



# Regional Economic Analysis Profile

California

July 2015



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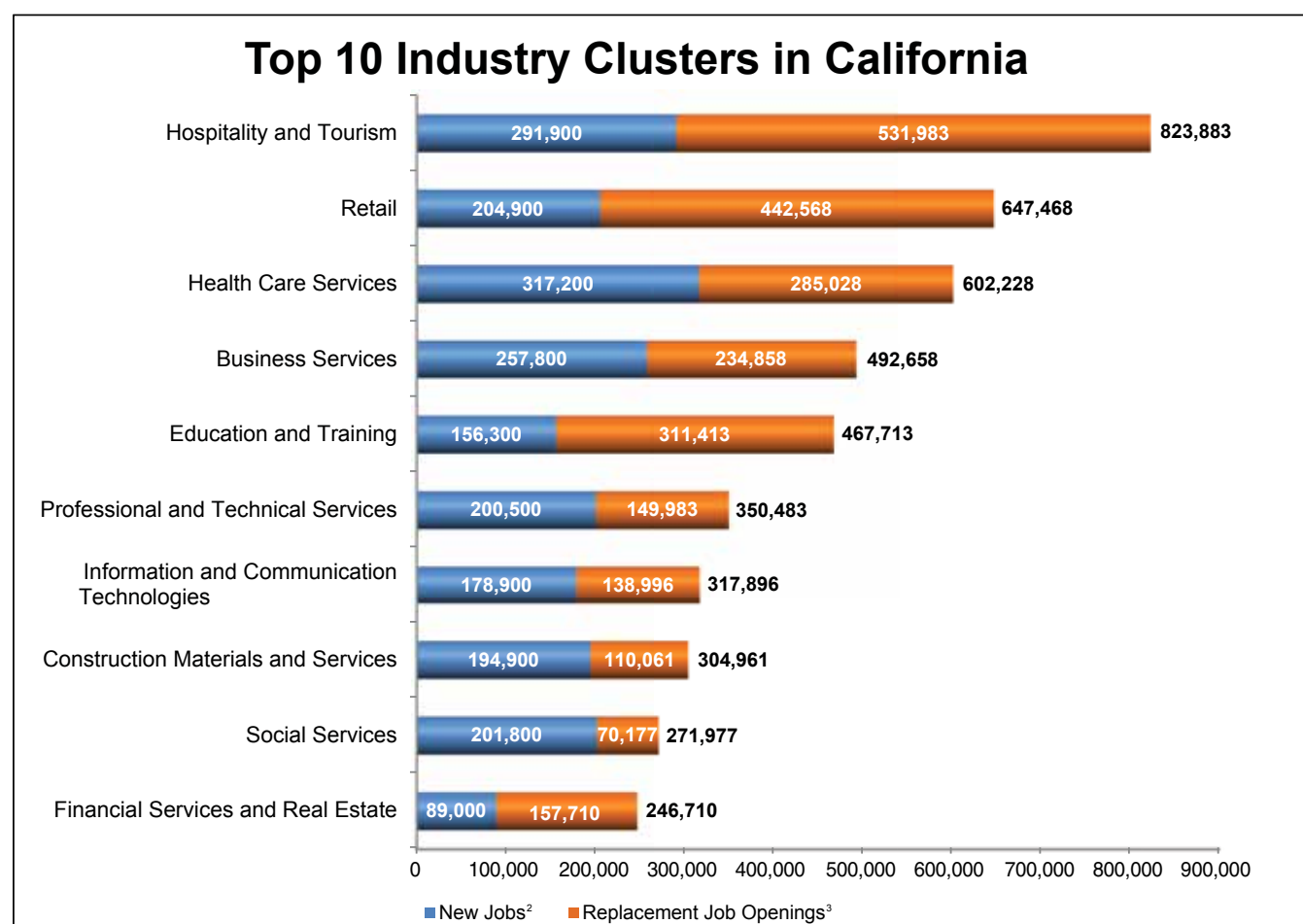
# SUMMARY OF THE CALIFORNIA INDUSTRY CLUSTERS

## What is an Industry Cluster?

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

## Purpose of This Report

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



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

<sup>1</sup> Total job openings are the sum of new jobs and replacement job openings.

<sup>2</sup> New jobs are only openings due to growth and do not include job declines. If an occupation's employment change is negative, there is no job growth and new jobs are set to zero.

<sup>3</sup> Replacement job openings estimate the number of job openings created when workers retire or permanently leave an occupation and need to be replaced.

## INDUSTRY CLUSTER DESCRIPTIONS

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

The **Hospitality and Tourism** industry cluster includes interrelated industries such as eating establishments, hotels and motels, casinos, museums, and sightseeing transportation. For 2013-2014,\* this cluster comprised more than 1.6 million workers, 11.5 percent of the state's employment. Industries within this cluster with the most projected job openings include:

- Restaurants and Other Eating Places
- Traveler Accommodation
- Other Amusement and Recreation Industries
- Special Food Services
- Amusement Parks and Arcades

The **Retail** industry cluster includes grocery and department stores, dollar stores, retail pharmacies, and clothing specialty stores. During 2013-2014,\* this cluster employed more than 1.5 million workers or 10.1 percent of the state's total employment. Industries projected to have the largest number of jobs (new and replacement) include:

- Grocery Stores
- Other General Merchandise Stores
- Clothing Stores
- Department Stores
- Automobile Dealers

The **Health Care Services** industry cluster includes acute care and outpatient hospitals, nursing home and rehabilitation centers, adult day care centers, and community service agencies for the elderly. It employed almost 1.5 million people in the state as of 2013-2014,\* accounting for 10.5 percent of the workforce. Top industries within this cluster include:

- General Medical and Surgical Hospitals
- Offices of Physicians
- Nursing Care Facilities (Skilled Nursing Facilities)
- Offices of Dentists
- Outpatient Care Centers

The **Business Services** industry cluster is comprised of industries that include temporary help agencies, employer organizations, janitorial services, security systems services, and carpet cleaning establishments. This cluster employed almost 1.2 million people during the 2013-2014,\* 8.3 percent of the state's workforce. Top industries in this cluster include:

- Employment Services
- Management of Companies and Enterprises
- Services to Buildings and Dwellings
- Investigation and Security Services
- Office Administrative Services

The **Education and Training** industry cluster is comprised of elementary and high schools, community colleges, universities, and professional schools with programs such as dental, law, and medical. Other establishments include English as a Second Language (ESL) programs, test preparation and tutoring, or driving instruction. During 2013-2014,\* this cluster employed more than 1.3 million people in California, accounting for 9.2 percent of the workforce. Top industries within this cluster include:

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

The **Professional and Technical Services** industry cluster is comprised of interrelated industries that include engineering and architectural firms, law offices, advertising companies, and accounting firms. In 2013-2014,\* more than 771,000 people were employed in the state, 5.4 percent of the state's workforce. Top industries within this cluster include:

- Management, Scientific, and Technical Consulting Services
- Architectural, Engineering, and Related Services
- Legal Services
- Accounting, Tax Preparation, Bookkeeping, and Payroll Services
- Other Professional, Scientific, and Technical Services

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

## INDUSTRY CLUSTER DESCRIPTIONS

The **Information and Communication Technologies** cluster includes interdependent industries related to computers and peripheral equipment, as well as software design and manufacturing, computer programming services, installation services, and wireless telecommunications carriers. During 2013-2014,\* more than 771,000 people were employed in California, 5.4 percent of the state's workforce. Industries with the highest number of projected job openings include:

- Computer Systems Design and Related Services
- Wholesale Electronic Markets and Agents and Brokers
- Semiconductor and Other Electronic Component Manufacturing
- Computer and Peripheral Equipment Manufacturing
- Other Information Services

The **Construction Materials and Services** industry cluster is comprised of builders of mechanical systems such as electrical, heating, and water; specialty trades outfits such as drywall, flooring, and painting contractors; residential and commercial builders; and contractors who complete foundation and framing work. During 2013-2014,\* more than 661,000 workers made up the cluster's employment, representing 4.6 percent of the state's total workforce. Top industries in this cluster include:

- Building Equipment Contractors
- Building Finishing Contractors
- Residential Building Construction
- Foundation, Structure, and Building Exterior Contractors
- Nonresidential Building Construction

The **Social Services** industry cluster comprises establishments and agencies that provide non-residential services for the welfare of children, adults, the elderly, and disabled. Examples include nonmedical in-home care programs, day care centers, and community food banks. In total, the cluster employed almost 606,000 people, accounting for 4.4 percent of the state's workforce in 2013-2014.\* Industries include:

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

The **Financial Services and Real Estate** industry cluster includes commercial banks, savings institutions, credit unions, credit card companies, insurance firms, and real estate appraisers or property management companies. In total, the cluster employed almost 719,000 people and accounted for 5 percent of the state's workforce in 2013-2014.\* Industries showing the highest projected job openings include:

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

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



# INDUSTRY CLUSTER DEFINITIONS

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

## Hospitality and Tourism

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

## Retail

4411	Automobile Dealers
4412	Other Motor Vehicle Dealers
4413	Automotive Parts, Accessories, and Tire Stores
4431	Electronics and Appliance Stores
4441	Building Material and Supplies Dealers
4451	Grocery Stores
4452	Specialty Food Stores
4453	Beer, Wine, and Liquor Stores
4461	Health and Personal Care Stores
4471	Gasoline Stations
4481	Clothing Stores
4482	Shoe Stores
4483	Jewelry, Luggage, and Leather Goods Stores
4511	Sporting Goods, Hobby, and Musical Instrument Stores
4521	Department Stores
4529	Other General Merchandise Stores
4532	Office Supplies, Stationery, and Gift Stores
4533	Used Merchandise Stores
4542	Vending Machine Operators

## Health Care Services

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

## Business Services

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

## Education and Training

6111	Elementary and Secondary Schools
6112	Junior Colleges
6113	Colleges, Universities, and Professional Schools
6114	Business Schools and Computer and Management Training
6115	Technical and Trade Schools
6116	Other Schools and Instruction
6117	Educational Support Services



# INDUSTRY CLUSTER DEFINITIONS

## Professional and Technical Services

- 5411 Legal Services
- 5412 Accounting, Tax Preparation, Bookkeeping, and Payroll Services
- 5413 Architectural, Engineering, and Related Services
- 5414 Specialized Design Services
- 5416 Management, Scientific, and Technical Consulting Services
- 5418 Advertising, Public Relations, and Related Services
- 5419 Other Professional, Scientific, and Technical Services

## Information and Communication Technologies

- 3341 Computer and Peripheral Equipment Manufacturing
- 3342 Communications Equipment Manufacturing
- 3344 Semiconductor and Other Electronic Component Manufacturing
- 3359 Other Electrical Equipment and Component Manufacturing
- 4251 Wholesale Electronic Markets and Agents and Brokers
- 5112 Software Publishers
- 5171 Wired Telecommunications Carriers
- 5172 Wireless Telecommunications Carriers (except Satellite)
- 5174 Satellite Telecommunications
- 5179 Other Telecommunications
- 5182 Data Processing, Hosting, and Related Services
- 5191 Other Information Services
- 5415 Computer Systems Design and Related Services
- 8112 Electronic and Precision Equipment Repair and Maintenance

## Construction Materials and Services

- 2123 Nonmetallic Mineral Mining and Quarrying
- 2213 Water, Sewage and Other Systems
- 2361 Residential Building Construction
- 2362 Nonresidential Building Construction
- 2372 Land Subdivision
- 2373 Highway, Street, and Bridge Construction
- 2379 Other Heavy and Civil Engineering Construction
- 2381 Foundation, Structure, and Building Exterior Contractors
- 2382 Building Equipment Contractors
- 2383 Building Finishing Contractors
- 2389 Other Specialty Trade Contractors

## Construction Materials and Services (Continued)

- 3211 Sawmills and Wood Preservation
- 3271 Clay Product and Refractory Manufacturing
- 3272 Glass and Glass Product Manufacturing
- 3273 Cement and Concrete Product Manufacturing
- 3274 Lime and Gypsum Product Manufacturing
- 3279 Other Nonmetallic Mineral Product Manufacturing
- 3339 Other General Purpose Machinery Manufacturing
- 3351 Electric Lighting Equipment Manufacturing

## Social Services

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

## Financial Services and Real Estate

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



# Occupational Analysis: Business Services Cluster

California

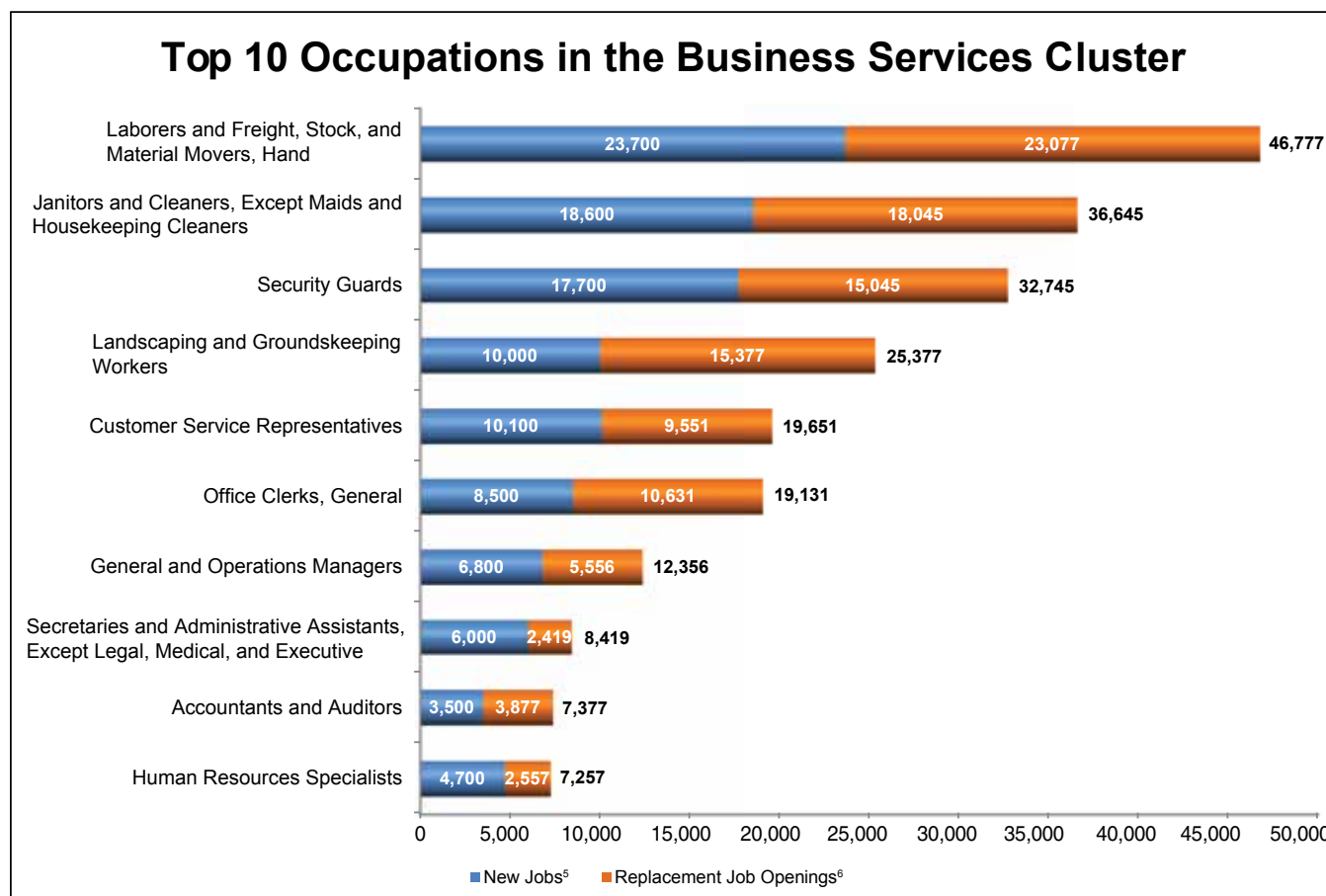
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## What is the Business Services Cluster?

The Business Services cluster is comprised of 11 industries that provide services to other organizations and businesses. Employers in this cluster include temporary agencies, janitorial and landscaping businesses, corporate offices and holding companies, private investigation services, and billing services. Establishments in this cluster also include technical consulting firms, housecleaning services, and pest control firms. Workers employed within this cluster often share skills and work activities both within the cluster and in many other industry clusters, suggesting the potential for skills transference and upward mobility with additional training.

## Top 10 Occupations in the Business Services Cluster

The graph below identifies the top 10 occupations in the Business Services cluster, based on California's new job growth plus replacement openings. In sum, these 10 occupations represent almost half of the 492,658 total job openings projected in this cluster between 2012 and 2022. Moreover, many share the same required skills such as active listening, reading comprehension, speaking, critical thinking, and monitoring.<sup>4</sup>



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

<sup>4</sup> U.S. Department of Labor's [Occupational Information Network \(O\\*NET\)](http://www.onetonline.org) at [www.onetonline.org](http://www.onetonline.org).

<sup>5</sup> New jobs are only openings due to growth and do not include job declines. If an occupation's employment change is negative, there is no job growth and new jobs are set to zero.

<sup>6</sup> Replacement job openings estimate the number of job openings created when workers retire or permanently leave an occupation and need to be replaced.

## Top 10 Occupations and Recent Job Demand in the Business Services Cluster

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

Occupations	Total Job Openings <sup>7</sup> (2012-2022)	Median Hourly Wage (2014)	Median Annual Wage (2014)	Entry Level Education <sup>8</sup>	HWOL Job Ads <sup>9</sup> (120 days)
Laborers and Freight, Stock, and Material Movers, Hand	46,777	\$12.00	\$24,953	Less than high school	9,257
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	36,645	\$12.02	\$24,982	Less than high school	11,932
Security Guards	32,745	\$12.09	\$25,137	High school diploma or equivalent	14,415
Landscaping and Groundskeeping Workers	25,377	\$12.64	\$26,274	Less than high school	6,658
Customer Service Representatives	19,651	\$18.14	\$37,713	High school diploma or equivalent	29,252
Office Clerks, General	19,131	\$15.55	\$32,360	High school diploma or equivalent	14,815
General and Operations Managers	12,356	\$51.95	\$108,050	Bachelor's degree	9,237
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	8,419	\$18.37	\$38,189	High school diploma or equivalent	15,580
Accountants and Auditors	7,377	\$35.11	\$73,006	Bachelor's degree	25,324
Human Resources Specialists	7,257	\$31.71	\$65,962	Bachelor's degree	8,080

Source: California Employment Development Department, *Projections of Employment 2012-2022*; *Occupational Employment Statistics Wage Survey*, updated to 1st Q, 2015; The Conference Board Help Wanted OnLine™ (HWOL) Data Series, 120-day period ending June 22, 2015.

<sup>7</sup> Total job openings are the sum of new jobs and replacement job openings.

<sup>8</sup> U.S. Department of Labor, Bureau of Labor Statistics (BLS) 2012 education levels.

<sup>9</sup> Totals represent job advertisements from employers in all industries. One job opening may be represented in more than one job advertisement.

## Top Occupations for the Business Services Cluster by Education Level

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

Occupations	Total Job Openings <sup>10</sup> (2012-2022)	Median Hourly Wage (2014)	Median Annual Wage (2014)	HWOL Job Ads (120 days)
<b>Requires a Bachelor's Degree or Higher</b>				
General and Operations Managers	12,356	\$51.95	\$108,050	9,237
Accountants and Auditors	7,377	\$35.11	\$73,006	25,324
Human Resources Specialists	7,257	\$31.71	\$65,962	8,080
Market Research Analysts and Marketing Specialists	4,169	\$34.18	\$71,092	10,400
Financial Managers	3,287	\$61.67	\$128,282	12,065
<b>Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree</b>				
Registered Nurses	3,338	\$46.17	\$96,046	52,180
Computer User Support Specialists	2,584	\$26.42	\$54,943	18,441
Heavy and Tractor-Trailer Truck Drivers	2,560	\$19.93	\$41,463	26,957
Licensed Practical and Licensed Vocational Nurses	2,376	\$25.28	\$52,570	6,772
Nursing Assistants	2,180	\$13.72	\$28,546	3,871
<b>Requires a High School Diploma or Equivalent or Less</b>				
Laborers and Freight, Stock, and Material Movers, Hand	46,777	\$12.00	\$24,953	9,257
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	36,645	\$12.02	\$24,982	11,932
Security Guards	32,745	\$12.09	\$25,137	14,415
Landscaping and Groundskeeping Workers	25,377	\$12.64	\$26,274	6,658
Customer Service Representatives	19,651	\$18.14	\$37,713	29,252

Source: California Employment Development Department, *Projections of Employment 2012-2022*; *Occupational Employment Statistics Wage Survey*, updated to 1st Q, 2015; *The Conference Board Help Wanted OnLine™ (HWOL) Data Series*, 120-day period ending June 22, 2015.

<sup>10</sup> Total job openings are the sum of new jobs and replacement job openings.

## Skill Requirements in the Business Services Cluster

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

Occupations	Skills																			
	Active Learning	Active Listening	Complex Problem Solving	Coordination	Critical Thinking	Equipment Maintenance	Instruction	Judgment and Decision Making	Learning Strategies	Management of Personnel Resources	Mathematics	Monitoring	Operation and Control	Operation Monitoring	Persuasion	Reading Comprehension	Service Orientation	Social Perceptiveness	Speaking	Systems Analysis
<b>Requires a Bachelor's Degree or Higher</b>																				
General and Operations Managers	•	•		•	•					•		•				•		•	•	
Accountants and Auditors <sup>11</sup>	•	•			•			•			•	•				•			•	•
Human Resources Specialists	•	•		•	•							•				•	•	•	•	
Market Research Analysts and Marketing Specialists	•	•			•			•				•				•			•	•
Financial Managers <sup>12</sup>	•	•			•				•			•			•	•		•	•	
<b>Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree</b>																				
Registered Nurses	•	•		•	•			•				•				•	•	•	•	
Computer User Support Specialists	•	•		•	•		•					•				•	•		•	
Heavy and Tractor-Trailer Truck Drivers		•	•		•	•						•	•	•		•			•	
Licensed Practical and Licensed Vocational Nurses		•		•	•							•				•	•	•	•	
Nursing Assistants	•	•		•	•							•				•	•	•	•	
<b>Requires a High School Diploma or Equivalent or Less</b>																				
Laborers and Freight, Stock, and Material Movers, Hand		•	•	•	•							•	•	•		•			•	
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	•	•		•	•			•								•	•	•	•	
Security Guards		•		•	•							•			•	•	•	•	•	
Landscaping and Groundskeeping Workers		•	•					•				•	•	•		•		•	•	
Customer Service Representatives		•		•	•							•			•	•	•	•	•	

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

<sup>11</sup> Skills listed represent Accountants, a specialty occupation of Accountants and Auditors.

<sup>12</sup> Skills listed represent Financial Managers, Branch or Department, a specialty occupation of Financial Managers.

## Work Activities in the Business Services Cluster

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

Occupations	Work Activities																			
	Analyzing Data or Information	Assisting and Caring for Others	Coaching and Developing Others	Communicating with Persons Outside Organization	Communicating with Supervisors, Peers, or Subordinates	Controlling Machines and Processes	Coordinating the Work and Activities of Others	Documenting/Recording Information	Establishing and Maintaining Interpersonal Relationships	Evaluating Information to Determine Compliance with Standards	Getting Information	Guiding, Directing, and Motivating Subordinates	Handling and Moving Objects	Identifying Objects, Actions, and Events	Inspecting Equipment, Structures, or Material	Interacting With Computers	Judging the Qualities of Things, Services, or People	Making Decisions and Solving Problems	Monitor Processes, Materials, or Surroundings	Monitoring and Controlling Resources
<b>Requires a Bachelor's Degree or Higher</b>																				
General and Operations Managers				●	●		●		●								●		●	
Accountants and Auditors <sup>13</sup>	●				●				●	●	●						●			
Human Resources Specialists				●	●				●	●							●		●	
Market Research Analysts and Marketing Specialists	●			●	●				●	●				●					●	
Financial Managers <sup>14</sup>			●		●	●	●	●			●				●	●			●	
<b>Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree</b>																				
Registered Nurses	●			●				●	●			●				●	●		●	
Computer User Support Specialists				●				●	●			●		●		●			●	
Heavy and Tractor-Trailer Truck Drivers					●			●	●		●	●	●			●		●	●	
Licensed Practical and Licensed Vocational Nurses	●			●			●	●				●	●			●	●		●	
Nursing Assistants	●			●				●	●		●	●				●	●		●	
<b>Requires a High School Diploma or Equivalent or Less</b>																				
Laborers and Freight, Stock, and Material Movers, Hand				●	●			●	●			●	●				●		●	
Janitors and Cleaners, Except Maids and Housekeeping Cleaners				●	●			●				●		●			●	●		
Security Guards	●			●	●			●	●	●						●	●	●		
Landscaping and Groundskeeping Workers					●			●				●	●				●	●		●
Customer Service Representatives			●	●				●	●			●				●			●	●

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

<sup>13</sup> Work Activities listed represent Accountants, a specialty occupation of Accountants and Auditors.

<sup>14</sup> Work Activities listed represent Financial Managers, Branch or Department, a specialty occupation of Financial Managers.



## Related Occupations for the Business Services Cluster

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

Business Services Occupations	Related Occupations
<b>Requires a Bachelor's Degree or Higher</b>	
General and Operations Managers	<ul style="list-style-type: none"> <li>• First-Line Supervisors of Office and Administrative Support Workers</li> <li>• Logistics Managers</li> <li>• Storage and Distribution Managers</li> </ul>
Accountants and Auditors	<ul style="list-style-type: none"> <li>• Financial Analysts</li> <li>• Personal Financial Advisors</li> <li>• Risk Management Specialists</li> </ul>
Human Resources Specialists	<ul style="list-style-type: none"> <li>• Management Analysts</li> <li>• Market Research Analysts and Marketing Specialists</li> <li>• Fraud Examiners, Investigators and Analysts</li> </ul>
Market Research Analysts and Marketing Specialists	<ul style="list-style-type: none"> <li>• Risk Management Specialists</li> <li>• Financial Analysts</li> <li>• Regulatory Affairs Specialists</li> </ul>
Financial Managers	<ul style="list-style-type: none"> <li>• Sales Agents, Financial Services</li> <li>• Human Resources Specialists</li> <li>• Auditors</li> </ul>
<b>Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree</b>	
Registered Nurses	<ul style="list-style-type: none"> <li>• Licensed Practical and Licensed Vocational Nurses</li> <li>• Cardiovascular Technologists and Technicians</li> <li>• Emergency Medical Technicians and Paramedics</li> </ul>
Computer User Support Specialists	<ul style="list-style-type: none"> <li>• Web Administrators</li> <li>• Electrical Engineering Technicians</li> <li>• Computer Operators</li> </ul>
Heavy and Tractor-Trailer Truck Drivers	<ul style="list-style-type: none"> <li>• Pile-Driver Operators</li> <li>• Light Truck or Delivery Services Drivers</li> <li>• Service Unit Operators, Oil, Gas, and Mining</li> </ul>
Licensed Practical and Licensed Vocational Nurses	<ul style="list-style-type: none"> <li>• Physical Therapist Assistants</li> <li>• Social and Human Service Assistants</li> <li>• Occupational Therapy Assistants</li> </ul>
Nursing Assistants <sup>15</sup>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<b>Requires a High School Diploma or Equivalent or Less</b>	
Laborers and Freight, Stock, and Material Movers, Hand	<ul style="list-style-type: none"> <li>• Industrial Truck and Tractor Operators</li> <li>• Rail-Track Laying and Maintenance Equipment Operators</li> <li>• Fence Erectors</li> </ul>
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	<ul style="list-style-type: none"> <li>• Dishwashers</li> <li>• Food Preparation Workers</li> <li>• Food Servers, Nonrestaurant</li> </ul>
Security Guards	<ul style="list-style-type: none"> <li>• Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers</li> <li>• Shipping, Receiving, and Traffic Clerks</li> <li>• Postal Service Mail Carriers</li> </ul>
Landscaping and Groundskeeping Workers	<ul style="list-style-type: none"> <li>• Nursery Workers</li> <li>• Construction Laborers</li> <li>• Helpers--Production Workers</li> </ul>
Customer Service Representatives	<ul style="list-style-type: none"> <li>• Bill and Account Collectors</li> <li>• Medical Records and Health Information Technicians</li> <li>• Hotel, Motel, and Resort Desk Clerks</li> </ul>

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

<sup>15</sup> Currently no related occupations reported by O\*NET

## Employer Demand for the Business Services Cluster

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

<b>Business Services Cluster Employers</b>	<b>Recent Job Advertisements<sup>16</sup> (120-day period)</b>	<b>Prior Year Job Advertisements (120-day period)</b>	<b>Numerical Change</b>	<b>Year-Over Percent Change (HWOL Job Advertisements)</b>
Robert Half International	18,565	10,218	8,347	81.7%
Appleone	8,260	5,774	2,486	43.1%
Truststaff	7,373	4,863	2,510	51.6%
Randstad	5,593	4,064	1,529	37.6%
Aerotek	3,650	2,585	1,065	41.2%
Accountemps	3,573	3,424	149	4.4%
Kforce Professional Staffing, Inc.	3,356	2,780	576	20.7%
Kelly Services	3,033	2,351	682	29.0%
Volt Workforce Solutions	2,514	3,613	-1,099	-30.4%
Supplemental Health Care	2,434	4,264	-1,830	-42.9%
AlliedBarton Security	2,294	1,246	1,048	84.1%
Select Staffing	2,126	2,304	-178	-7.7%
Manpower	1,600	1,311	289	22.0%
Adecco	1,564	1,503	61	4.1%
Maxim Healthcare	1,181	611	570	93.3%
Judge Group, Inc.	985	1,900	-915	-48.2%
UCLA Healthcare	980	478	502	105.0%
TalentBurst	942	682	260	38.1%
Visa, Inc.	851	575	276	48.0%
Yoh	760	1,356	-596	-44.0%

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

<sup>16</sup> Totals do not include employers with anonymous job advertisements.

## Instructional Programs for the Top Business Services Cluster Occupations

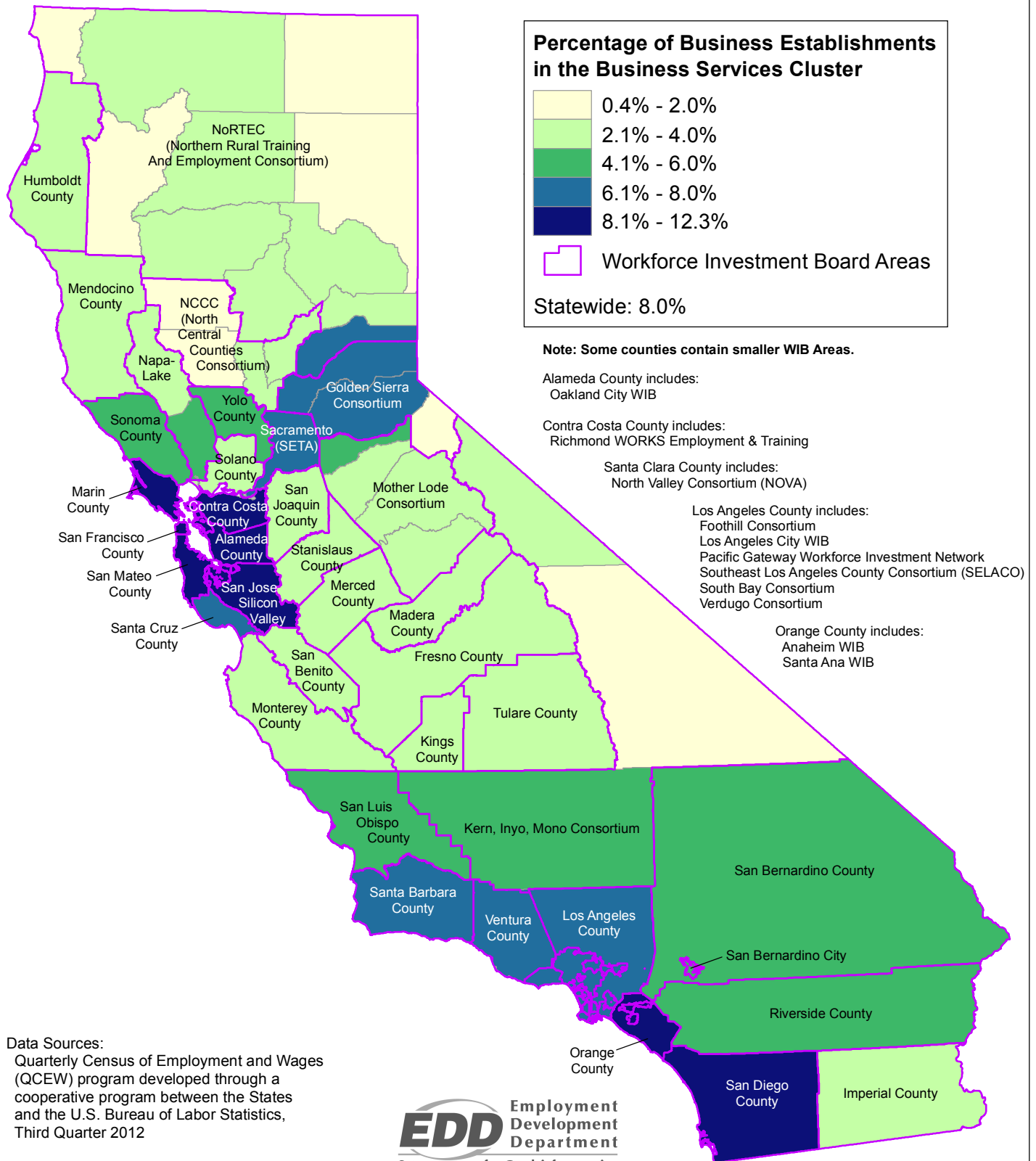
The table below provides examples of instructional programs related to some of the top occupations in the Business Services cluster, particularly those that require less than a bachelor's degree. These programs train individuals for occupations throughout many industries and are not limited to the Business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

Occupations	Classification of Instructional Program (CIP)		Taxonomy of Programs (TOP)	
	CIP Code	CIP Title	TOP Code	TOP Title
Registered Nurses	51.3801	Registered Nursing/Registered Nurse	123000	Nursing
	51.3802	Nursing Administration	123010	Registered Nursing
	51.3803	Adult Health Nurse/Nursing		
Computer User Support Specialists	01.0106	Agricultural Business Technology		
	11.1006	Computer Support Specialist	070820	Computer Support
	51.0709	Medical Office Computer Specialist/Assistant		
Heavy and Tractor-Trailer Truck Drivers	49.0205	Truck and Bus Driver/Commercial Vehicle Operator and Instructor	094750	Truck and Bus Driving
Licensed Practical and Licensed Vocational Nurses	51.3901	Licensed Practical/Vocational Nurse Training	123020	Licensed Vocational Nursing
	51.3999	Practical Nursing, Vocational Nursing and Nursing Assistants, Other		
Nursing Assistants	51.2601	Health Aide		
	51.3902	Nursing Assistant/Aide and Patient Care Assistant/Aide	123030	Certified Nurse Assistant
	51.3999	Practical Nursing, Vocational Nursing and Nursing Assistants, Other		
Customer Service Representatives	N/A	N/A	051800	Customer Service

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

# California Business Services Cluster

Percentage of Total County Establishments, 2012



Data Sources:  
Quarterly Census of Employment and Wages (QCEW) program developed through a cooperative program between the States and the U.S. Bureau of Labor Statistics, Third Quarter 2012

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

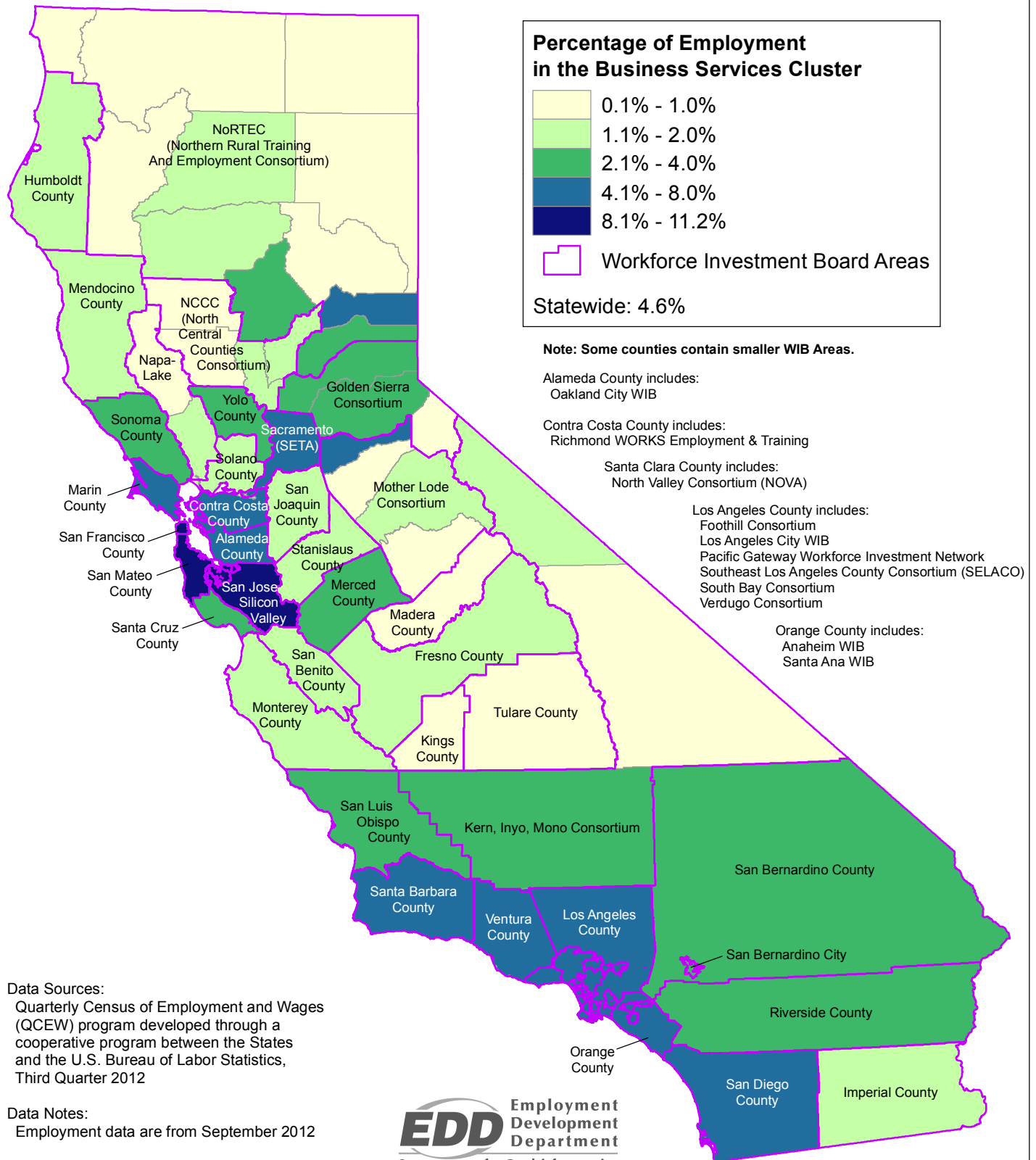
**EDD** Employment Development Department  
State of California

**LaborMarketInfo**

File T036

# California Business Services Cluster

Percentage of Total County Employment, 2012



**Data Sources:**  
Quarterly Census of Employment and Wages (QCEW) program developed through a cooperative program between the States and the U.S. Bureau of Labor Statistics, Third Quarter 2012

**Data Notes:**  
Employment data are from September 2012

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

**EDD** Employment Development Department  
State of California

**LaborMarketInfo**

File T036



# Occupational Analysis: Education and Training Cluster

California

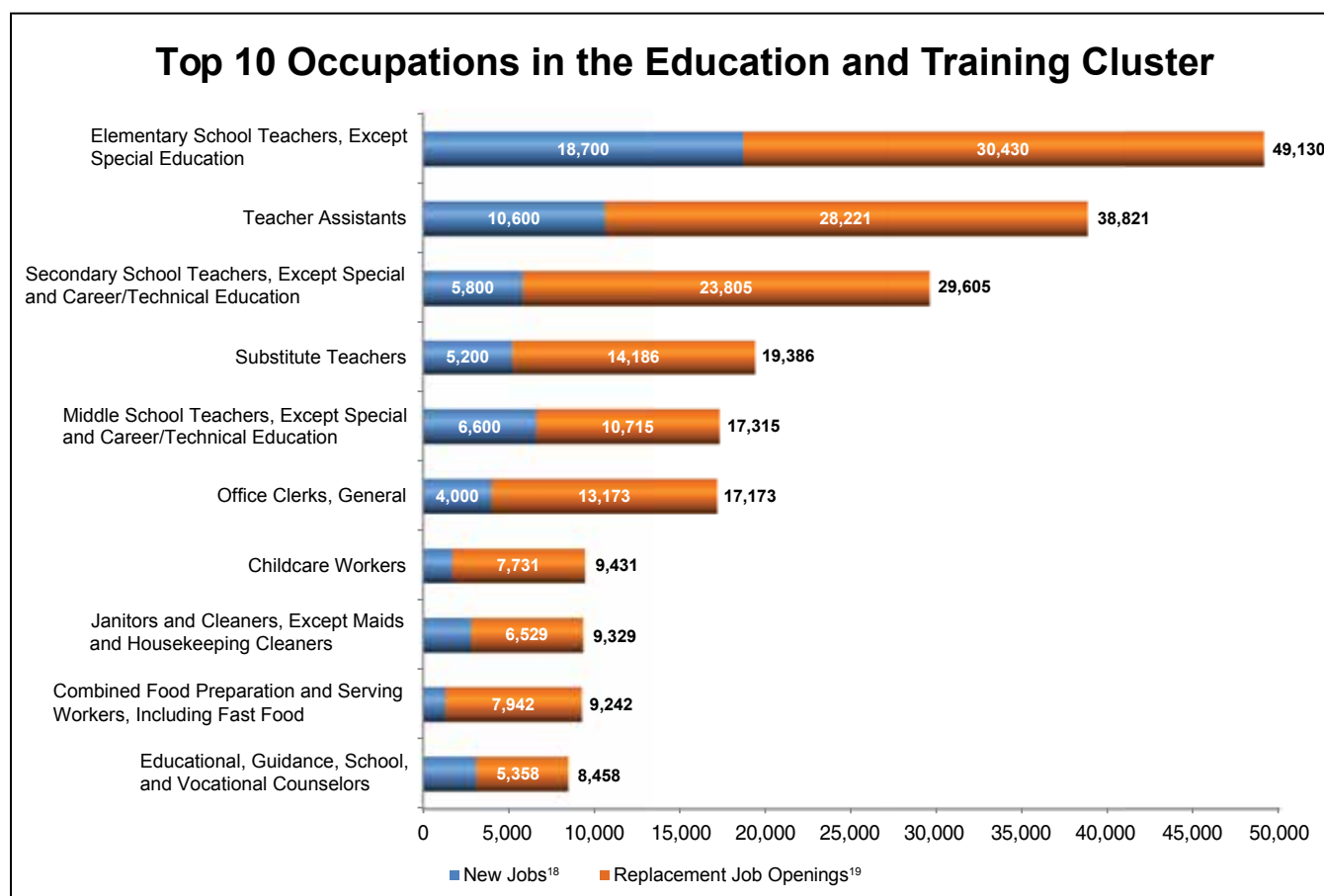
July 2015

## What is the Education and Training Cluster?

The Education and Training cluster is comprised of seven industries and includes public and private elementary and high schools, community colleges, universities, and professional schools with programs such as dental, law, and medical. Other establishments include trade schools and tutoring businesses. The workers employed within this cluster span all skill levels and share skills and work activities both within the cluster and in many other industry clusters, suggesting the potential for skills transference and upward mobility with additional training.

## Top 10 Occupations in the Education and Training Cluster

The graph below identifies the top 10 occupations in the Education and Training cluster, based on statewide new job growth plus replacement openings. In sum, these 10 occupations represents almost half of the 467,713 total job openings projected in this cluster between 2012 and 2022. Moreover, many share the same required skills such as active listening, critical thinking, social perceptiveness, and speaking.<sup>17</sup>



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

<sup>17</sup> U.S. Department of Labor's [Occupational Information Network \(O\\*NET\)](http://www.onetonline.org) at [www.onetonline.org](http://www.onetonline.org).

<sup>18</sup> New jobs are only openings due to growth and do not include job declines. If an occupation's employment change is negative, there is no job growth and new jobs are set to zero.

<sup>19</sup> Replacement job openings estimate the number of job openings created when workers retire or permanently leave an occupation and need to be replaced.



## Top 10 Occupations and Recent Job Demand in the Education and Training Cluster

The table below further profiles the California's economic market's top 10 occupations in the Education and Training cluster by listing the total job openings for 2012-2022, median hourly and annual wages, and entry-level education requirements. Also included are online job advertisements extracted from The Conference Board Help Wanted OnLine™ (HWOL) data series over a 120-day period. HWOL compiles, analyzes, and categorizes job advertisements from numerous online job boards, including CalJOBS<sup>SM</sup> ([www.caljobs.ca.gov](http://www.caljobs.ca.gov)), California's online job listing system.

Occupations	Total Job Openings <sup>20</sup> (2012-2022)	Median Hourly Wage (2014)	Median Annual Wage (2014)	Entry Level Education <sup>21</sup>	HWOL Job Ads <sup>22</sup> (120 days)
Elementary School Teachers, Except Special Education	49,130	N/A	\$72,739	Bachelor's degree	5,681
Teacher Assistants	38,821	N/A	\$30,236	Some college, no degree	7,043
Secondary School Teachers, Except Special and Career/ Technical Education	29,605	N/A	\$71,283	Bachelor's degree	7,377
Substitute Teachers	19,386	\$18.74	\$38,982	N/A	N/A
Middle School Teachers, Except Special and Career/ Technical Education	17,315	N/A	\$69,734	Bachelor's degree	4,257
Office Clerks, General	17,173	\$15.55	\$32,360	High school diploma or equivalent	14,815
Childcare Workers	9,431	\$11.44	\$23,782	High school diploma or equivalent	2,961
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	9,329	\$12.02	\$24,982	Less than high school	11,932
Combined Food Preparation and Serving Workers, Including Fast Food	9,242	\$9.45	\$19,667	Less than high school	14,047
Educational, Guidance, School, and Vocational Counselors	8,458	\$29.99	\$62,371	Master's degree	3,781

Source: California Employment Development Department, *Projections of Employment 2012-2022*; *Occupational Employment Statistics Wage Survey*, updated to 1st Q, 2015; The Conference Board Help Wanted OnLine™ (HWOL) Data Series, 120-day period ending June 22, 2015.

<sup>20</sup> Total job openings are the sum of new jobs and replacement job openings.

<sup>21</sup> U.S. Department of Labor, Bureau of Labor Statistics (BLS) 2012 education levels.

<sup>22</sup> Totals represent job advertisements from employers in all industries. One job opening may be represented in more than one job advertisement.

## Top Occupations for the Education and Training Cluster by Education Level

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

Occupations	Total Job Openings <sup>23</sup> (2012-2022)	Median Hourly Wage (2014)	Median Annual Wage (2014)	HWOL Job Ads (120 days)
<b>Requires a Bachelor's Degree or Higher</b>				
Elementary School Teachers, Except Special Education	49,130	N/A	\$72,739	5,681
Secondary School Teachers, Except Special and Career/Technical Education	29,605	N/A	\$71,283	7,377
Middle School Teachers, Except Special and Career/Technical Education	17,315	N/A	\$69,734	4,257
Educational, Guidance, School, and Vocational Counselors	8,458	\$29.99	\$62,371	3,781
Kindergarten Teachers, Except Special	8,371	N/A	\$66,729	364
<b>Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree</b>				
Teacher Assistants	38,821	N/A	\$30,236	7,043
Preschool Teachers, Except Special Education	4,510	\$15.57	\$32,383	7,204
Library Technicians	3,579	\$20.30	\$42,214	210
Computer User Support Specialists	2,016	\$26.79	\$55,711	19,208
Registered Nurses	1,450	\$46.82	\$97,388	57,665
<b>Requires a High School Diploma or Equivalent or Less</b>				
Office Clerks, General	17,173	\$15.55	\$32,360	14,815
Childcare Workers	9,431	\$11.44	\$23,782	2,961
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	9,329	\$12.02	\$24,982	11,932
Combined Food Preparation and Serving Workers, Including Fast Food	9,242	\$9.45	\$19,667	14,047
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	5,792	\$18.37	\$38,189	15,580

Source: California Employment Development Department, Projections of Employment 2012-2022; Occupational Employment Statistics Wage Survey, updated to 1st Q, 2015; The Conference Board Help Wanted OnLine™ (HWOL) Data Series, 120-day period ending June 22, 2015.

<sup>23</sup> Total job openings are the sum of new jobs and replacement job openings.

## Skill Requirements in the Education and Training Cluster

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

Occupations	Skills													
	Active Learning	Active Listening	Coordination	Critical Thinking	Instruction	Judgment and Decision Making	Learning Strategies	Monitoring	Persuasion	Reading Comprehension	Service Orientation	Social Perceptiveness	Speaking	Time Management
<b>Requires a Bachelor's Degree or Higher</b>														
Elementary School Teachers, Except Special Education		•	•	•		•	•	•		•		•	•	•
Secondary School Teachers, Except Special and Career/Technical Education		•		•	•	•	•	•		•		•	•	•
Middle School Teachers, Except Special and Career/Technical Education	•	•		•	•		•	•		•		•	•	•
Educational, Guidance, School, and Vocational Counselors		•		•		•	•			•	•	•	•	•
Kindergarten Teachers, Except Special Education	•	•		•		•	•	•		•		•	•	•
<b>Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree</b>														
Teacher Assistants		•	•	•	•		•	•		•		•	•	•
Preschool Teachers, Except Special Education		•	•	•			•	•		•	•	•	•	•
Library Technicians	•	•	•	•	•			•		•	•		•	•
Computer User Support Specialists	•	•	•	•	•			•		•	•		•	•
Registered Nurses	•	•	•	•			•	•		•	•	•	•	
<b>Requires a High School Diploma or Equivalent or Less</b>														
Office Clerks, General		•	•	•				•		•	•	•	•	•
Childcare Workers	•	•	•	•		•	•	•			•	•	•	
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	•	•	•	•		•				•	•	•	•	•
Combined Food Preparation and Serving Workers, Including Fast Food		•	•	•	•		•		•	•	•	•	•	
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	•	•		•				•		•	•	•	•	•

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

## Work Activities in the Education and Training Cluster

The table below lists the 10 top work activities required for top occupations in the Education and Training cluster, categorized by entry-level education requirements. The most common include communicating with supervisors, peers, or subordinates; establishing and maintaining interpersonal relationships; organizing, planning, and prioritizing work; and updating and using relevant knowledge.

Occupations	Work Activities																			
	Assisting and Caring for Others	Coaching and Developing Others	Communicating with Supervisors, Peers, or Subordinates	Controlling Machines and Processes	Coordinating the Work and Activities of Others	Developing and Building Teams	Developing Objectives and Strategies	Documenting/Recording Information	Establishing and Maintaining Interpersonal Relationships	Getting Information	Handling and Moving Objects	Identifying Objects, Actions, and Events	Inspecting Equipment, Structures, or Material	Interacting With Computers	Interpreting the Meaning of Information for Others	Making Decisions and Solving Problems	Monitor Processes, Materials, or Surroundings	Organizing, Planning, and Prioritizing Work	Performing Administrative Activities	Performing for or Working Directly with the Public
Requires a Bachelor's Degree or Higher																				
Elementary School Teachers, Except Special Education		●	●			●		●							●	●			●	●
Secondary School Teachers, Except Special and Career/Technical Education		●	●					●			●				●	●			●	●
Middle School Teachers, Except Special and Career/Technical Education		●	●	●		●		●						●		●			●	●
Educational, Guidance, School, and Vocational Counselors	●	●	●					●							●	●			●	●
Kindergarten Teachers, Except Special Education		●	●	●	●			●							●	●			●	●
Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree																				
Teacher Assistants	●	●	●					●	●							●	●		●	●
Preschool Teachers, Except Special Education	●		●					●							●	●	●	●	●	
Library Technicians			●				●	●	●	●	●						●	●		●
Computer User Support Specialists			●					●	●	●	●	●	●	●	●	●	●		●	●
Registered Nurses	●		●					●	●	●	●				●	●	●			●
Requires a High School Diploma or Equivalent or Less																				
Office Clerks, General	●		●				●	●	●				●				●		●	●
Childcare Workers	●		●					●		●					●	●	●		●	●
Janitors and Cleaners, Except Maids and Housekeeping Cleaners			●	●				●		●		●			●	●	●	●		
Combined Food Preparation and Serving Workers, Including Fast Food		●	●	●				●	●	●	●						●		●	●
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive			●					●	●		●				●		●	●	●	●

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

## Related Occupations for the Education and Training Cluster

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

Education and Training Occupations	Related Occupations
<b>Requires a Bachelor's Degree or Higher</b>	
Elementary School Teachers, Except Special Education	<ul style="list-style-type: none"> <li>• Preschool Teachers, Except Special Education</li> <li>• Kindergarten Teachers, Except Special Education</li> <li>• Middle School Teachers, Except Special and Career/Technical Education</li> </ul>
Secondary School Teachers, Except Special and Career/Technical Education	<ul style="list-style-type: none"> <li>• Career/Technical Education Teachers, Middle School</li> <li>• Instructional Coordinators</li> <li>• Librarians</li> </ul>
Middle School Teachers, Except Special and Career/Technical Education	<ul style="list-style-type: none"> <li>• Elementary School Teachers, Except Special Education</li> <li>• Adult Basic and Secondary Education and Literacy Teachers and Instructors</li> <li>• Secondary School Teachers, Except Special and Career/Technical Education</li> </ul>
Educational, Guidance, School, and Vocational Counselors	<ul style="list-style-type: none"> <li>• Mental Health Counselors</li> <li>• Marriage and Family Therapists</li> <li>• Social Work Teachers, Postsecondary</li> </ul>
Kindergarten Teachers, Except Special Education	<ul style="list-style-type: none"> <li>• Preschool Teachers, Except Special Education</li> <li>• Elementary School Teachers, Except Special Education</li> <li>• Middle School Teachers, Except Special and Career/Technical Education</li> </ul>
<b>Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree</b>	
Teacher Assistants	<ul style="list-style-type: none"> <li>• Nannies</li> <li>• Social and Human Service Assistants</li> <li>• Personal Care Aides</li> </ul>
Preschool Teachers, Except Special Education	<ul style="list-style-type: none"> <li>• Kindergarten Teachers, Except Special Education</li> <li>• Childcare Workers</li> <li>• Nannies</li> </ul>
Library Technicians	<ul style="list-style-type: none"> <li>• Bookkeeping, Accounting, and Auditing Clerks</li> <li>• Billing, Cost, and Rate Clerks</li> <li>• Teacher Assistants</li> </ul>
Computer User Support Specialists	<ul style="list-style-type: none"> <li>• Web Administrators</li> <li>• Desktop Publishers</li> <li>• Computer Operators</li> </ul>
Registered Nurses	<ul style="list-style-type: none"> <li>• Licensed Practical and Licensed Vocational Nurses</li> <li>• Medical Assistants</li> <li>• Emergency Medical Technicians and Paramedics</li> </ul>
<b>Requires a High School Diploma or Equivalent or Less</b>	
Office Clerks, General	<ul style="list-style-type: none"> <li>• Receptionists and Information Clerks</li> <li>• Bill and Account Collectors</li> <li>• Medical Secretaries</li> </ul>
Childcare Workers	<ul style="list-style-type: none"> <li>• Home Health Aides</li> <li>• Personal Care Aides</li> <li>• Teacher Assistants</li> </ul>
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	<ul style="list-style-type: none"> <li>• Dishwashers</li> <li>• Maids and Housekeeping Cleaners</li> <li>• Food Preparation Workers</li> </ul>
Combined Food Preparation and Serving Workers, Including Fast Food	<ul style="list-style-type: none"> <li>• Cooks, Fast Food</li> <li>• Food Preparation Workers</li> <li>• Food Servers, Nonrestaurant</li> </ul>
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	<ul style="list-style-type: none"> <li>• Office Clerks, General</li> <li>• Receptionists and Information Clerks</li> <li>• Executive Secretaries and Executive Administrative Assistants</li> </ul>

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

## Employer Demand for the Education and Training Cluster

The following table lists the California employers in the Education and Training cluster who posted the most job advertisements during the 120-day period ending June 22, 2015. The table also includes the number of job advertisements from the previous year's period, as well as the numerical change and year-over percent change in these postings for the same 120-day period.

Education and Training Cluster Employers	Recent Job Advertisements <sup>24</sup> (120-day period)	Prior Year Job Advertisements (120-day period)	Numerical Change	Year-Over Percent Change (HWOL Job Advertisements)
University of California - San Diego	2,211	1,307	904	69.2%
University of Southern California	1,567	187	1,380	738.0%
University of California - San Francisco	1,553	701	852	121.5%
University Of California, Berkeley	1,257	1,158	99	8.5%
California State University System	1,249	887	362	40.8%
Stanford University	1,239	1,019	220	21.6%
University Of California, Irvine	773	463	310	67.0%
University of California, Riverside	562	507	55	10.8%
University of California, Davis	553	107	446	416.8%
San Juan Unified School District	498	303	195	64.4%
Visalia Unified School District	451	335	116	34.6%
University of California, Santa Cruz	402	233	169	72.5%
UC Davis Health System	372	209	163	78.0%
Oakland Unified School District	359	313	46	14.7%
Irvine Unified School District	357	227	130	57.3%
Santa Rosa City Schools	357	280	77	27.5%
San Ramon Valley Unified	337	324	13	4.0%
Clovis Unified School District	336	284	52	18.3%
Twin Rivers Unified School District	330	279	51	18.3%
Kaplan University	321	0	321	--

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

<sup>24</sup> Totals do not include employers with anonymous job advertisements.

## Instructional Programs for the Top Education and Training Cluster Occupations

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

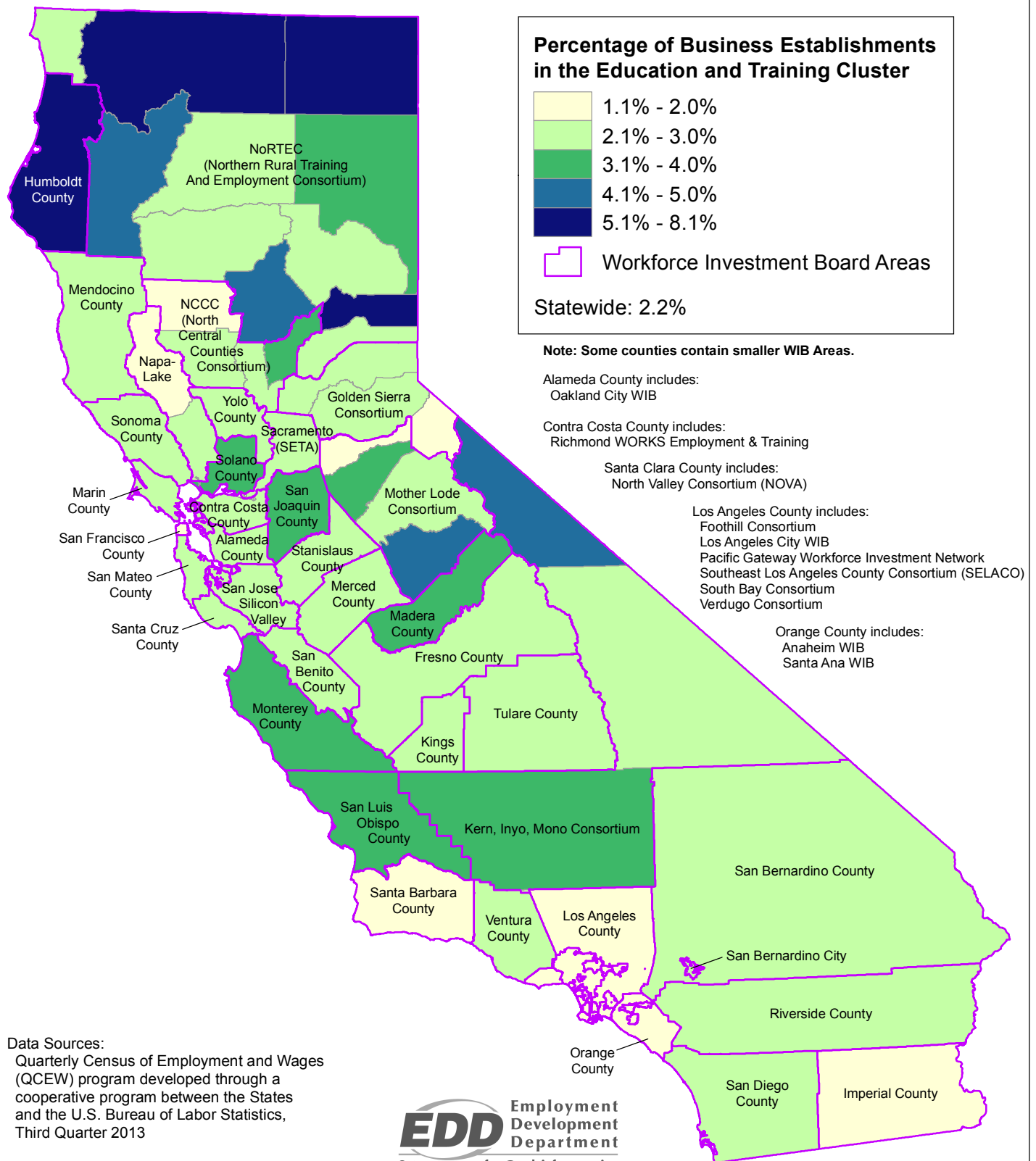
Occupations	Classification of Instructional Program (CIP)		Taxonomy of Programs (TOP)	
	CIP Code	CIP Title	TOP Code	TOP Title
Childcare Workers	19.0709	Child Care Provider/Assistant	130500	Child Development/Early Care and Education
			130540	Preschool Age Child
			130590	Infants and Toddlers
Library Technician	25.0301	Library and Archives Assisting	160200	Library Technician (Aide)
Office Clerks, General	52.0408	General Office Occupations and Clerical Services	N/A	N/A
Registered Nurses	51.3814	Critical Care Nursing	123010	Registered Nursing
	51.3818	Nursing Practice	123000	Nursing
	52.0401	Administrative Assistant and Secretarial Science, General		
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	52.0402	Executive Assistant/Executive Secretary	N/A	N/A
	13.1501	Teacher Assistant/Aide		
Teacher Assistants	13.1501	Teacher Assistant/Aide	080200	Education Aide (Teacher Assistant)
			080210	Education Aide (Teacher Assistant), Bilingual

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



# California Education and Training Cluster

Percentage of Total County Establishments, 2013



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

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

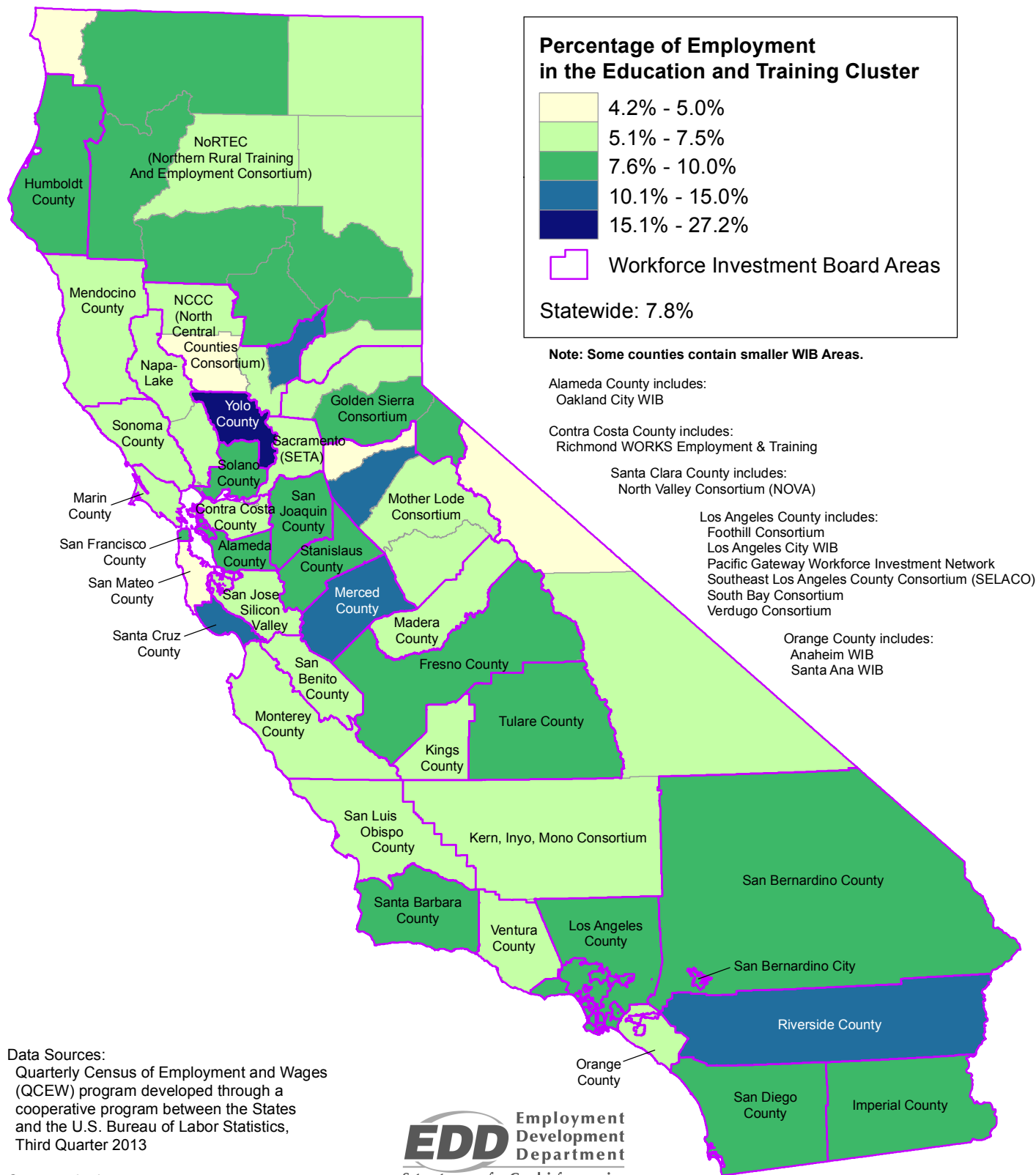
**EDD** Employment Development Department  
State of California

**LaborMarketInfo**

File T036

# California Education and Training Cluster

Percentage of Total County Employment, 2013



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

Cartography by:  
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**EDD** Employment Development Department  
State of California

**LaborMarketInfo**

File T036



# Occupational Analysis: Professional and Technical Services Cluster

California

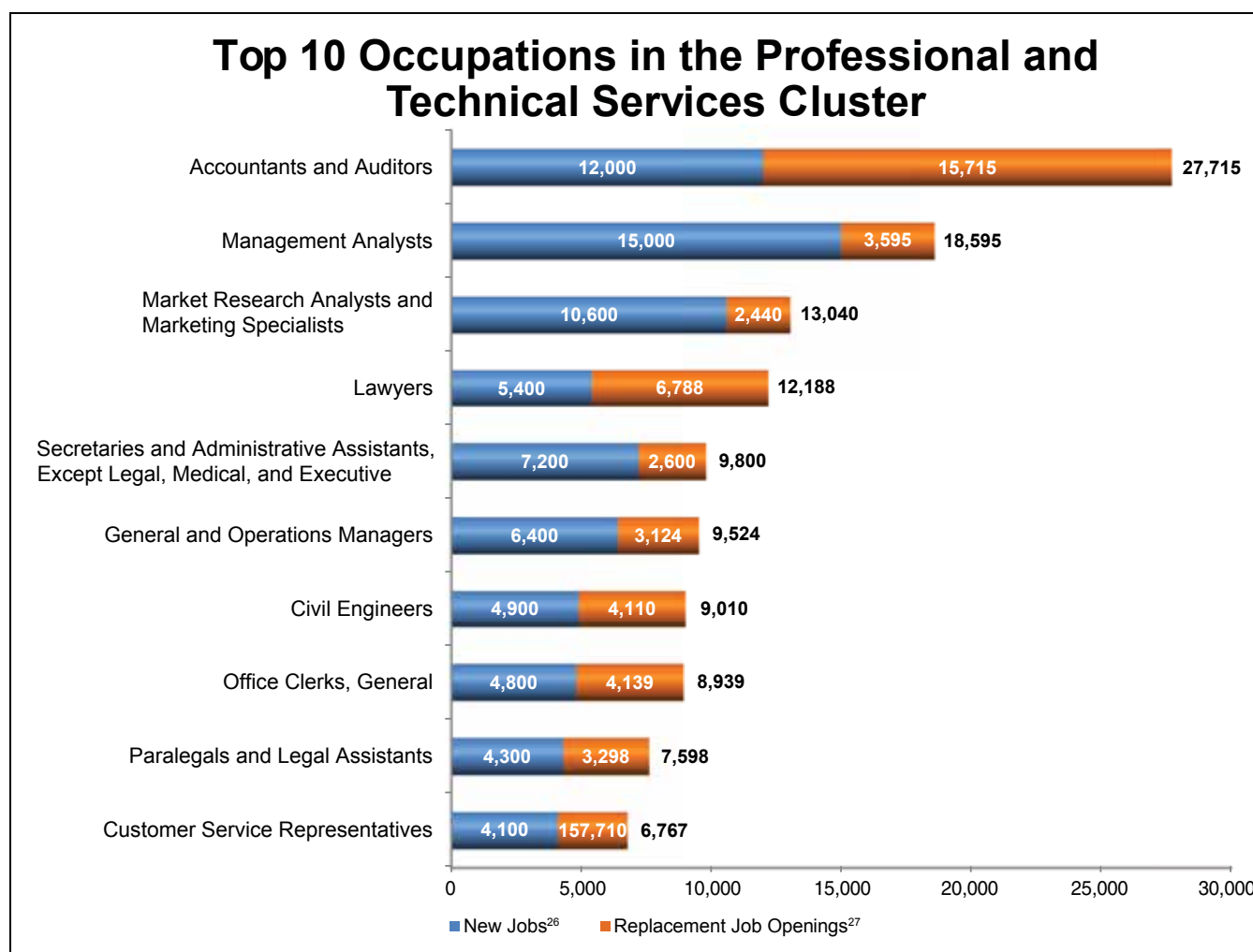
July 2015

## What is the Professional and Technical Services Cluster?

The Professional and Technical Services cluster is a diverse group of seven industries. They comprise engineering and architectural firms, law offices, advertising and public relations agencies, and accounting firms. Other activities in this industry cluster include tax preparation and payroll services, environmental consulting, building inspection, and landscape design. The workers employed within this cluster span all skill levels and share skills and work activities both within the cluster and in many other industry clusters, suggesting the potential for skills transference and upward mobility with additional training.

## Top 10 Occupations in the Professional and Technical Services Cluster

The graph below identifies the top 10 occupations in the Professional and Technical Services cluster, based on California's new job growth plus replacement openings. In sum, these 10 occupations represent more than one-third of the 350,483 total job openings projected in this cluster between 2012 and 2022. Moreover, many share the same required skills such as critical thinking, reading comprehension, active listening, speaking, writing, and monitoring.<sup>25</sup>



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

<sup>25</sup> U.S. Department of Labor's [Occupational Information Network \(O\\*NET\)](http://www.onetonline.org) at [www.onetonline.org](http://www.onetonline.org).

<sup>26</sup> New jobs are only openings due to growth and do not include job declines. If an occupation's employment change is negative, there is no job growth and new jobs are set to zero.

<sup>27</sup> Replacement job openings estimate the number of job openings created when workers retire or permanently leave an occupation and need to be replaced.

## Top 10 Occupations and Recent Job Demand in the Professional and Technical Services Cluster

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

Occupations	Total Job Openings <sup>28</sup> (2012-2022)	Median Hourly Wage (2014)	Median Annual Wage (2014)	Entry Level Education <sup>29</sup>	HWOL Job Ads <sup>30</sup> (120 days)
Accountants and Auditors	27,715	\$35.11	\$73,006	Bachelor's degree	25,324
Management Analysts	18,595	\$41.34	\$85,987	Bachelor's degree	14,533
Market Research Analysts and Marketing Specialists	13,040	\$34.18	\$71,092	Bachelor's degree	10,400
Lawyers	12,188	\$69.87	\$145,333	Doctoral or professional degree	7,755
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	9,800	\$18.37	\$38,189	High school diploma or equivalent	15,580
General and Operations Managers	9,524	\$51.95	\$108,050	Bachelor's degree	9,237
Civil Engineers	9,010	\$47.63	\$99,071	Bachelor's degree	3,915
Office Clerks, General	8,939	\$15.55	\$32,360	High school diploma or equivalent	14,815
Paralegals and Legal Assistants	7,598	\$28.01	\$58,261	Associate's degree	4,667
Customer Service Representatives	6,767	\$18.14	\$37,713	High school diploma or equivalent	29,252

Source: California Employment Development Department, *Projections of Employment 2012-2022*; *Occupational Employment Statistics Wage Survey*, updated to 1st Q, 2015; The Conference Board Help Wanted OnLine™ (HWOL) Data Series, 120-day period ending June 22, 2015.

<sup>28</sup> Total job openings are the sum of new jobs and replacement job openings.

<sup>29</sup> U.S. Department of Labor, Bureau of Labor Statistics (BLS) 2012 education levels.

<sup>30</sup> Totals represent job advertisements from employers in all industries. One job opening may be represented in more than one job advertisement.

## Top Occupations for the Professional and Technical Services Cluster by Education Level

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

Occupations	Total Job Openings <sup>31</sup> (2012-2022)	Median Hourly Wage (2014)	Median Annual Wage (2014)	HWOL Job Ads (120 days)
<b>Requires a Bachelor's Degree or Higher</b>				
Accountants and Auditors	27,715	\$35.11	\$73,006	25,324
Management Analysts	18,595	\$41.34	\$85,987	14,533
Market Research Analysts and Marketing Specialists	13,040	\$34.18	\$71,092	10,400
Lawyers	12,188	\$69.87	\$145,333	7,755
General and Operations Managers	9,524	\$51.95	\$108,050	9,237
<b>Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree</b>				
Paralegals and Legal Assistants	7,598	\$28.01	\$58,261	4,667
Computer User Support Specialists	2,749	\$26.79	\$55,711	19,208
Veterinary Technologists and Technicians	2,492	\$17.66	\$36,731	1,149
Environmental Science and Protection Technicians, Including Health	1,468	\$22.89	\$47,615	1,699
Architectural and Civil Drafters	1,451	\$27.88	\$57,983	1,547
<b>Requires a High School Diploma or Equivalent or Less</b>				
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	9,800	\$18.37	\$38,189	15,580
Office Clerks, General	8,939	\$15.55	\$32,360	14,815
Customer Service Representatives	6,767	\$18.14	\$37,713	29,252
First-Line Supervisors of Office and Administrative Support Workers	6,132	\$27.40	\$56,989	25,059
Bookkeeping, Accounting, and Auditing Clerks	5,475	\$20.09	\$41,786	21,309

Source: California Employment Development Department, Projections of Employment 2012-2022; Occupational Employment Statistics Wage Survey, updated to 1st Q, 2015; The Conference Board Help Wanted OnLine™ (HWOL) Data Series, 120-day period ending June 22, 2015.

<sup>31</sup> Total job openings are the sum of new jobs and replacement job openings.

## Skill Requirements in the Professional and Technical Services Cluster

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

Occupations	Skills																						
	Active Learning	Active Listening	Complex Problem Solving	Coordination	Critical Thinking	Instructing	Judgment and Decision Making	Learning Strategies	Management of Personnel Resources	Mathematics	Monitoring	Negotiation	Operations Analysis	Persuasion	Reading Comprehension	Science	Service Orientation	Social Perceptiveness	Speaking	Systems Analysis	Systems Evaluation	Time Management	Writing
Requires a Bachelor's Degree or Higher																							
Accountants and Auditors <sup>32</sup>	●	●			●		●			●	●				●				●	●			●
Management Analysts	●	●			●		●						●		●				●	●	●		●
Market Research Analysts and Marketing Specialists	●	●			●		●				●				●				●	●	●		●
Lawyers	●	●	●		●		●					●		●	●				●				●
General and Operations Managers	●	●		●	●				●		●				●			●	●				●
Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree																							
Paralegals and Legal Assistants	●	●		●	●						●				●			●	●			●	●
Computer User Support Specialists	●	●		●	●	●					●				●		●		●				●
Veterinary Technologists and Technicians	●	●		●	●			●			●				●		●	●	●				
Environmental Science and Protection Technicians, Including Health		●		●	●					●	●				●	●		●	●				●
Architectural and Civil Drafters <sup>33</sup>	●		●	●	●		●			●	●				●				●	●			
Requires a High School Diploma or Equivalent or Less																							
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	●	●			●						●				●		●	●	●			●	●
Office Clerks, General		●		●	●						●				●		●	●	●			●	●
Customer Service Representatives		●		●	●						●			●	●		●	●	●				●
First-Line Supervisors of Office and Administrative Support Workers		●		●	●			●			●				●			●	●			●	●
Bookkeeping, Accounting, and Auditing Clerks	●	●			●					●	●				●			●	●			●	●

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

<sup>32</sup> Skills listed represent Accountants, a specialty occupation of Accountants and Auditors.

<sup>33</sup> Skills listed represent Architectural Drafters, a specialty occupation of Architectural and Civil Drafters.



## Work Activities in the Professional and Technical Services Cluster

The table below lists the 10 top work activities required for top occupations in the Professional and Technical Services cluster, categorized by entry-level education requirements. The most common include organizing, planning, and prioritizing work; updating and using relevant knowledge; making decisions and solving problems; and communicating with supervisors, peers, or subordinates.

Occupations	Work Activities																										
	Analyzing Data or Information	Assisting and Caring for Others	Coaching and Developing Others	Communicating with Persons Outside Organization	Communicating with Supervisors, Peers, or Subordinates	Coordinating the Work and Activities of Others	Documenting/Recording Information	Drafting, Laying Out, and Specifying Technical Devices, Parts, and Equipment	Establishing and Maintaining Interpersonal Relationships	Evaluating Information to Determine Compliance with Standards	Getting Information	Guiding, Directing, and Motivating Subordinates	Handling and Moving Objects	Identifying Objects, Actions, and Events	Interacting With Computers	Making Decisions and Solving Problems	Monitor Processes, Materials, or Surroundings	Monitoring and Controlling Resources	Organizing, Planning, and Prioritizing Work	Performing Administrative Activities	Performing for or Working Directly with the Public	Performing General Physical Activities	Processing Information	Resolving Conflicts and Negotiating with Others	Scheduling Work and Activities	Thinking Creatively	Updating and Using Relevant Knowledge
Requires a Bachelor’s Degree or Higher																											
Accountants and Auditors <sup>34</sup>	●				●				●	●	●					●			●	●			●				●
Management Analysts	●				●				●		●					●	●		●				●	●			●
Market Research Analysts and Marketing Specialists	●			●	●				●		●			●		●			●				●				●
Lawyers	●			●					●	●	●					●			●				●	●			●
General and Operations Managers				●	●	●			●							●	●	●						●	●	●	
Requires Some College, Postsecondary Non-Degree Award, or Associate’s Degree																											
Paralegals and Legal Assistants	●			●	●		●		●	●	●								●				●				●
Computer User Support Specialists					●				●		●			●	●	●			●				●			●	●
Veterinary Technologists and Technicians		●		●							●		●	●			●		●		●		●				●
Environmental Science and Protection Technicians, Including Health							●			●	●		●	●			●		●			●	●				●
Architectural and Civil Drafters <sup>35</sup>					●		●	●	●	●				●		●			●							●	●
Requires a High School Diploma or Equivalent or Less																											
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive					●				●		●			●		●			●	●	●		●				●
Office Clerks, General		●			●		●		●		●				●				●				●		●		●
Customer Service Representatives				●	●				●		●			●		●			●				●	●			●
First-Line Supervisors of Office and Administrative Support Workers			●	●	●	●			●		●	●							●					●			●
Bookkeeping, Accounting, and Auditing Clerks					●		●		●		●			●			●	●	●				●				●

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

<sup>34</sup> Work Activities listed represent Accountants, a specialty occupation of Accountants and Auditors.

<sup>35</sup> Work Activities listed represent Architectural Drafters, a specialty occupation of Architectural and Civil Drafters.

## Related Occupations for the Professional and Technical Services Cluster

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

Professional and Technical Services Occupations	Related Occupations
<b>Requires a Bachelor's Degree or Higher</b>	
Accountants and Auditors	<ul style="list-style-type: none"> <li>Financial Analysts</li> <li>Risk Management Specialists</li> <li>Bookkeeping, Accounting, and Auditing Clerks</li> </ul>
Management Analysts	<ul style="list-style-type: none"> <li>Training and Development Specialists</li> <li>Market Research Analysts and Marketing Specialists</li> <li>Training and Development Managers</li> </ul>
Market Research Analysts and Marketing Specialists	<ul style="list-style-type: none"> <li>Management Analysts</li> <li>Marketing Managers</li> <li>Advertising and Promotions Managers</li> </ul>
Lawyers	<ul style="list-style-type: none"> <li>Judicial Law Clerks</li> <li>Arbitrators, Mediators, and Conciliators</li> <li>Judges, Magistrate Judges, and Magistrates</li> </ul>
General and Operations Managers	<ul style="list-style-type: none"> <li>Administrative Services Managers</li> <li>Logistics Managers</li> <li>First-Line Supervisors of Office and Administrative Support Workers</li> </ul>
<b>Requires Some College, Postsecondary Non-Degree Award, or Associate's Degree</b>	
Paralegals and Legal Assistants	<ul style="list-style-type: none"> <li>Legal Secretaries</li> <li>Executive Secretaries and Executive Administrative Assistants</li> <li>Municipal Clerks</li> </ul>
Computer User Support Specialists	<ul style="list-style-type: none"> <li>Web Administrators</li> <li>Computer, Automated Teller, and Office Machine Repairers</li> <li>Computer Operators</li> </ul>
Veterinary Technologists and Technicians	<ul style="list-style-type: none"> <li>Veterinary Assistants and Laboratory Animal Caretakers</li> <li>Surgical Technologists</li> <li>Medical Assistants</li> </ul>
Environmental Science and Protection Technicians, Including Health	<ul style="list-style-type: none"> <li>Environmental Compliance Inspectors</li> <li>Environmental Scientists and Specialists, Including Health</li> <li>Environmental Engineering Technicians</li> </ul>
Architectural and Civil Drafters	<ul style="list-style-type: none"> <li>Civil Drafters</li> <li>Electrical Drafters</li> <li>Mechanical Drafters</li> </ul>
<b>Requires a High School Diploma or Equivalent or Less</b>	
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	<ul style="list-style-type: none"> <li>Office Clerks, General</li> <li>Receptionists and Information Clerks</li> <li>Executive Secretaries and Executive Administrative Assistants</li> </ul>
Office Clerks, General	<ul style="list-style-type: none"> <li>Receptionists and Information Clerks</li> <li>Bill and Account Collectors</li> <li>Medical Secretaries</li> </ul>
Customer Service Representatives	<ul style="list-style-type: none"> <li>Bill and Account Collectors</li> <li>Medical Records and Health Information Technicians</li> <li>Receptionists and Information Clerks</li> </ul>
First-Line Supervisors of Office and Administrative Support Workers	<ul style="list-style-type: none"> <li>General and Operations Managers</li> <li>Administrative Services Managers</li> <li>Human Resources Managers</li> </ul>
Bookkeeping, Accounting, and Auditing Clerks	<ul style="list-style-type: none"> <li>Brokerage Clerks</li> <li>Municipal Clerks</li> <li>Payroll and Timekeeping Clerks</li> </ul>

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

## Employer Demand for the Professional and Technical Services Cluster

The following table lists California employers in the Professional and Technical Services cluster who posted the most job advertisements during the 120-day period ending June 22, 2015. The table also includes the number of job advertisements from the previous year's period, as well as the numerical change and year-over percent change in these postings for the same 120-day period.

Professional and Technical Cluster Employers	Recent Job Advertisements <sup>36</sup> (120-day period)	Prior Year Job Advertisements (120-day period)	Numerical Change	Year-Over Percent Change (HWOL Job Advertisements)
Accenture	6,926	634	6,292	992.4%
Deloitte	1,960	934	1,026	109.9%
Robert Half International	1,929	1,694	235	13.9%
Cisco	1,151	464	687	148.1%
PricewaterhouseCoopers	826	1,013	-187	-18.5%
KPMG	730	843	-113	-13.4%
Emc Corporation	629	471	158	33.5%
AECOM	520	335	185	55.2%
C&A Industries	479	0	479	—
Reflectx Staffing	475	317	158	49.8%
Macy's	454	352	102	29.0%
The Walt Disney Company	440	172	268	155.8%
The Creative Group	439	380	59	15.5%
Belcan	404	115	289	251.3%
URS Corporation	389	542	-153	-28.2%
Consultnet, LLC	386	192	194	101.0%
CTG - Computer Task Group	373	2	371	18,550.0%
Parsons Corporation	309	255	54	21.2%
Barton Associates, Inc.	292	13	279	2,146.2%
Banfield, The Pet Hospital	268	362	-94	-26.0%

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

<sup>36</sup> Totals do not include employers with anonymous job advertisements.

## Instructional Programs for the Top Professional and Technical Cluster Occupations

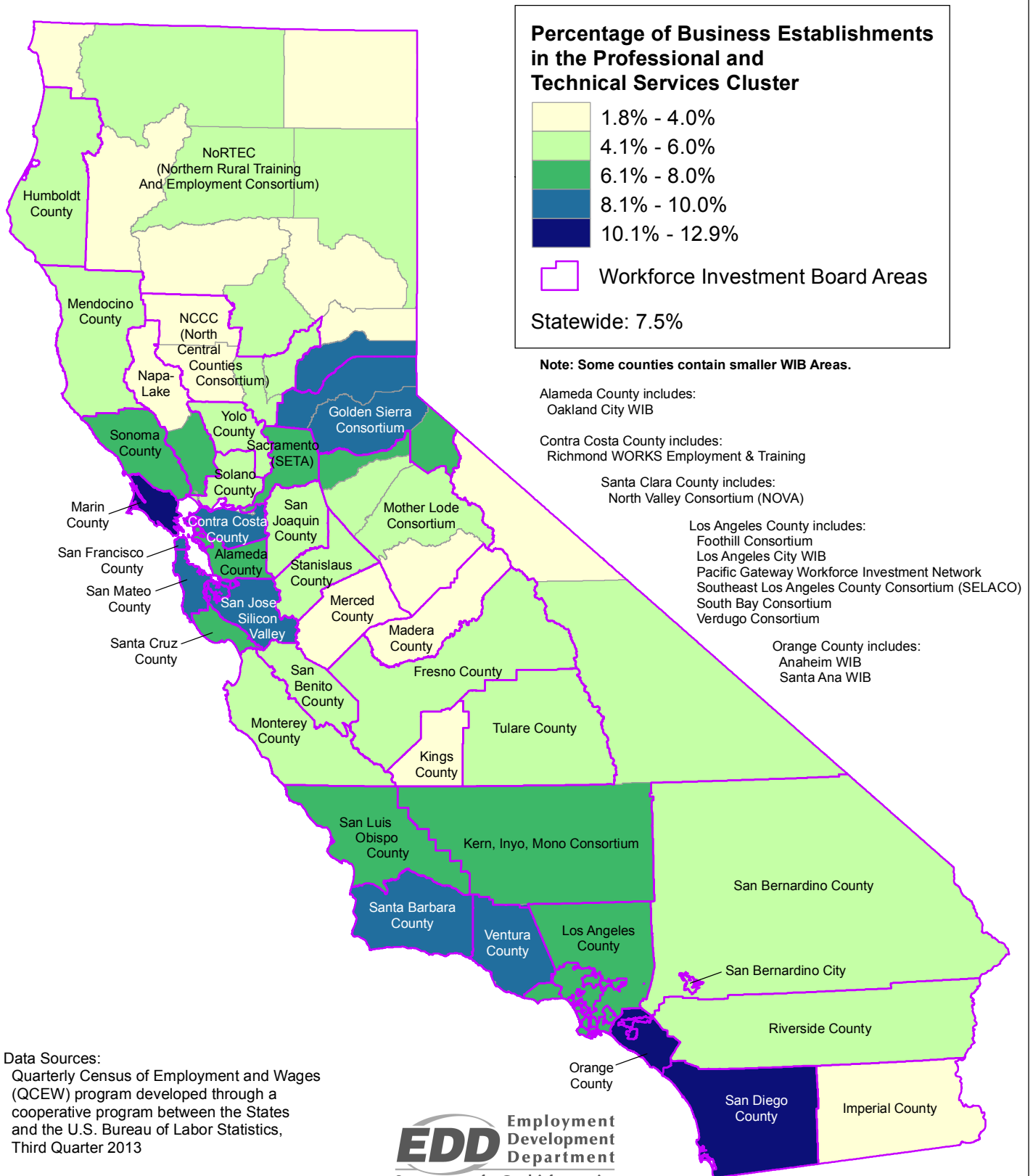
The table below provides examples of instructional programs related to some of the top occupations in the Professional and Technical Services cluster, particularly those that require less than a bachelor's degree. These programs train individuals for occupations throughout many industries and are not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

Occupations	Classification of Instructional Program (CIP)		Taxonomy of Programs (TOP)	
	CIP Code	CIP Title	TOP Code	TOP Title
Architectural and Civil Drafters	15.1301	Drafting and Design Technology/Technician, General	020100	Architecture and Architectural Technology
	15.1303	Architectural Drafting and Architectural CAD/CADD	095300	Drafting Technology
	15.1304	Civil Drafting and Civil Engineering CAD/CADD	095320	Civil Drafting
Bookkeeping, Accounting, and Auditing Clerks	52.0302	Accounting Technology/Technician and Bookkeeping	050200	Accounting
Customer Service Representatives	52.0406	Receptionist	051800	Customer Service
	52.0411	Customer Service Support/Call Center/Teleservice Operation		
Environmental Science and Protection Technicians, Including Health	41.9999	Science Technologies/Technicians, Other	09347 192000	Electron Microscopy Ocean Technology
First-Line Supervisors of Office and Administrative Support Workers	51.0705	Medical Office Management/Administration	051440	Office Management
	52.0204	Office Management and Supervision	050630	Management Development and Supervision
	52.0207	Customer Service Management	070910	E-Commerce (technology emphasis)
Office Clerks, General	52.0408	General Office Occupations and Clerical Services	N/A	N/A
Paralegals and Legal Assistants	22.0302	Legal Assistant/Paralegal	140200	Paralegal
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	52.0401	Administrative Assistant and Secretarial Science, General	051400	Office Technology/Office Computer Applications
	52.0402	Executive Assistant/Executive Secretary		
Veterinary Technologists and Technicians	51.0808	Veterinary/Animal Health Technology/Technician and Veterinary Assistant	010210	Veterinary Technician (Licensed)

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

# California Professional and Technical Services Cluster

## Percentage of Total County Establishments, 2013



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

Cartography by:  
Labor Market Information Division  
California Employment Development Department  
<http://www.labormarketinfo.edd.ca.gov>  
March 2015

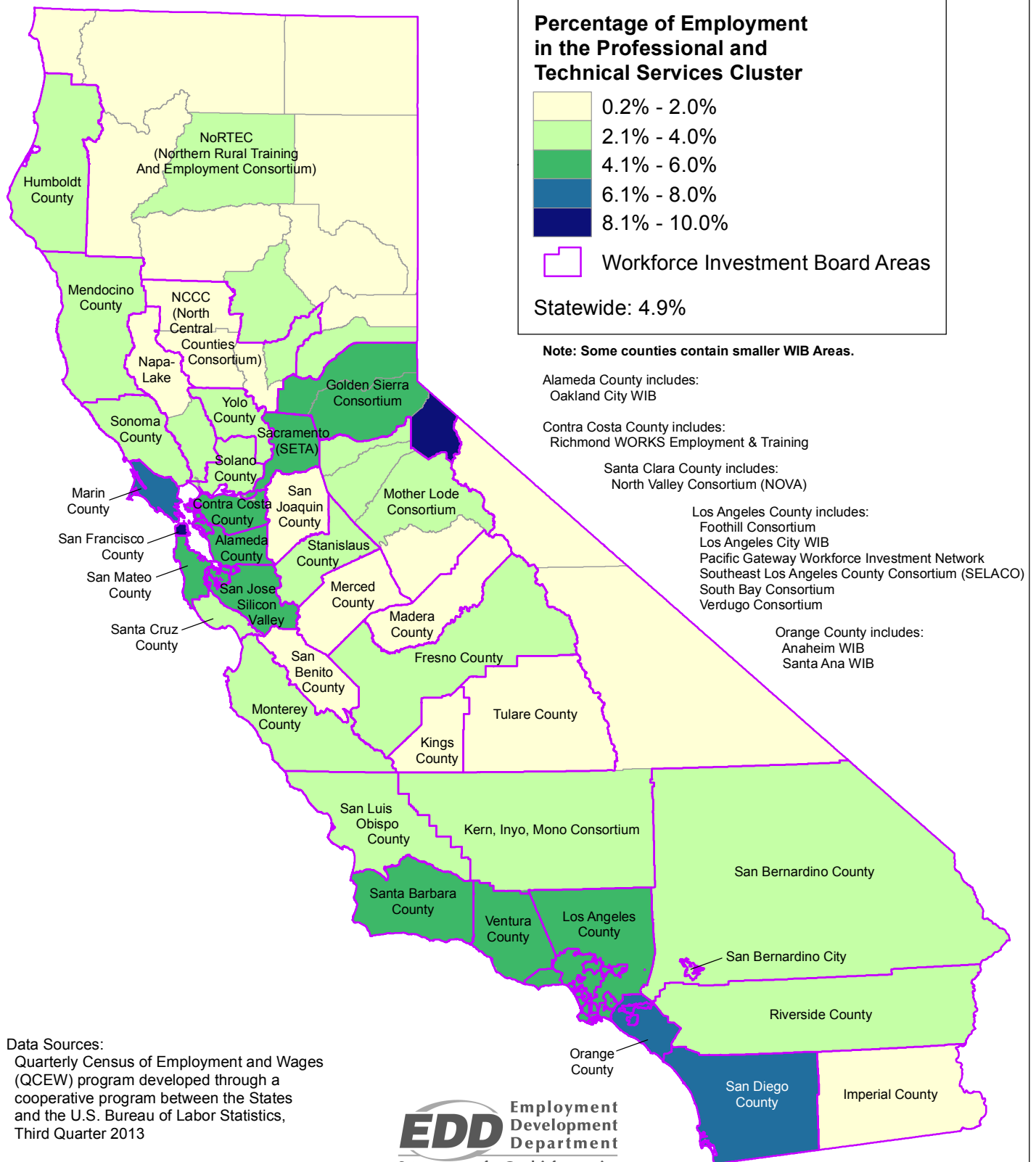
**EDD** Employment Development Department  
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File T036

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