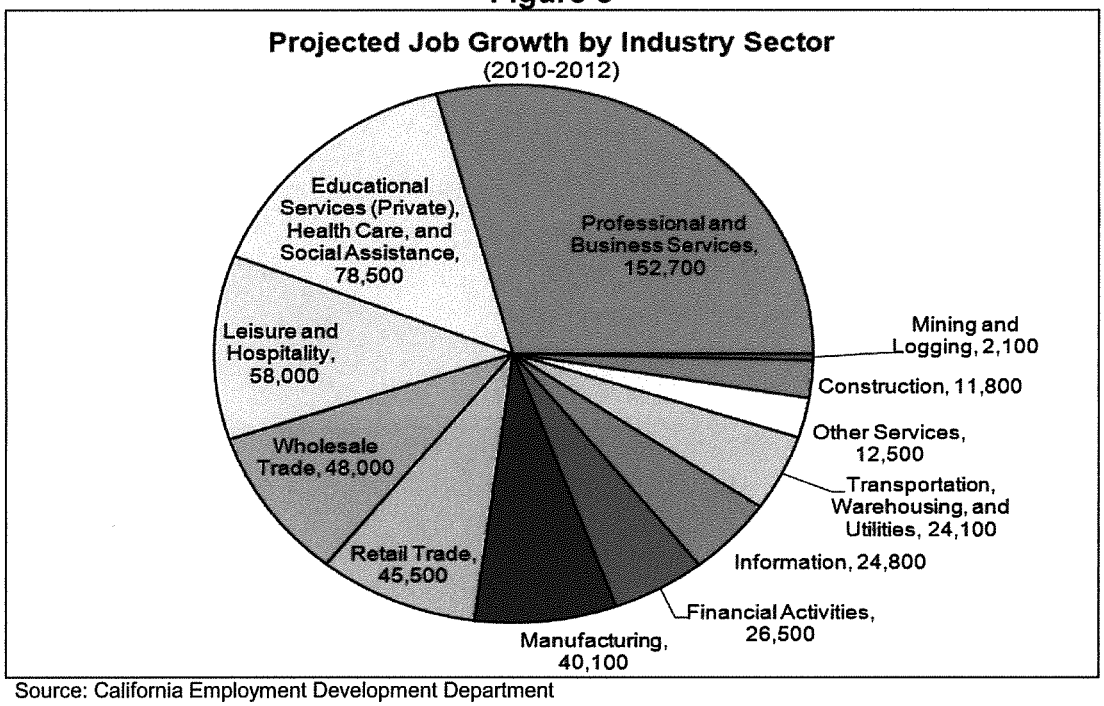
California Industry Employment Projections 2010-2012

The EDD's LMID prepares short-term (two-year) employment projections annually, as well as long-term (10-year) employment projections biennially, following the biennial production of the national employment projections. The LMID produced employment projections for 2010 third quarter-2012 third quarter and 2008-2018 in 2011 and 2010, respectively.

California's short-term industry employment projection, which includes self-employment, unpaid family workers, private household workers, farm employment, and nonfarm wage and salary employment, calls for total employment to reach 16,316,300, adding 523,600 jobs during the two-year projection period ending in September 2012. This is an increase of 3.3 percent over the period. Total nonfarm industries are projected to add 486,500 jobs (3.5 percent) over the same period.

The California short-term industry employment projections reflect the current economic climate, experiencing widespread growth as shown in Figure 8. The only major nonfarm industry sector projected to decline during the two-year projections period is government; all other sectors are projected to experience job growth, ranging from 2.0 percent to 7.5 percent growth during the period. Nearly 60 percent of all projected nonfarm job growth is in professional and business services, educational services (private), health care, and social assistance, and leisure and hospitality.

Figure 8



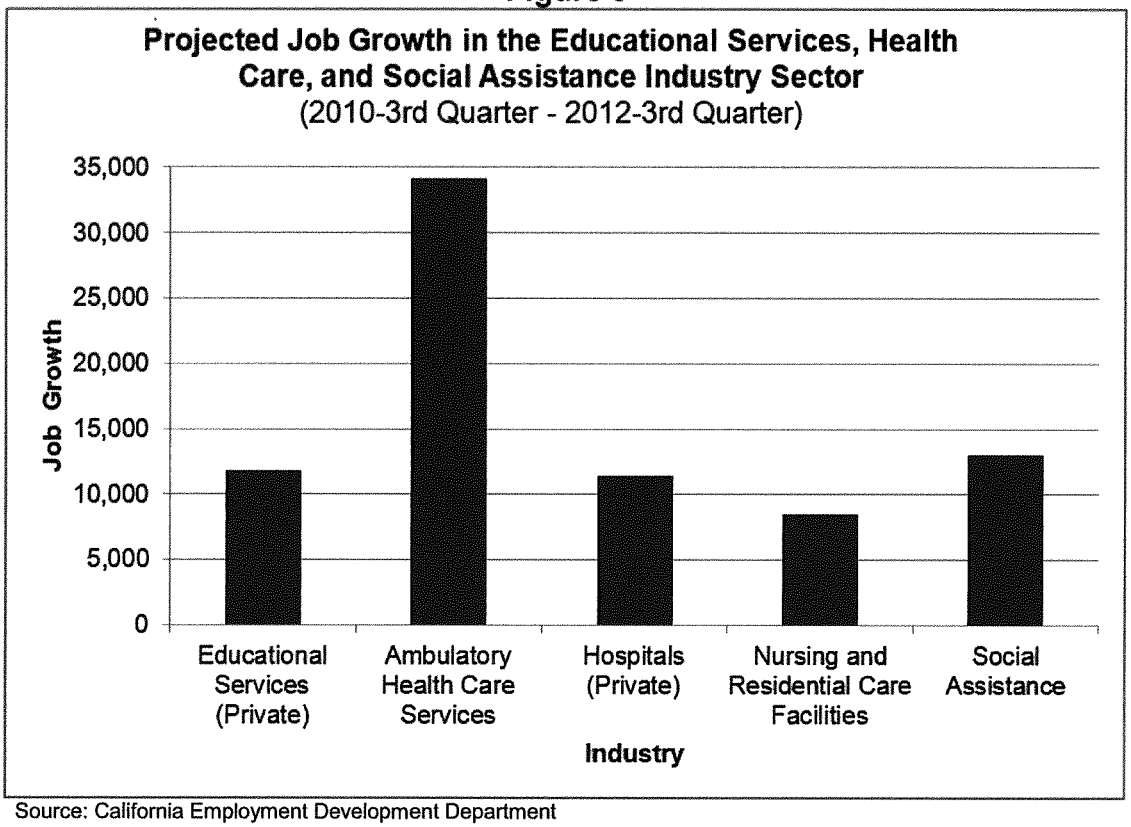
Source: California Employment Development Department

The largest number of new jobs is expected in the professional and business services industry sector, with a gain of more than 152,000 jobs. Of this gain, 31 percent will occur in the employment services industry, which includes employment placement agencies and temporary help services. Computer systems design, and management, scientific, and technical consulting services are also expected to experience strong growth within this industry sector.

The employment services industry, often viewed as a leading indicator for the California economy, experienced year-over job growth of 33,800 in February 2012. This is an indicator that economic activity is increasing. Employers may be hesitant to hire full-time permanent employees coming out of a recession, leading to this increase in temporary workers. As the economy recovers, growth in this industry may slow as employers transition to stable, full-time permanent workers to meet the growing demand for their products.

As Figure 9 illustrates, strong job growth is anticipated in the educational services, health care, and social assistance sector, with projected job gains across all industry subsectors totaling 78,500. Due to an aging population and a continued demand for health services, job growth is projected to continue at an annual rate of 2.2 percent. Unlike the state and local education sectors, which are forecasted to shed jobs, the private education services industry is expected to gain 11,700 jobs.

Figure 9



Source: California Employment Development Department

Growth in the leisure and hospitality and the retail trade sectors have historically trended in the same general direction. Leisure and hospitality is expected to add 58,000 jobs. Full-service restaurants and limited-service eating places account for more than 62 percent of the projected job growth in this sector. As the economy recovers, we anticipate that consumer demand for goods and services will increase.

Retail trade is expected to grow by 45,500 jobs. Half of the projected job growth in retail trade will occur in three industries: department stores, food and beverage stores, and clothing and clothing accessories stores.

Wholesale trade is projected to grow by 48,000 jobs, including a 26,900 increase in merchant wholesalers of durable goods. Durable goods are new or used items that usually have a normal life expectancy of three years or more. After a loss of 92,600 jobs between December 2007 and January 2010, wholesale trade employment began to recover by gaining an average of 1,200 jobs per month during the 25-month period from January 2010 to February 2012. An increase in manufacturing employment and a pent-up demand for consumer goods are strong contributing factors to the projected job gains.

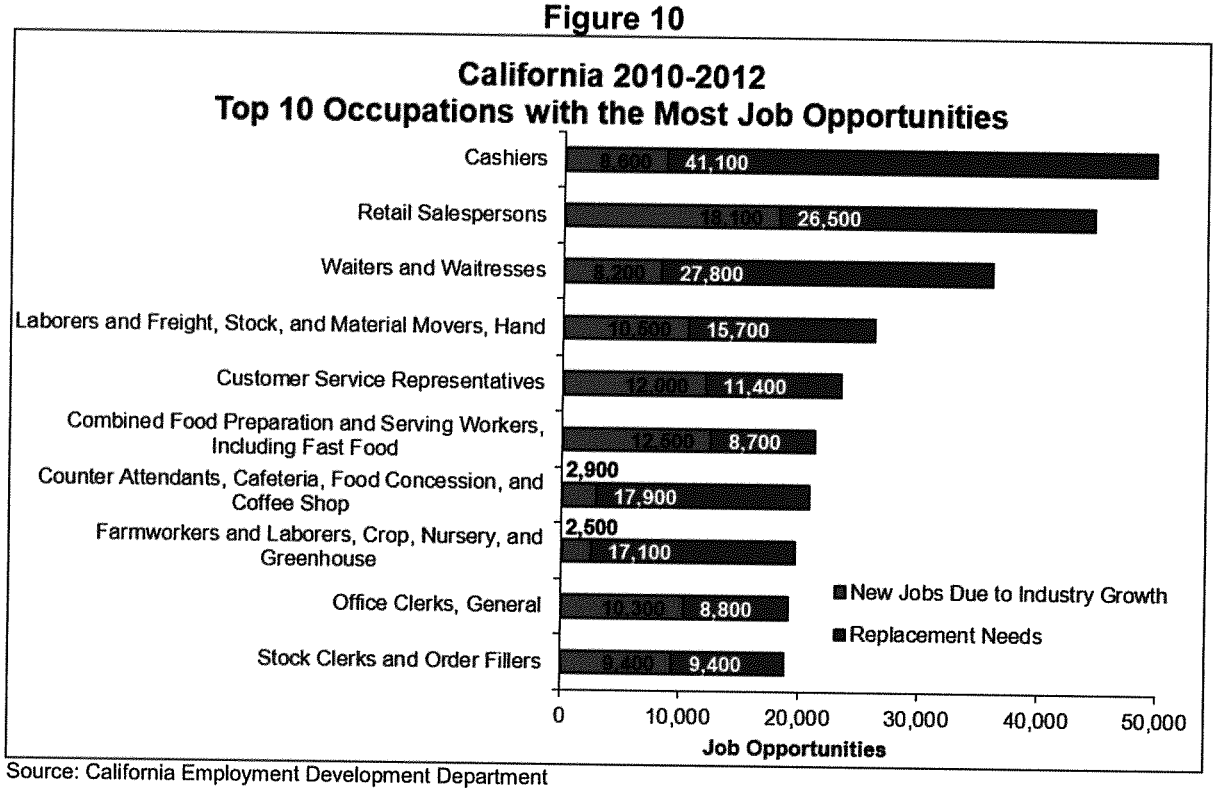
California Occupational Employment Projections 2010-2012

For the 2010-2012 projections period, California is expected to generate:

- 538,800 new jobs from industry growth (does not factor in job declines)
- 727,900 jobs due to replacements needs
- A combined total of 1,266,700 job openings

Modest job growth is projected and about 7 of every 10 published occupations are expected to grow during the outlook period. The largest number of new jobs is expected in three occupational groups. Office and administrative support (79,700), sales and related (60,200), and food preparation and serving related (45,000) occupations are expected to generate 35 percent of the new jobs during the projections period. Of the 667 detailed occupations for which we provide projections, the top 50 with the most job openings will generate nearly 43 percent of all job openings in California. More than half of these occupations will have more openings due to replacement needs as workers continue to move in and out of these occupations. Replacement needs reflect the job openings that occur when workers leave jobs and change occupations and do not factor in job churn, workers who change jobs and remain in the same occupation. Figure 10 illustrates the top 10 occupations with the most job openings.

Figure 10



Source: California Employment Development Department

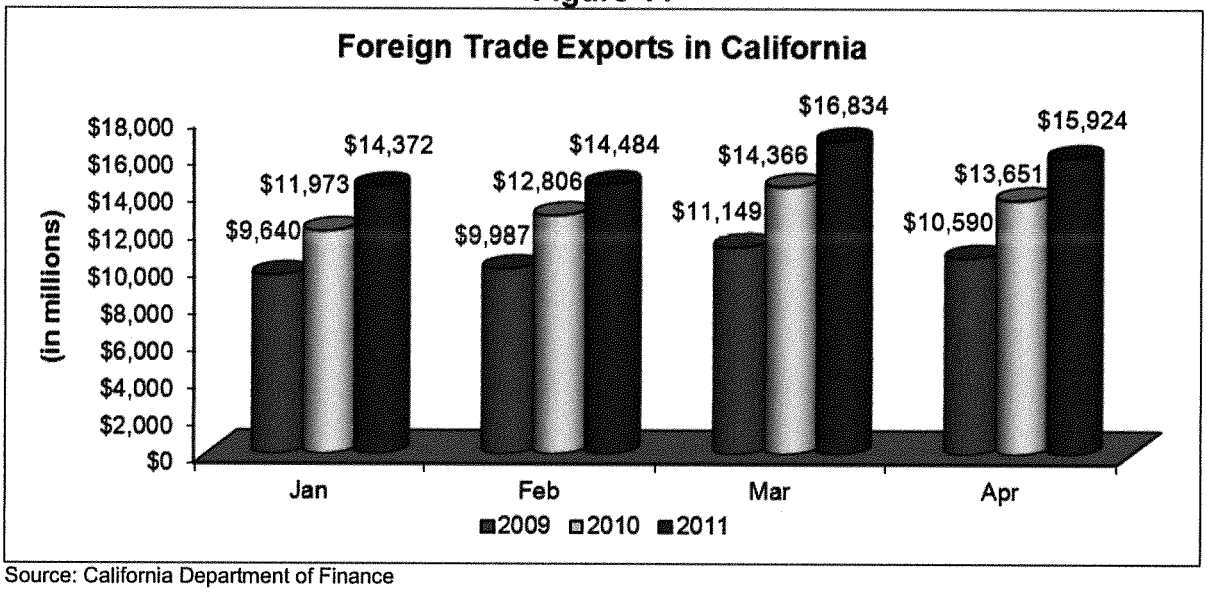
The occupational groups with the fastest growth rates are computer and mathematical (7.0 percent); arts, design, entertainment, sports, and media (5.4 percent); and healthcare support (4.6 percent). The 50 fastest-growing occupations anticipate a growth rate of 5.9 percent or higher for the projections period.

California Industry Employment Projections 2008-2018

By the end of the 2008-2018 projection period, total nonfarm employment in California is projected to grow to nearly 16.5 million jobs. This exceeds peak job level of just over 15.2 million jobs reached before the Great Recession by over 1.2 million jobs. From June 2007 to June 2009, 1.1 million jobs were lost (not seasonally adjusted). Over the 2008-to-2018 projections period, nonfarm employment is expected to rebound by 1,511,100 jobs as the economy recovers from these recessionary job losses. More than 50 percent of all projected nonfarm job growth is in education services (private), health care, and social assistance, and professional and business services. The largest number of new jobs is expected in education services, health care, and social assistance, with a gain of more than 421,000 jobs.

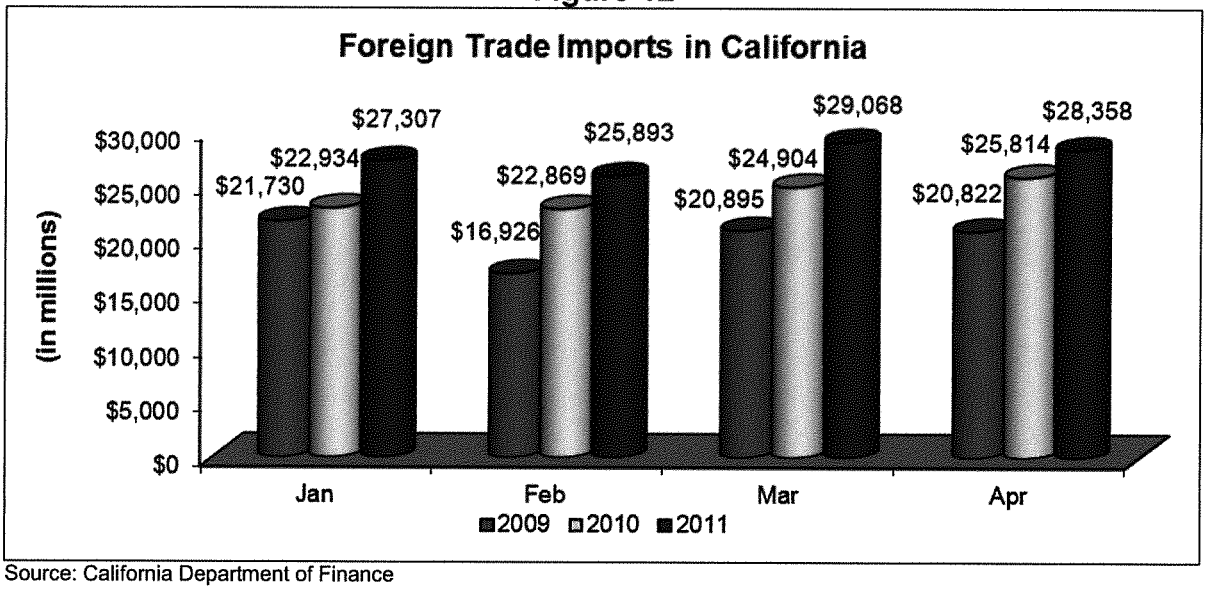
Factors fueling the economic recovery in California include the state's population growth and a rise in foreign imports and exports (Figure 11 and Figure 12). The state's population increased by more than 3.3 million from 2000 to 2010 and the California Department of Finance projects the population will increase by another 4.3 million from 2010 to 2020. A steady increase in foreign imports and exports has strengthened the wholesale, retail, and transportation industry sectors.

Figure 11



Source: California Department of Finance

Figure 12



Source: California Department of Finance

California Occupational Employment Projections 2008-2018

California's occupational employment is expected to add more than 1.6 million jobs to reach about 18.6 million by 2018. The three occupational groups with the most forecasted job openings are expected to generate 36 percent of total job openings. Office and administrative support occupations, sales and related occupations, and food preparation and serving related occupations will produce almost 2.1 million total job openings with replacement needs outpacing new job growth.

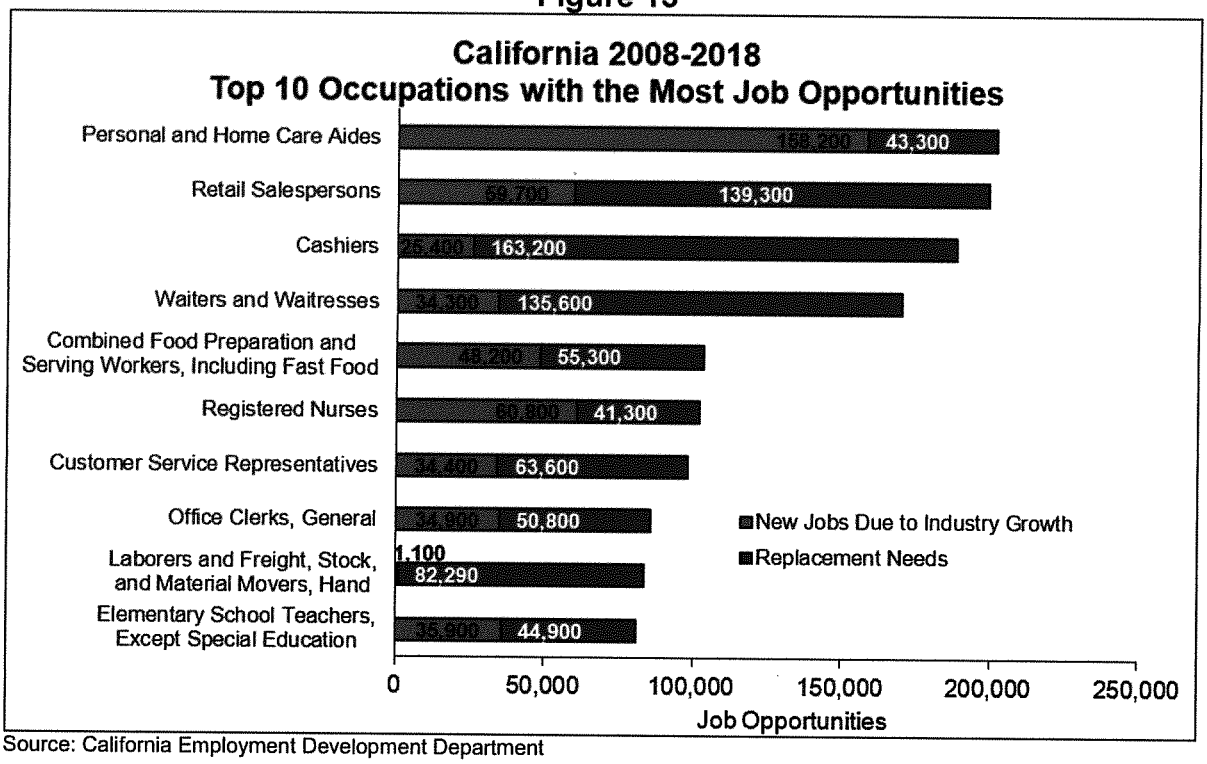
For the 2008-2018 projections period, California is anticipated to generate:

- Industry expansion resulting in a net growth of more than 1.6 million new jobs
- About 3.9 million jobs from replacement needs
- A combined total of approximately 5.6 million job openings

Occupations with the Most Job Openings

The retirement of baby boomers and workers shifting to new occupations are expected to generate many replacement needs. The top 50 occupations with the most job openings are expected to account for nearly 3 million total job openings. Forty of the top 50 occupations with the largest number of job openings have more openings due to replacement needs than anticipated job growth over the projections period. Figure 13 illustrates the top 10 occupations with the most job openings.

Figure 13



Source: California Employment Development Department

Occupational Wages and Job Requirements

Several occupations are expected to generate more than 40,000 total job openings and pay median hourly wages of more than $23 per hour. These include registered nurses, general and operations managers, first-line supervisors/managers of office and administrative support workers, executive secretaries and executive administrative assistants, accountants and auditors, and sales representatives, wholesale and manufacturing, except technical and scientific products.

Some of the occupations with the most job openings that pay median annual wages more than $35,000 with education and training requirements ranging from a high school diploma or equivalent to a bachelor's degree are as follows:

- $39,577 for bookkeeping, accounting, and auditing clerks that require a high school diploma or equivalent, plus 1-5 years of work experience in a related occupation
- $51,411 for licensed practical and licensed vocational nurses, requiring a postsecondary non-degree award
- $87,377 for registered nurses, requiring an associate's degree
- $103,249 for software developers, applications, requiring a bachelor's degree

Fastest Growing Occupations

During the 2008-2018 projections period, the top 50 fastest growing occupations are all expected to grow at a rate of 20.5 percent or more, compared to the overall 9.7 percent job growth rate projected for the state. Occupations on this list are concentrated in health care, mirroring the continued demand in health care industry employment. This demand is largely due to a growing and aging population. The ten occupations with the fastest growth and high wages[6] include respiratory therapists, dental hygienists, and occupational therapists.

Other health care related occupations on the list include:

- Physical therapist aides requiring a high school diploma or equivalent with moderate-term on-the-job training and earning $26,650 per year
- Dental assistants requiring a postsecondary non-degree award and paying median annual wages of $34,168
- Dental hygienists, registered nurses, and diagnostic medical sonographers requiring an associate's degree and paying median annual wages of $95,903, $87,377 and $79,602, respectively
- Physician assistants requiring a master's degree and earning $93,910 per year

The U.S. Bureau of Labor Statistics (BLS) facilitates occupational analysis by classifying occupations in three ways:

- By the Standard Occupational Classification (SOC) code, which groups occupations with other similar occupations
- By the North American Industry Classification System(NAICS) code, – the industry code points to the industry or industries that employ workers in the occupation; and

[6] For the purposes of this analysis, the gauge for "high wage" includes occupations that require a postsecondary degree or postsecondary non-degree award. While education level does not guarantee a high wage, it is a measure that typically represents a median annual and hourly wage commonly associated with a high wage occupation. However, it should be noted that median annual and hourly wages may vary due to an individual's skill level, years of experience in the field, household composition, and the geographic region the position is located.

- By the education and training typically required for each occupation – the BLS recently introduced new education and training levels that assign occupations a designation within three categories: typical entry-level education, related work experience, and typical on-the-job training

Table 10, *Comparison of Growing Occupations by Entry Level Education in California 2008-2018,* provides a detailed listing of the occupations projected to experience the highest absolute growth and fastest growth, based on the new entry-level education requirements. The following is a more detailed description of the new entry-level education assignments, which prepare individuals to enter the labor market.

Education Requirements for Entry-Level Occupations

This category best describes the level of education that most workers typically need to enter the occupation. Occupations are assigned one of the following eight education levels:

- ***Doctoral or professional degree*** - completion of a professional or doctoral degree (Ph.D.) usually requires at least 3 years of full-time academic study beyond a bachelor's degree. Examples of occupations for which a professional degree is the typical form of entry-level education include lawyers, pharmacists, family and general practitioners, and pediatricians, general.
- ***Master's degree*** - completion of this degree usually requires 1 or 2 years of full-time academic study beyond a bachelor's degree. Examples of occupations in this category include physician assistants, healthcare social workers, and occupational therapists.
- ***Bachelor's degree*** - completion of this degree generally requires at least 4 years, but not more than 5 years, of full-time academic study beyond high school. Examples of occupations in this category include accountants and auditors, software developers, applications, and information security analysts, web developers, and computer network architects.
- ***Associate's degree*** - completion of this degree usually requires at least 2 years but not more than 4 years of full-time academic study beyond high school. Examples of occupations in this category include registered nurses, respiratory therapists, and dental hygienists.
- ***Postsecondary non-degree award*** - these programs lead to a certificate or other award, but not a degree. The certificate is awarded by the educational institution and is the result of completing formal postsecondary schooling. Certification, which is issued by a professional organization or certifying body, is not included here. Some postsecondary non-degree award programs last only a few weeks, while others may last 1 to 2 years. Examples of occupations in this category include emergency medical technicians and paramedics, dental assistants, and licensed practical and licensed vocational nurses.
- ***Some college, no degree*** - this category signifies the achievement of a high school diploma or equivalent plus the completion of one or more postsecondary courses that did not result in a degree or award. Examples of occupations in this

category are actors, computer support specialists, and private detectives and investigators.

- ***High school diploma or equivalent*** - this category signifies the completion of high school or an equivalent program resulting in the award of a high school diploma or an equivalent, such as the General Educational Development (GED) credential. Examples of occupations in this category include pharmacy technicians, medical assistants, and customer service representatives.
- ***Less than high school*** - this category signifies the completion of any level of primary or secondary education that did not result in the award of a high school diploma or equivalent. Examples of occupations in this category include personal and home care aides, home health aides, and combined food preparation and serving workers, including fast food.

Table 10
Comparison of Growing Occupations by Entry Level Education in California 2008-2018

Fastest Growing Occupations* (Percentage Growth)	Entry Level Education	Occupations with the Largest Absolute Job Growth (Adding the Most Jobs)
Medical Scientists, Except Epidemiologists (46.9% or 12,300 jobs) Veterinarians (33.9% or 1,900 jobs) Physical Therapists (28.8% or 4,400 jobs) Pediatricians, General (22.2% or 1,200 jobs) Family and General Practitioners (21.4% or 2,200 jobs)	**Doctoral or Professional Degree**	Lawyers (23,600 jobs) Medical Scientists, Except Epidemiologists (17,600 jobs) Pharmacists (8,900 jobs) Clinical, Counseling, and School Psychologists (7,900 jobs) Physical Therapists (6,300 jobs)
Physician Assistants (42.0% or 3,400 jobs) Occupational Therapists (25.9% or 2,100 jobs) Healthcare Social Workers (22.9% or 2,500 jobs) Instructional Coordinators (22.4% or 4,100 jobs) Urban and Regional Planners (19.2% or 1,500 jobs)	**Master's Degree**	Educational, Guidance, School, and Vocational Counselors (12,000 jobs) Education Administrators, Elementary and Secondary School (9,500 jobs) Instructional Coordinators (8,100 jobs) Healthcare Social Workers (5,200 jobs) Physician Assistants (4,900 jobs)
Information Security Analysts, Web Developers, and Computer Network Architects (50.3% or 17,600 jobs) Software Developers, Applications (31.1% or 25,200 jobs) Compliance Officers, Except Agriculture, Construction, Health and Safety, and Transportation (27.9% or 8,900 jobs) Software Developers, Systems Software (25.8% or 18,900 jobs) Market Research Analysts (25.2% or 9,300 jobs)	**Bachelor's Degree**	Elementary School Teachers, Except Special Education (80,800 jobs) Secondary School Teachers, Except Special and Vocational Education (52,900 jobs) Accountants and Auditors (50,700 jobs) Management Analysts (32,000 jobs) Software Developers, Applications (32,000 jobs)
Veterinary Technologists and Technicians (35.1% or 3,300 jobs) Respiratory Therapists (26.6% or 3,300 jobs) Dental Hygienists (25.9%or 4,800 jobs) Registered Nurses (25.7% or 60,800 jobs) Diagnostic Medical Sonographers (21.6% or 1,100 jobs)	**Associate's Degree**	Registered Nurses (102,100 jobs) General and Operations Managers (72,700 jobs) Preschool Teachers, Except Special Education (17,700 jobs) Construction Managers (9,900 jobs) Paralegals and Legal Assistants (8,700 jobs)
Emergency Medical Technicians and Paramedics (30.8% or 4,400 jobs) Surgical Technologists (29.2% or 2,600 jobs) Dental Assistants (25.7% or 11,900 jobs) Medical Records and Health Information Technicians (21.9% or 3,300 jobs) Licensed Practical and Licensed Vocational Nurses (21.5% or 13,600 jobs)	**Postsecondary Non-degree Award**	Nursing Aides, Orderlies, and Attendants (33,600 jobs) Licensed Practical and Licensed Vocational Nurses (33,400 jobs) Dental Assistants (20,600 jobs) Firefighters (16,300 jobs) Hairdressers, Hairstylists, and Cosmetologists (11,800 jobs)
Private Detectives and Investigators (15.7% or 800 jobs) Computer Support Specialists (11.5% or 7,400 jobs) Actors (8.1% or 1,000 jobs)	**Some College, No Degree**	Computer Support Specialists (25,200 jobs) Actors (3,900 jobs) Private Detectives and Investigators (1,900 jobs)
Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders (39.7% or 2,900 jobs) Physical Therapist Aides (37.3% or 2,200 jobs) Medical Assistants (30.6% or 23,300 jobs) Pharmacy Technicians (28.4% or 7,900 jobs) Fitness Trainers and Aerobics Instructors (27.4% or 8,700 jobs)	**High school Diploma or Equivalent**	Customer Service Representatives (98,000 jobs) Office Clerks, General (85,700 jobs) First-Line Supervisors/Managers of Office and Administrative Support Workers (57,700 jobs) Teacher Assistants (55,800 jobs) Executive Secretaries and Administrative Assistants (51,400 jobs)
Personal and Home Care Aides (45.7% or 158,200 jobs) Home Health Aides (43.6% or 23,700 jobs) Refuse and Recyclable Material Collectors (19.2% or 3,500 jobs) Dishwashers (19.0% or 12,800 jobs) Combined Food Preparation and Serving Workers, Including Fast Food (18.5% or 48,200 jobs)	**Less than high school**	Personal and Home Care Aides (201,500 jobs) Retail Salespersons (199,000 jobs) Cashiers (188,600 jobs) Waiters and Waitresses (169,900 jobs) Combined Food Preparation and Serving Workers, Including Fast Food (103,500 jobs)

Source: California Employment Development Department

*Excludes "All-Other" occupations and those with employment less than 5,000 in 2008.

Table 11 displays high-demand occupations with the corresponding entry-level education, work experience, on-the-job training requirements, and median annual wages:

Table 11

High-Demand Occupations Requiring a Bachelor's Degree				
Work Experience	On-the-Job Training		Total Job Openings 2008-2018	Median Annual Wage
None	None	Accountants and Auditors	80,700	$69,357
1-5 years	None	Management Analysts	32,000	$84,389
None	None	Software Developers, Applications	32,000	$103,249
High-Demand Occupations Requiring an Associate's Degree				
Work Experience	On-the-Job Training		Total Job Openings 2008-2018	Median Annual Wage
None	None	Registered Nurses	102,100	$87,377
1-5 years	None	General and Operations Managers	73,700	$111,919
None	None	Preschool Teachers, Except Special Education	17,700	$29,889
High-Demand Occupations Requiring a Postsecondary Non-degree Award				
Work Experience	On-the-Job Training		Total Job Openings 2008-2018	Median Annual Wage
None	None	Nursing Aides, Orderlies, and Attendants	33,600	$27,032
None	None	Licensed Practical and Licensed Vocational Nurses	23,600	$51,411
None	None	Dental Assistants	20,600	$34,168

Source: California Employment Development Department

Work Experience Requirement

This education and training requirement describes work experience employers commonly consider necessary for entry into the occupation or commonly accept as a substitute for formal training. The categories are as follows:

- ***More than five years*** - this is assigned to occupations if more than five years of work experience in a related occupation is typically needed for entry; examples include financial managers, chief executives, and computer and information systems manager
- ***One to five years*** - to enter occupations in this category, workers typically need one to five years of work experience in a related occupation; examples include general and operations managers and first line supervisors of office and administrative support workers
- ***Less than one year*** - examples of occupations that typically need less than one year of work experience in a related occupation include restaurant cooks and industrial truck and tractor operators
- ***None*** - no work experience in a related occupation is typically needed

On-the-Job Training Requirement

This category encompasses any additional training or preparation that is typically needed to attain competency in the skills needed in an occupation, after employment in that occupation commences. Training is occupation-specific rather than job-specific; skills learned can be transferred to another job in the same occupation. Occupations are assigned one of the following six training categories:

- ***Internship/residency*** - An internship or residency provides a course of training that involves preparation in a field such as medicine or teaching, generally under supervision in a professional setting, such as a hospital or classroom. This type of training may occur before one is employed. Completion of an internship or residency program is commonly required for state licensure or certification in fields including medicine, counseling, architecture, and teaching. This category does not include internships that are suggested for advancement. Examples of occupations in the internship/residency category include physicians and surgeons and marriage and family therapists.
- ***Apprenticeship*** - An apprenticeship is a formal relationship between a worker and sponsor that consists of a combination of on-the-job training and related occupation-specific technical instruction in which the worker learns the practical and theoretical aspects of an occupation. Apprenticeship programs are sponsored by individual employers, joint employer-labor groups, and employer associations. The typical apprenticeship program provides at least 144 hours of occupation-specific technical instruction and 2,000 hours of on-the-job training per year over a three to five year period. Examples of occupations in the apprenticeship category include electricians and carpenters.
- ***Long-term on-the-job training*** - More than 12 months of on-the-job training or, alternatively, combined work experience and formal classroom instruction, are needed for workers to develop the skills to attain competency. Training is occupation specific rather than job specific; therefore, skills learned can be transferred to another job in the same occupation. This on-the-job training category also includes employer-sponsored training programs. Such programs include those offered by fire and police academies and schools for air traffic controllers and flight attendants. In other occupations, such as nuclear power reactor operators, trainees take formal courses, often provided at the jobsite, to prepare for the required licensing exams. This category excludes apprenticeships. Examples of occupations in the long-term, on-the-job training category include automotive service technicians and mechanics and firefighters.
- ***Moderate-term on-the-job training*** - Skills needed for a worker to attain competency in an occupation that can be acquired during 1 to 12 months of combined on-the-job experience and informal training. Training is occupation specific rather than job specific; therefore, skills learned can be transferred to another job in the same occupation. This on-the-job training category also includes employer-sponsored training programs. Examples of occupations in the moderate-term category include bookkeeping, accounting, and auditing clerks and restaurant cooks.
- ***Short-term on-the-job training*** - Skills needed for a worker to attain competency in an occupation that can be acquired during 1 month or less of on-the-job

experience and informal training. Training is occupation-specific rather than job specific; therefore, skills learned can be transferred to another job in the same occupation. This on-the-job training category also includes employer sponsored training programs. Examples of occupations in the short-term category include personal care aides, retail salespersons, and cashiers.

- ***None*** - There is no additional occupation-specific training or preparation typically required to attain competency in the occupation.

Skills Analysis for High-Demand Occupations in Growth Industries

The analysis above identifies top occupations in the projected growth industries of California. This section examines the typical skill requirements for these occupations and highlights the shared skills and work activities required. This information allows jobseekers to identify the skills, work activities, and education training necessary to attain a high-demand occupation. The section also provides jobseekers with information needed to identify career pathways, through which an individual may move from an entry-level occupation to a higher-level occupation paying higher wages. At the end of this section is a summary of common skill requirements across the critical growth industries. Work activities, as defined by the Occupational Information Network (O*NET), summarize the kinds of tasks that may be performed across multiple occupations. The skills and work activities identified for each industry are from the O*NET skills and work activities database. More extensive definitions of each of the skills and work activities are available from that source. The level and importance of skill as well as the detail of work activities may vary widely across the presented occupations.

Growth Industries with High-Demand Occupations

The interdependence of California's industries and occupations is fundamental to the economy. For a state as large and diverse as California, each industry and occupation has an inherent value in the state's labor market. However, we expect these industries, and the occupations they are comprised of, to grow at higher rates due to long-term structural changes in the overall economy. These growth industries are in the health care and social assistance; professional, scientific, and technical services; and wholesale trade sectors. These growth industries can be unique to a geographic region, based upon the composition of local businesses, the nature and talents of the local workforce, and the interaction between business, education, and workforce preparation. Industries within these three sectors will typically include high-demand occupations that may require a postsecondary degree or non-degree award.

Health Care and Social Assistance

Health care is the ultimate "population-serving" industry, reflecting the demands of a growing and aging population, both in California and across the nation. Trained professionals with varying levels of education provide the services within this industry. According to a recent report by the California Office of Statewide Health Planning and Development and California Workforce Investment Board Health Workforce Development Council Career Pathway Sub-Committee, "there is an urgent and important need for California to expand its health workforce capacity to achieve the goals of healthcare reform and meet the health needs of its growing, increasingly

diverse and aging population."[7] California's top 10 projected occupations for the health care and social assistance industry are registered nurses; personal care aides; home health aides; medical assistants; nursing aides, orderlies, and attendants; medical secretaries; licensed practical and licensed vocational nurses; dental assistants; first-line supervisors of office and administrative support workers; and preschool teachers, except special education. The education and training levels for these top 10 occupations range from less than high school to an associate's degree.

In California, employment of the top 10 high-growth occupations in health care and social assistance industry is expected to increase by 199,900 workers between 2008 and 2018. The occupations with the highest projected demand in health care and social assistance careers will be: registered nurses; personal care aides; home health aides; medical assistants; and nursing aides, orderlies, and attendants. Employment in these top five occupations is projected to increase by 146,000 workers. Education and training requirements vary among the health care occupations. At a minimum, Registered nurses require an associate's degree, whereas personal care aides require less than a high school diploma with short-term on-the-job training. Regardless of the education and training level, all of these identified occupations share essential skill requirements:

- Active Listening
- Monitoring
- Speaking
- Coordination
- Active Learning
- Critical Thinking
- Reading Comprehension
- Social Perceptiveness
- Service Orientation
- Writing

The work activities for the top five largest-growth occupations in the health care and social assistance industry are listed in Table 12. Some of these occupations share common work activities, including assisting and caring for others; monitoring processes, materials, or surroundings; and identifying objects, actions, and events. However, the complexity of skills related to these activities often varies widely among the various occupations.

[7] *Office of Statewide Health Planning and Development/California Workforce Investment Board Health Workforce Development Council Career Pathway Sub-Committee Final Report September 2011* (December 7, 2011) http://www.cwib.ca.gov/res/docs/special_committees/hwdc/other_events/Career%20Pathway%20SubCmte%20ReportFinal120711.pdf March 28, 2012 accessed.

Table 12

Top Five Growth Occupations in Health Care and Social Assistance	
Occupation Title	**Work Activities**
Registered Nurses	• Assisting and Caring for Others • Monitoring Processes, Materials, or Surroundings • Identifying Objects, Actions, and Events
Personal Care Aides	• Identifying Objects, Actions, and Events • Monitoring Processes, Materials, or Surroundings • Assisting and Caring for Others
Home Health Aides	• Monitoring Processes, Materials, or Surroundings • Establishing and Maintaining Interpersonal Relationships • Identifying Objects, Actions, and Events
Medical Assistants	• Assisting and Caring for Others • Monitoring Processes, Materials, or Surroundings • Identifying Objects, Actions, and Events
Nursing Aides, Orderlies, and Attendants	• Assisting and Caring for Others • Monitoring Processes, Materials, or Surroundings • Identifying Objects, Actions, and Events

Source: California Employment Development Department

Professional, Scientific, and Technical Services

The professional, scientific, and technical services industry is one of three sectors in the professional and business services super sector. It is important to the California economy due to its wide variety of establishments providing complex services in an increasingly service-based economy, such as preparing client taxes or developing computer systems. The top 10 occupations in California's professional, scientific, and technical services industry are software developers, applications; accountants and auditors; software developers, systems software; management analysts; executive secretaries and administrative assistants; information security analysts, web developers, and computer network architects; office clerks, general; computer support specialists; computer systems analysts; and medical scientists, except epidemiologists. Many of the occupations in this industry require a high degree of expertise and training, often with a bachelor's degree or higher.

Employment in the top 10 projected high-growth occupations in the professional, scientific, and technical services industry is expected to increase by 130,000 workers between 2008 and 2018. The occupations with the highest projected demand in the professional, scientific, and technical services careers will be for computer software engineers, applications; accountants and auditors; computer software engineers, systems software; management analysts; and executive secretaries and administrative assistants. These top five occupations are projected to increase by 79,500 workers. The level of education is higher for this industry, with many of the high-growth occupations requiring a bachelor's degree or higher. However, all of these occupations share essential skill requirements:

- Critical Thinking
- Systems Analysis
- Writing

- Active Listening
- Speaking
- Active Learning
- Critical Thinking
- Reading Comprehension
- Monitoring
- Systems Evaluation
- Judgment and Decision Making

The work activities for the top five largest-growth occupations in the professional, scientific, and technical services industry in Table 13 show some common work activities across occupations, such as organizing, planning, and prioritizing work; establishing and maintaining interpersonal relationships; and interacting with computers.

Table 13

Top Five Growth Occupations in Professional, Scientific, and Technical Services	
Occupation Title	**Work Activities**
Software Developers, Applications	• Thinking Creatively • Interacting With Computers • Updating and Using Relevant Knowledge
Accountants and Auditors	• Organizing, Planning, and Prioritizing Work • Processing Information • Establishing and Maintaining Interpersonal Relationships
Software Developers, Systems Software	• Updating and Using Relevant Knowledge • Interacting With Computers • Thinking Creatively
Management Analysts	• Establishing and Maintaining Interpersonal Relationships • Organizing, Planning, and Prioritizing Work • Processing Information
Executive Secretaries and Executive Administrative Assistants	• Establishing and Maintaining Interpersonal Relationships • Organizing, Planning, and Prioritizing Work • Communication with Supervisors, Peers, or Subordinates

Source: California Employment Development Department

Wholesale Trade

The wholesale trade sector is vital to California's economy. It is composed of two key industries: merchant wholesalers of durable goods and merchant wholesalers of nondurable goods. Durable goods are new or used items that usually have a normal life expectancy of three years or more and nondurable goods generally have a normal life expectancy of less than three years. Wholesale trade firms act as intermediaries between the manufacturer and the final customer by simplifying the flow of products, payments, and information. In addition to storing, selling, and moving merchandise, wholesale trade firms may provide other services that include financing of purchases, customer service and technical support, or installing and repairing equipment. California's top 10 projected occupations for the wholesale trade industry are sales representatives, wholesale and manufacturing, except technical and scientific products; customer service representatives; sales representatives, wholesale and manufacturing, technical and scientific products; stock clerks and order fillers; light truck or delivery

services drivers; office clerks, general; bookkeeping, accounting, and auditing clerks; truck drivers, heavy and tractor-trailer; sales managers; and laborers and freight, stock, and material movers, hand. Many of these occupations only require a high school diploma or equivalent; however, sales managers require a bachelor's degree. Most entry-level positions receive on-the-job training from the employer and do not require previous work experience.

Employment in the top 10 high-growth occupations in the wholesale trade industry is expected to increase by 54,200 workers between 2008 and 2018. The occupations with the highest projected demand in the wholesale trade industry will be for sales representatives, wholesale and manufacturing, except technical and scientific products; customer service representatives; sales representatives, wholesale and manufacturing, technical and scientific products; stock clerks and order fillers; light truck or delivery services drivers. These top five occupations are projected to increase by 38,700 workers. Education and training requirements vary among the wholesale trade occupations. Many of the high-growth occupations in this industry require a high school diploma or equivalent with moderate-term on-the-job training. Regardless of the education and training level, all of these identified occupations share essential skill requirements:

- Critical Thinking
- Persuasion
- Monitoring
- Reading Comprehension
- Writing
- Active Listening
- Speaking
- Social Perceptiveness
- Time Management
- Coordination

The work activities for the top five largest-growth occupations in the wholesale trade industry show some similarities; however, the industry has a wide diversity of occupations. Table 14 shows some common work activities across occupations, such as establishing and maintaining interpersonal relationships and performing general physical activities.

Table 14

Top Five Growth Occupations in Wholesale Trade	
Occupation Title	**Work Activities**
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	• Establishing and Maintaining Interpersonal Relationships • Selling or Influencing Others • Getting Information
Customer Service Representatives	• Updating and Using Relevant Knowledge • Communicating with Supervisors, Peers, or Subordinates • Processing Information
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	• Communicating with Persons Outside Organization • Selling or Influencing Others • Establishing and Maintaining Interpersonal Relationships
Stock Clerks and Order Fillers	• Handling and Moving Objects • Performing General Physical Activities • Establishing and Maintaining Interpersonal Relationships
Light Truck or Delivery Services Drivers	• Handling and Moving Objects • Performing General Physical Activities • Identifying Objects, Actions, and Events

Source: California Employment Development Department

Real Time Data - Occupations with the Most Online Job Ads

Online job postings are an indicator of current demand for employees in specific occupations. When assessing alternative training investments, there is value in considering current demand as well as short- and long-term forecasts. We extracted online job postings from The Conference Board Help Wanted OnLine™ (HWOL) data series, which compiles, analyzes, and categorizes job listings from many online job boards. The number of job listings from this dynamic data series change on a daily basis; however, a large share of the job ads are consistently related to occupations found within the growth industries of health care and social assistance; professional, technical, and scientific services; and wholesale trade. These data serve as one indicator of employer demand, with the understanding that many job openings are not advertised or are circulated off-line to a limited audience, such as union members.

Many of the top skills requirements for the top 20 advertised occupations shown below in Table 15 match the top skills in the high-growth industries profiled above.

Table 15
Skills of 20 High-Demand Occupations Based On Online Job Ads

Top 20 Occupations in Online Job Ads	BLS Educ. Level	Work Experience	On-the-Job Training	Active Learning	Active Listening	Complex Problem Solving	Coordination	Critical Thinking	Instructing	Mathematics	Monitoring	Negotiation	Operation and Control	Operation Monitoring	Operations Analysis	Persuasion	Programming	Quality Control Analysis	Reading Comprehension	Repairing	Service Orientation	Social Perceptiveness	Speaking	Systems Analysis	Systems Evaluation	Troubleshooting	Writing
Accountants and Auditors	3	None	None		●			●		●									●				●				
Bookkeeping, Accounting, and Auditing Clerks	7	None	MT OJT		●			●		●									●				●				
Computer Systems Analysts	3	None	None					●									●	●	●						●		
Computer Support Specialists	6	None	MT OJT		●			●	●														●				
Customer Service Representatives	7	None	ST OJT		●			●											●		●		●				
Executive Secretaries and Administrative Assistants	7	1-5 years	None		●														●		●		●				●
First-Line Supervisors/Managers of Food Preparation and Serving Workers	7	1-5 years	None				●	●			●								●				●				
First-Line Supervisors/Managers of Office and Administrative Support Workers	7	1-5 years	None		●						●								●			●	●				
First-Line Supervisors/Managers of Retail Sales Workers	7	1-5 years	None					●			●					●						●	●				
Industrial Engineers	3	None	None			●		●			●								●								●
Truck Drivers, Heavy and Tractor-Trailer	7	1-5 years	ST OJT		●								●	●						●			●				
Marketing Managers	3	1-5 years	None		●			●			●					●							●				
Network and Computer Systems Administrators	3	None	None					●			●						●		●						●		
Physical Therapists	1	None	None		●														●			●	●				●
Registered Nurses	4	None	None		●		●				●								●			●					
Retail Salespersons	8	None	ST OJT		●			●				●				●					●						
Sales Managers	3	1-5 years	None				●				●					●						●	●				
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	7	None	MT OJT		●			●				●							●				●				
Software Developers, Applications	3	None	None			●											●										
Web Developers	3	1-5 years	None	●				●							●		●		●					●	●	●	

Source: The Conference Board Help Wanted OnLine™ (HWOL) data series for a 120-Day Period Ending March 21, 2012; Occupational Information Network (O*NET)

Educational Codes	
1-	Doctoral or professional degree
2-	Master's degree
3-	Bachelor's degree
4-	Postsecondary non-degree award
5-	Some college, no degree
6-	High school, no degree
7-	High school diploma or equivalent
8-	Less than high school

On-the-Job Training	
I/R	Internship/Residency
APP	Apprenticeship
LT OJT	Long-term
MT OJT	Moderate-term
ST OJT	Short-term
None	None

Despite the range of occupations and training levels, it is interesting to note that certain broad skills are commonly required. The top shared in-demand skills, as defined by O*NET, are listed below, along with their definitions:

- ***Reading comprehension*** – understanding written sentences and paragraphs in work-related documents
- ***Critical thinking*** – using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems
- ***Speaking*** – talking to others to convey information effectively (in most instances, the ability to communicate in English is explicitly stated or inferred)
- ***Active listening*** – giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times
- ***Monitoring*** – monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action

Occupations with High Unemployment and Related Skills

Moving from in-demand occupations to the supply side of labor, one starting point is to consider the large pool of unemployed workers. The 2010 American Community Survey (ACS) identifies occupations in industries experiencing high unemployment rates. The occupations experiencing the highest level of unemployed individuals were analyzed for skill requirements. They include carpenters; construction laborers; electricians; sales route drivers; hand packers; material movers (hand); assemblers; and inspectors, testers, and sorters.

Dislocated workers from these occupations have many of the same foundation skills required for the in-demand occupations listed in Table 15, albeit at varying levels of required competencies. These common skills include the following:

- Critical Thinking
- Active Listening
- Speaking
- Monitoring
- Reading Comprehension

It should be noted that the skill of coordination (adjusting actions in relation to others' actions) was the most common skill identified among the high-unemployment occupations listed above. A portion of these displaced workers could benefit from training that helps align transferable skills to health care and wholesale trade occupations.

Career Pathways

A career pathway illustrates one track an individual may take to advance to a desired occupation and earn a higher wage. While occupations along a career pathway each have discrete tasks, they often share some of the same skills. Skill levels can and do vary, however. For example, O*NET shows that bookkeeping and accounting clerks

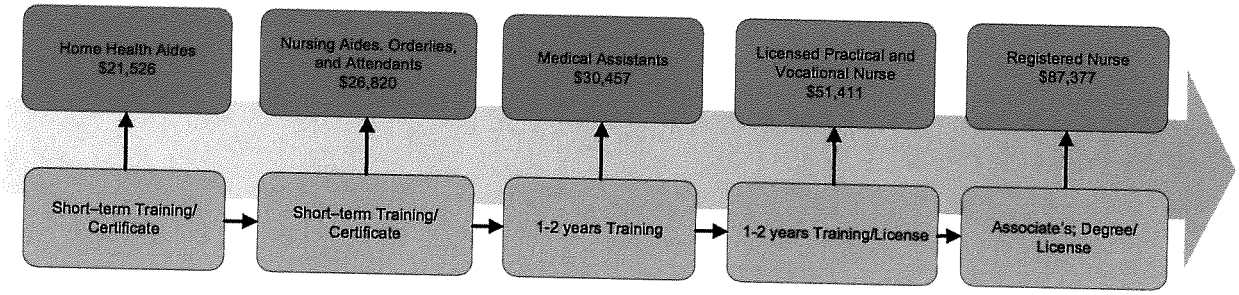
require less mathematical skill than accountants, and their skill ratings illustrate this. In the health care industry, licensed vocational nurses require a low level of instructing skill, while registered nurses require a markedly higher level of the skill in order to educate patients and instruct nursing staff. Education and training can help individuals improve their skills in order to progress along their career pathway.

The following pathways show a series of high-demand occupations that share some skills and knowledge and lead to progressively higher-earning occupations. Median earnings reported are from the Occupational Employment Statistics.

Registered Nurse Career Pathway

In California, the registered nurse (RN) occupation is projected to have 60,800 new job openings from growth from 2008-2018. In addition, there will be a need for 41,300 RNs address replacement needs that result from those leaving this occupation to seek jobs in other occupations. Overall, 102,100 total job openings are projected for RNs during the same period. Individuals who want to become registered nurses should begin their skill and knowledge foundation at the high school level, taking English, mathematics, biology, chemistry, social studies, and computer courses. With some high school and short-term classroom training from the California Department of Health Care Services, persons can enter the health care field as a home health aide and earn a median annual wage of $21,526. Another entry-level health care occupation is nursing aide, which also requires short-term training through an approved vocational program and has a median annual wage of $26,820. Following the career pathway illustrated in Figure 14, it would take 1-to-2 years of training for experienced home health and nursing aides to the medical assistant occupation. Advancement into this occupation would result in a significant salary increase, to a median annual wage of $30,457.

Figure 14

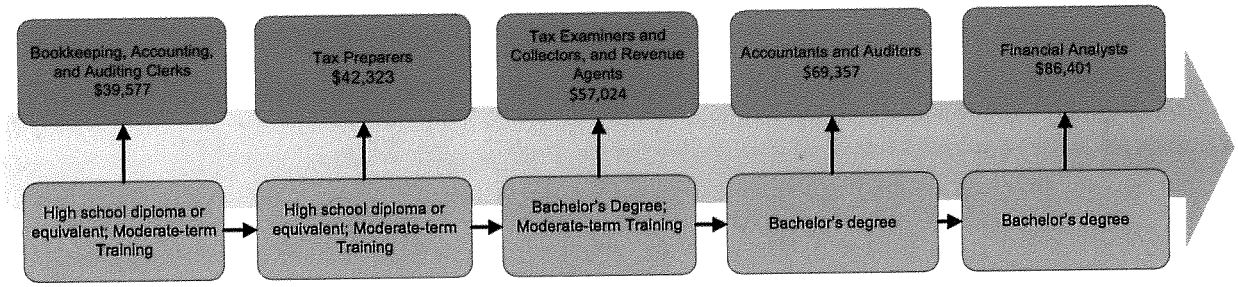


Medical assistants can advance to licensed vocational nurse (LVN), with a median annual wage of $51,411, by completing an approved 1-2 year program and passing the licensing exam. To advance to the target occupation of registered nurse, LVNs can earn an associate or bachelor of science degree in nursing through an approved program or complete the 30-unit LVN-to-RN bridge option offered only in California, plus pass the state licensing exam. Registered nurses earn a median annual salary of $87,377 in California.

Accountants and Auditors Career Pathway

In California, the accountants and auditors occupation is projected to have 26,900 new job openings from growth from 2008-2018. In addition, there will be a need for 23,700 accountants and auditors address replacement needs that result from those leaving this occupation to seek jobs in other occupations. Overall, 50,600 total job openings are projected for accountants and auditors during the same period. Individuals who want to become accountants and auditors should begin their skill and knowledge foundation at the high school level, taking business math, algebra, geometry, calculus, and keyboarding courses as well as computer classes to learn basic accounting software programs. With a high school education and moderate-term on-the-job training, individuals can enter this career pathway as a bookkeeping, accounting, and auditing clerk and earn a median annual wage of $39,577. Another entry-level accounting occupation is tax preparer, which also requires a high school education and moderate-term on-the-job training, and has a median annual wage of $42,323. Figure 15 shows the path tax preparers can follow to tax examiners, collectors, and revenue agents by earning a bachelor's degree and completing moderate-term on-the-job training. They earn a median annual wage of $57,024.

Figure 15



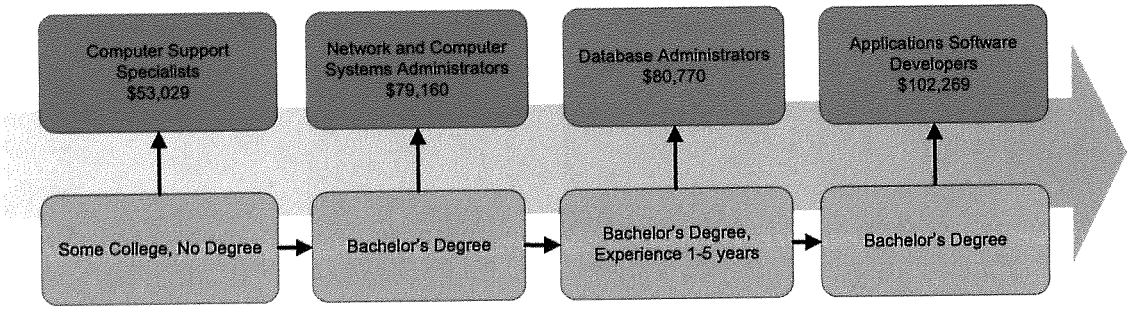
To advance to the destination occupation of accountant or auditor, candidates need to complete the Certified Public Accountant certification offered by the California Board of Accountancy, in addition to earning a bachelor's degree. Accountants and auditors earn a median annual salary of $69,357 in California. An advancement opportunity for accountants and auditors is the position of financial analysts, which has a median annual wage of $86,401, and requires a bachelor's degree.

Applications Software Developer Career Pathway

In California, the applications software developers (formerly computer software engineers, applications or systems) occupation is to have 25,200 new job openings from growth from 2008-2018. In addition, there will be a need for 32,000 application software developers to address replacement needs that result from those leaving this occupation to seek jobs in other occupations. Overall, 57,200 total job openings are projected for applications software developers during the same period. Individuals who want to become applications software developers should begin their skill and knowledge foundation at the high school level, taking English, mathematics, computer science, and engineering technology. With this educational base and selected college courses, persons can enter the computer systems design and related services field as a

computer support specialist and earn a median annual wage of $53,029. From this point, one can move into another computer systems design and related services occupation: network and computer systems administrator, which requires a bachelor's degree and has a median annual wage of $79,160. As Figure 16 details, experienced network and computer systems administrators who wish to increase their earnings and advance in the computer systems design and related services field can become database administrators.

Figure 16



Database administrators can advance to the target occupation of applications software developer, with a median annual wage of $102,269, by gaining experience in computer application development. Advancement opportunities to a systems software developer or a computer and information systems manager position may be possible with further education and experience.

Integration of Workforce Information into Planning and Decision Making

In its detailed analysis provided to the California Workforce Investment Board, LMID has prepared an assessment of the state's economy that anticipates near-term effects on employment, identifies demand occupations and occupational skills gaps, and outlines skills in occupations that are likely to be affected through economic recovery.

Ongoing support is available to Local Workforce Boards and the public through regional LMID labor market consultants stationed throughout the state and through planning tools such as Planning Information Packets, an annual publication provided to each local workforce planning agency, and both the short-term (two-year) and long-term (10-year) projections of employment.

Labor Market Information Core Products

Public access to the full range of state labor market information, including local and regional analyses, is available through the California Employment Development Department labor market information website – www.labormarketinfo.edd.ca.gov.

Major workforce information categories available on the website include career information as an aid to jobseekers, data on the economy in the context of the labor market, a data library with access to labor force, employment, and occupational and industry figures and analysis for the state, metropolitan statistical area (MSA), county, and sub-county levels. There is also a customer center section with workforce information organized by user group to include employers, economic developers, educators, workforce partners, and researchers.

A representative list of electronic products available on the state website consists of:

- ***Occupational Guides*** - includes job description and requirements, local job outlook, local benefits and wages, licensing, education, training, links to possible employers, how to find a job, and links to additional resources.
- ***Projections of Employment*** - projections of employment by occupation are future projections or "outlook" for employment. These projections are provided for periods of two and ten years. Two year, or short-term, projections are available at the statewide level only.
- ***Staffing Patterns by Industry and Occupation*** - A matrix of industries and occupations that list what industries employ an occupation and what the staffing pattern is for an industry.
- ***Occupational Profile*** - wages, outlook, licensing, and more for occupations.
- ***Local Area Profile*** - unemployment rates, industry employment, economic indicators, and more for the state or counties.
- ***Economic Indicators*** - income, Consumer Price Index, taxable sales, median home price, layoff statistics, commute patterns, and mass layoff statistics.
- ***Industry Employment*** - employment by industry, size, and number of businesses, data for "industry clusters" studies, and major employers by county. Data are by place of work.
- Labor Force and Unemployment - labor force, employment, unemployment, and rates (current and historical). Data are by place of residence.

As noted earlier, LMID also has labor market consultants stationed in regions throughout the state. These analysts offer training and analytical support to local workforce development staff. A public access phone line, 916-262-2162, is staffed to provide assistance in locating labor market information on the state website and in the applicability of various workforce information products to specific customer needs.