

Overview of California's Industry and Occupational Projections

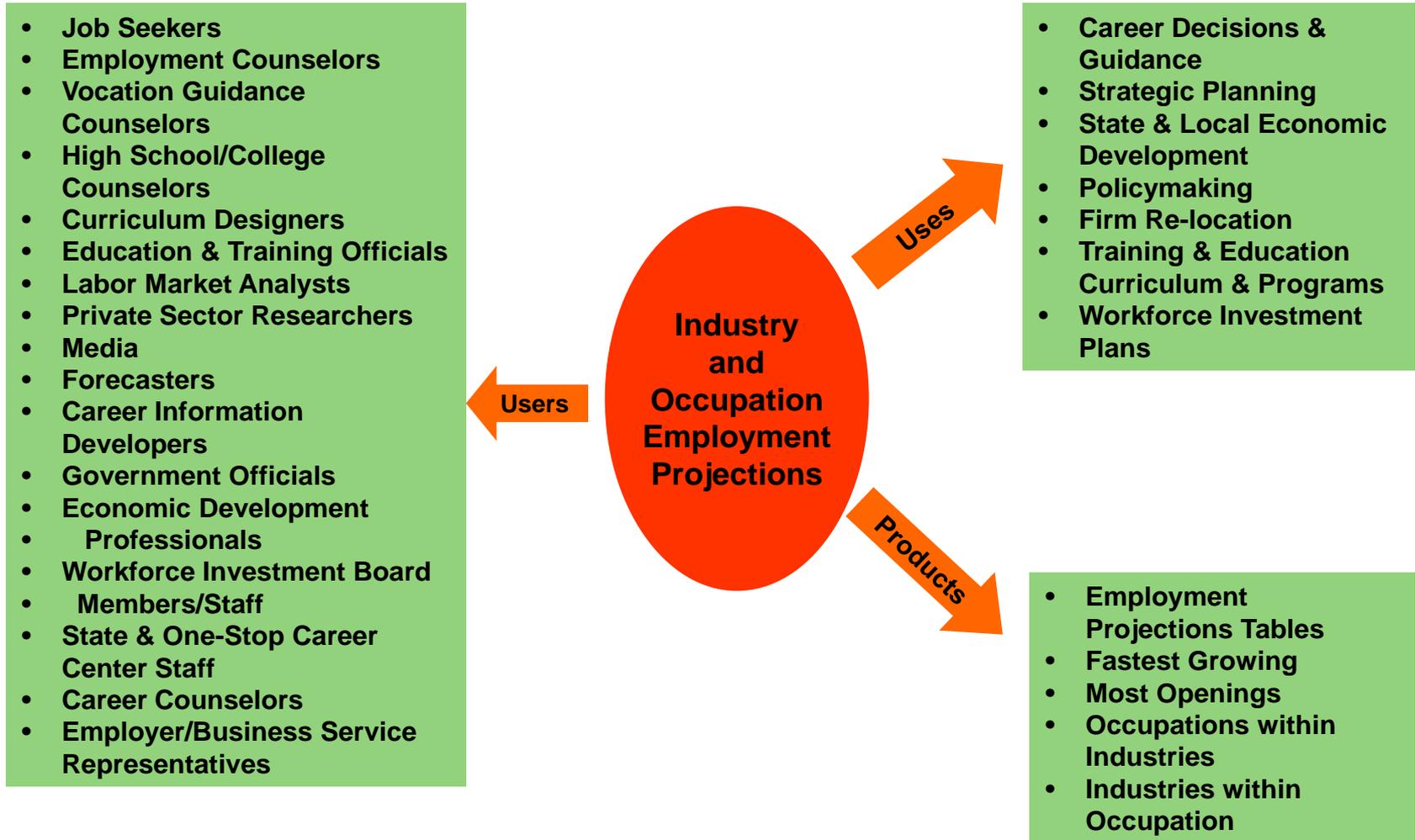
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Projections Overview

- Produced by the States in partnership with the Employment and Training Administration and the Bureau of Labor Statistics (BLS)
- Methods, software consistent across the nation
- Industry and occupational employment projected
- Short-term (2-year) projections for the State on an annual basis
- Long-term (10-year) projections for the State and sub-state areas every two years

Uses of Employment Projections





Industry Data Sources

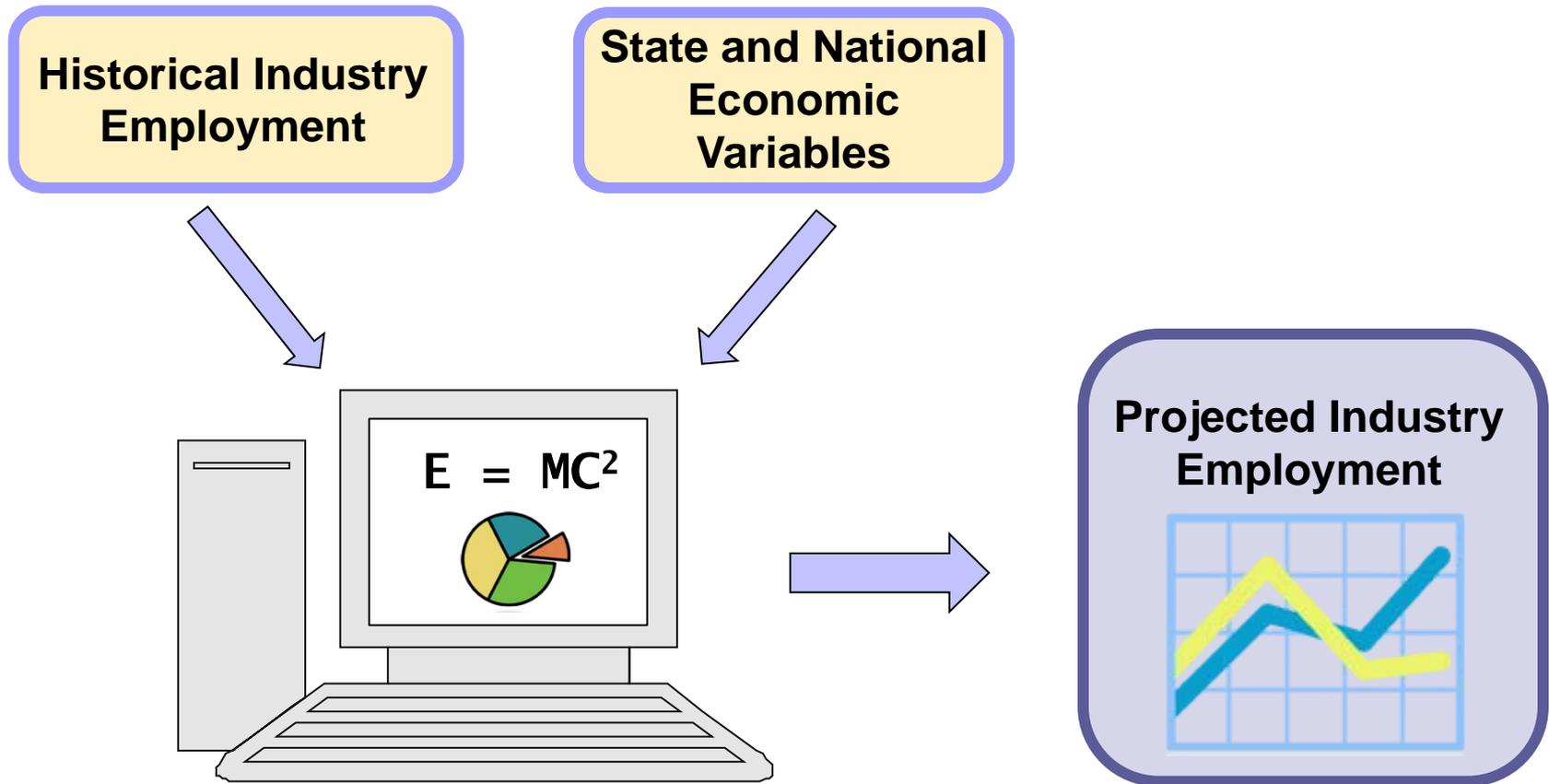
- Current Employment Statistics (CES)
- Quarterly Census of Employment and Wages (QCEW)
- Independent Variables – Personal Income, Population, New Homes Permitted, Education Enrollment, Births, Unemployment Rate
- Bureau of Labor Statistics (BLS) National Projections

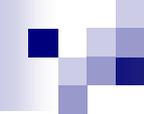


Assumptions

- The institutional framework of the US economy will not change drastically
- Attitudes towards work, education, income, and leisure will not change significantly
- No major events (natural disaster, war, etc.) will occur that will significantly alter the economy
- Recent technological and scientific trends will continue

Industry Projections Process





Industry Projections Models

The Long-Term Projections module offers three groups of models:

- Shift Share Models
- Time Series Models
- Ordinary Least Squares (OLS) Regression Models

Analysts use the models to create unique forecast values for each of the 3 and 4-digit industry cells that are imported into the Projections Suite Software.

Choosing a Projected Value

Various Models can produce many sets of projected values with significantly different results

- Evaluate the model statistics (r-squared, t-stats, growth rate, etc.) to identify how well the model fits with the historical data.
- Make sure the system's computed value aligns with outside sources such as news articles, other economic forecasts, and National projections.
- Does the projected value look attainable when graphed?

Analyst Input

From the Projecting State and Area Industry Employment guide written by Harvey Goldstein:

- “A strictly mechanical approach to developing projections most likely will lead to less than acceptable levels of projection accuracy.”
- “It follows that in adopting a more analytical approach to developing projections, the insight and experience of the LMI analysts themselves become the agency's most valued resource and most critical input in the entire projections process.”

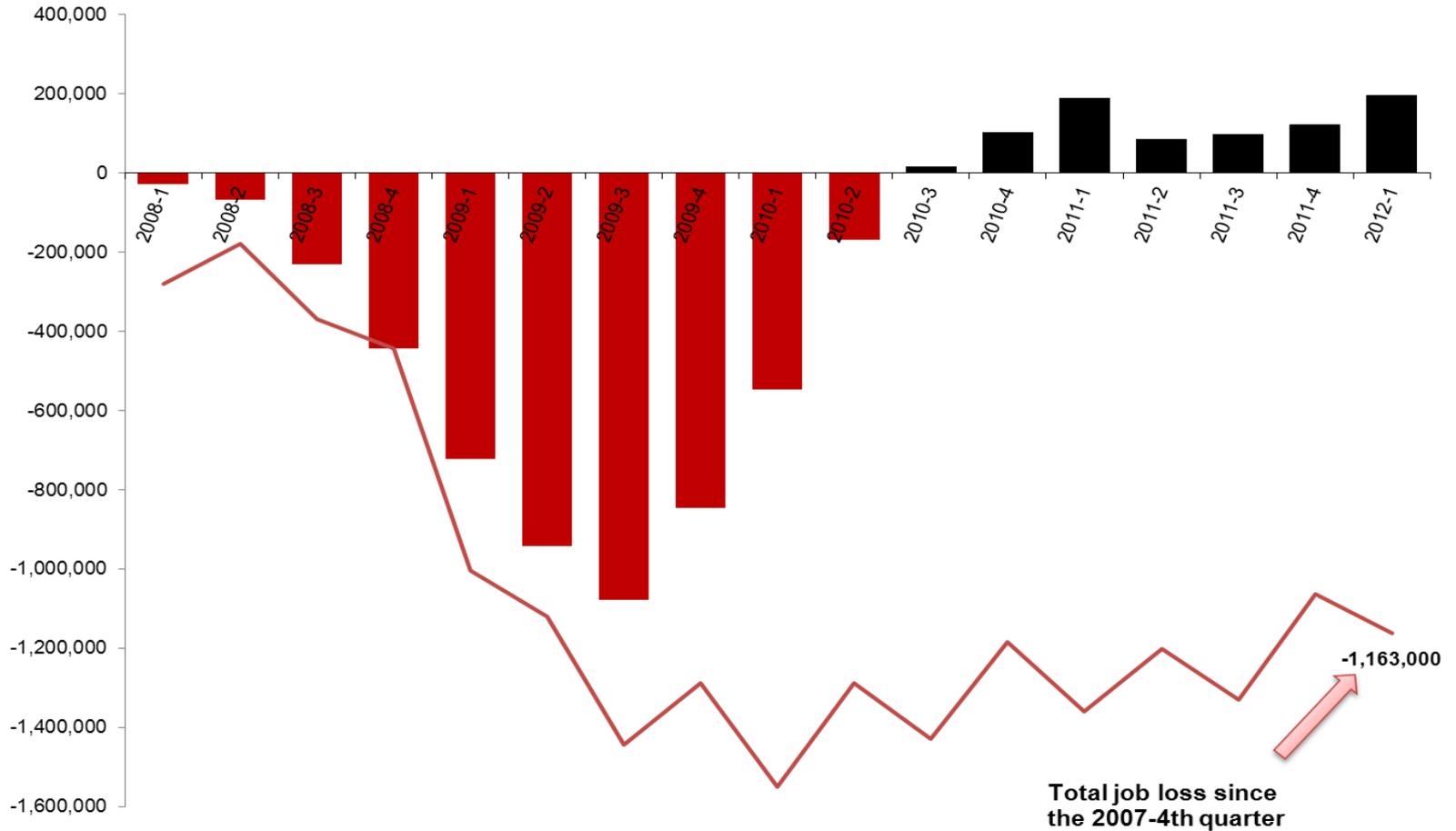


Short-term Industry Projections

**CALIFORNIA 2011 3RD QUARTER-
2013 3RD QUARTER**

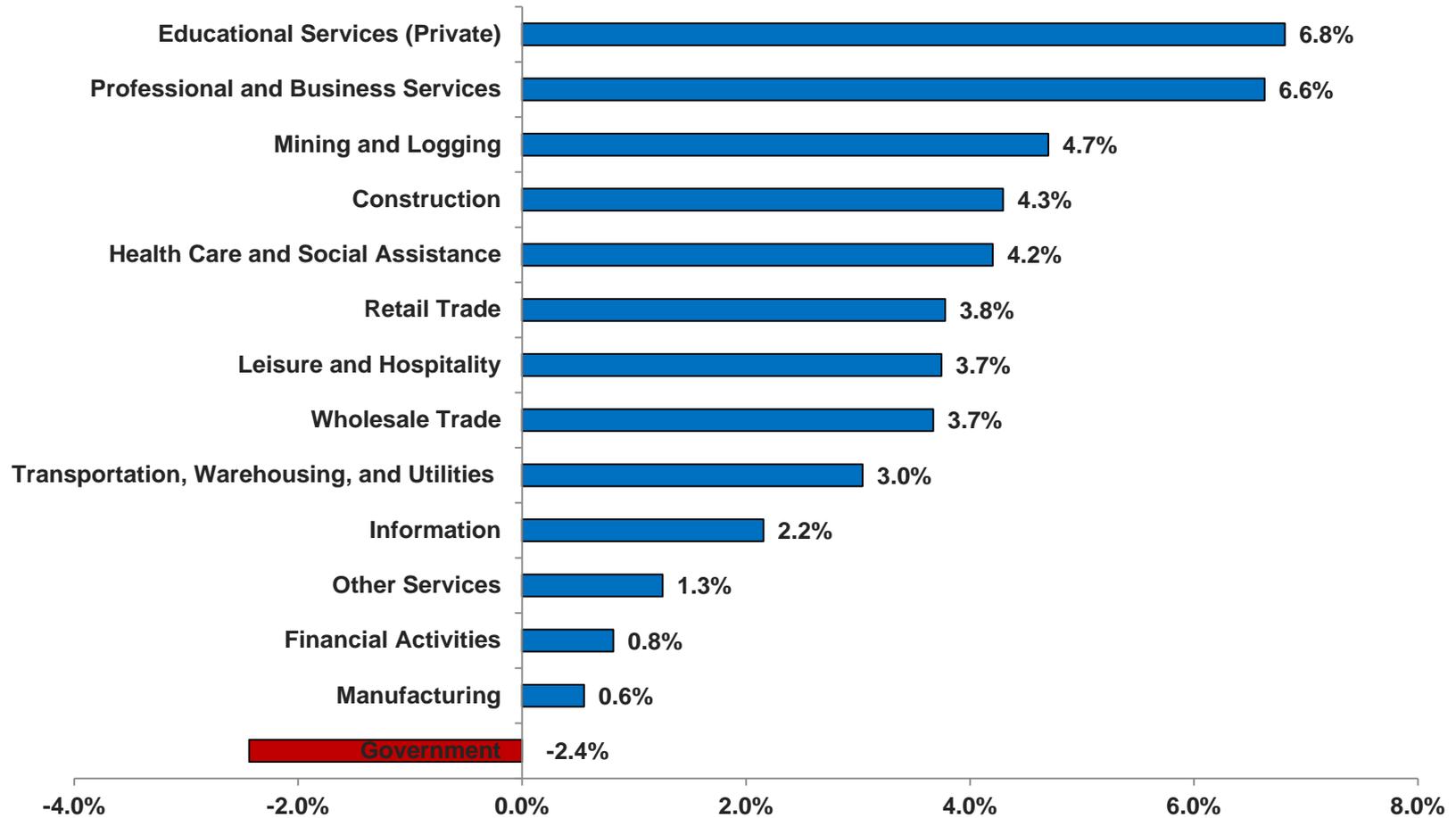
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**California Quarterly Total Nonfarm Employment
Year-Over Change and Total Job Loss
(2008 1st Quarter - 2012 1st Quarter)**



Source: California Employment Development Department

California Short-term Industry Projections 2011 3rd Quarter – 2013 3rd Quarter Industry Sector Growth Rate



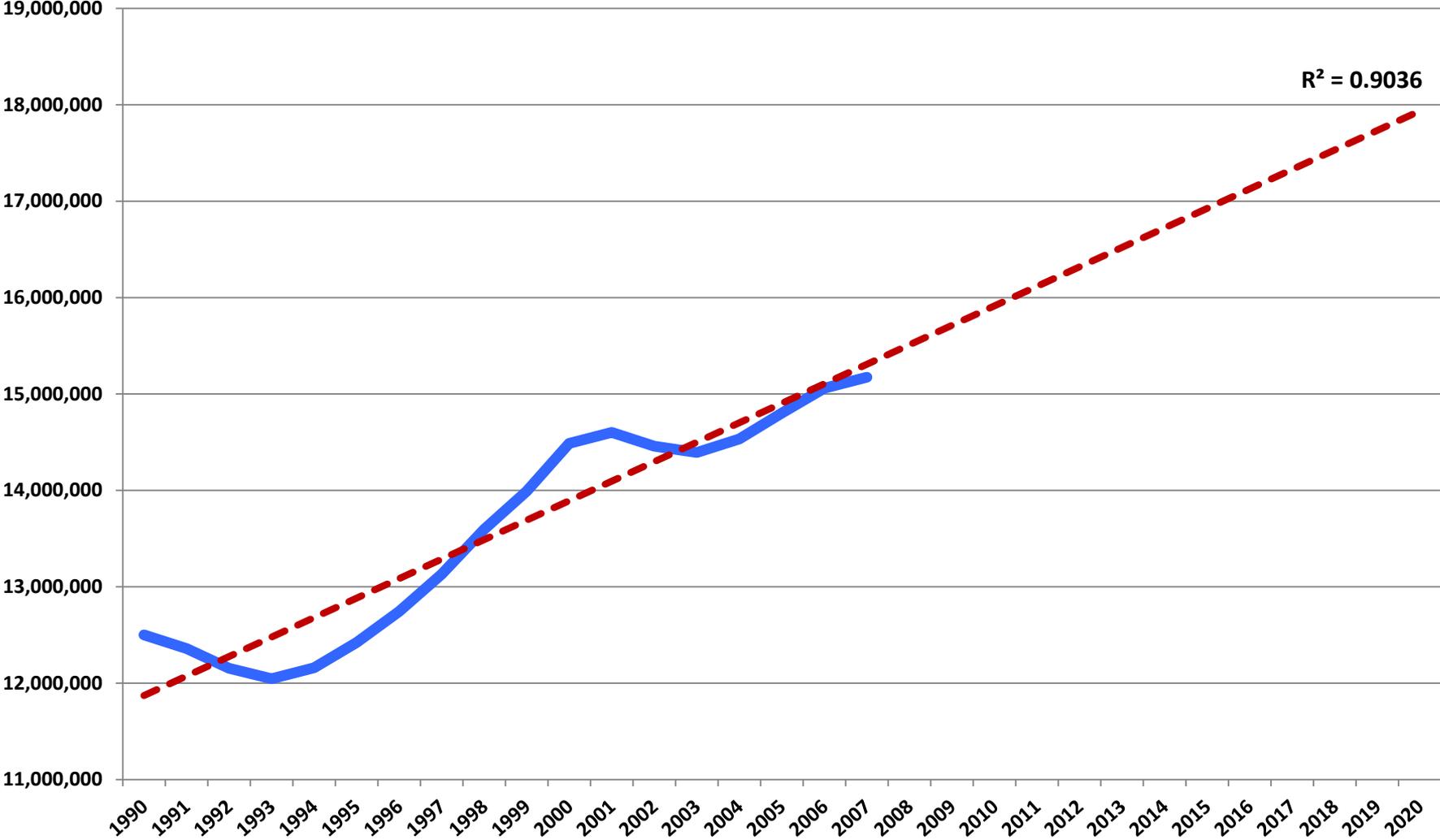
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Long-term Industry Projections **CALIFORNIA 2010-2020**

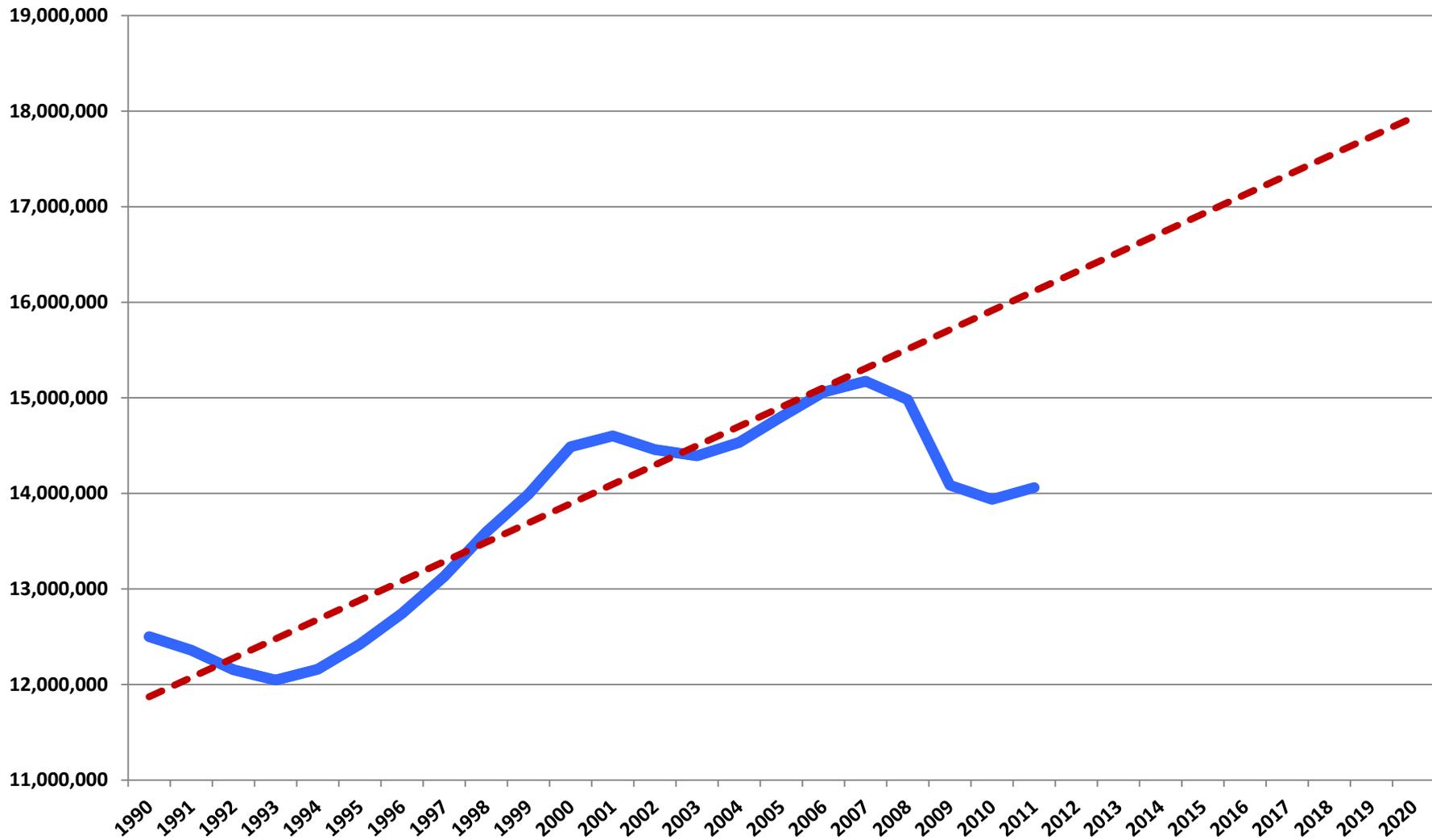
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California Total Nonfarm Employment 1990-2007



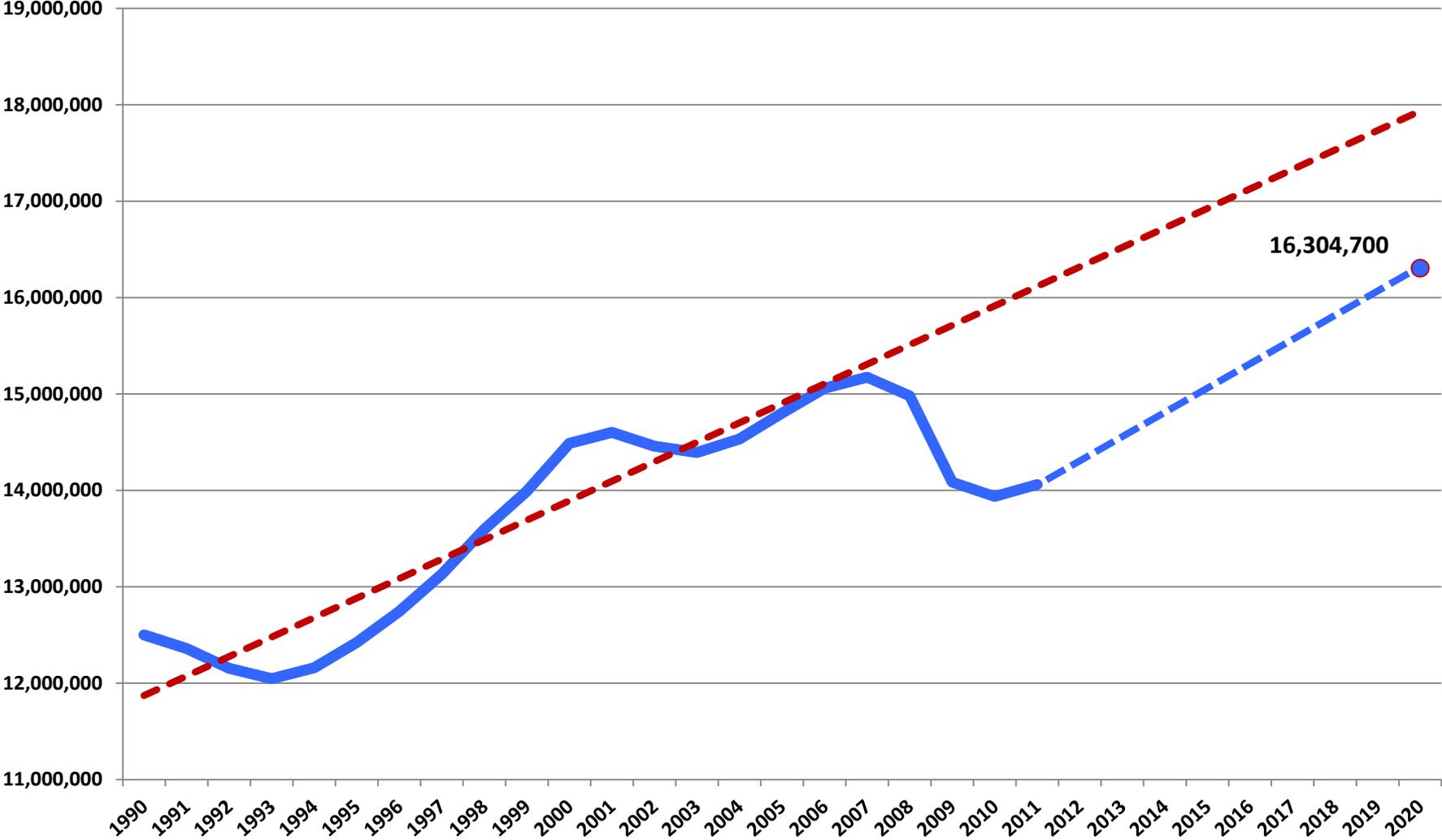
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California Total Nonfarm Employment 1990-2011



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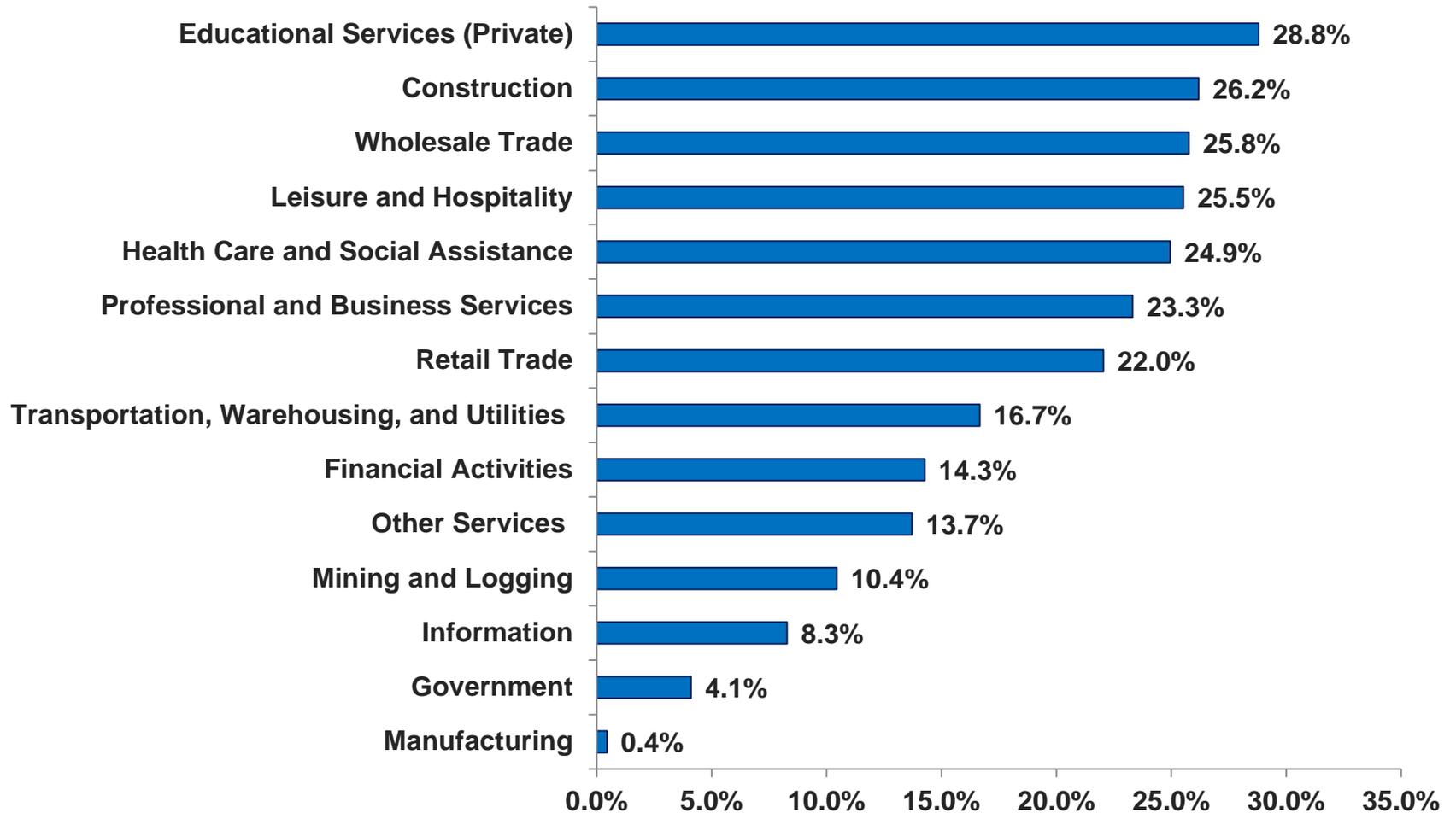
California Total Nonfarm Employment 1990-2011

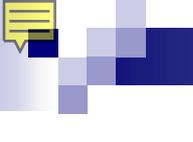


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California 2010-2020 Long-Term Industry Projections

Industry Sector Growth Rates

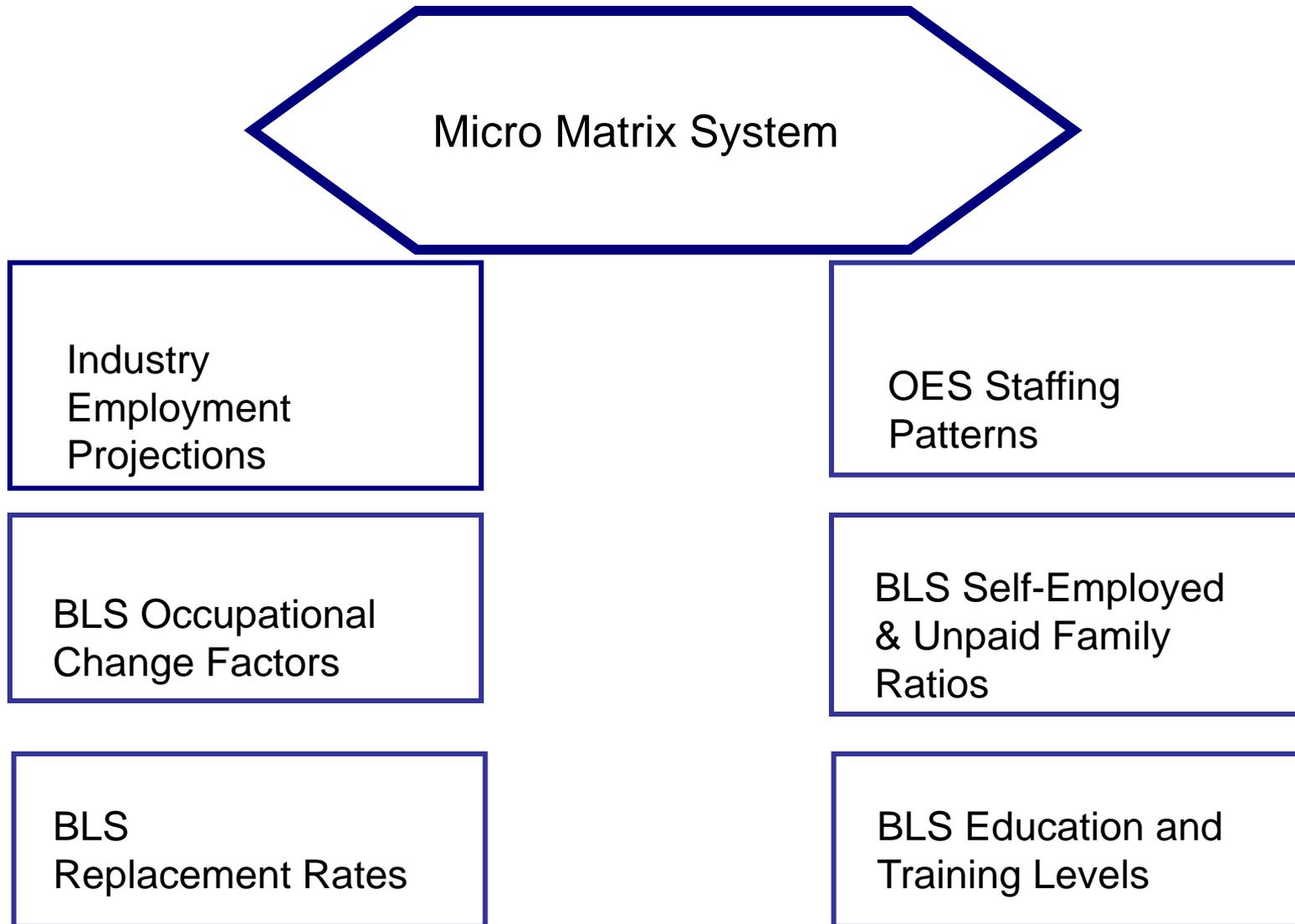




Occupational Employment Projections

- Estimate the changes in occupational employment over time resulting from industry growth, technological changes, and other factors
- Create Industry-specific projections for each occupation

Inputs into the Micro Matrix





Occupational Employment Statistics (OES)

- Annual survey of approximately 35,000 employers in California
- Collects employment and wages by occupation within industry
- Creates OES staffing patterns for all industries, occupations, and geographic areas

New Hybrid 2010 SOC codes

- BLS updated the Standard Occupational Classification (SOC) system for 2010.
- The OES survey is based on six panels of data collected over three years; therefore the May 2011 OES estimates used in the current projections incorporate data collected on the 2000 SOC.
- Staffing patterns for May 2010 (released May 2011) and May 2011 (to be released May 2012) are a hybrid of the 2000 SOC and 2010 SOC.



BLS Calculation – Occupational Change Factors

- Account for shifting occupational utilization within an industry
- BLS calculates change factors for each occupation in every industry for the Nation over a ten-year period
- Example: 41-9041 Telemarketers

A moderate decrease is expected as organizations devote fewer resources to telemarketing and as jobs are offshored.



BLS Calculation – Replacement Needs

- Identify those workers leaving an occupation.
- Determine whether those who separated were replaced.
- BLS calculates the historical replacement rate.
- Apply the historical rate to the projections period to calculate projected replacement needs.
- In some occupations, replacements provide more openings than employment growth.

BLS Education and Training Levels

NEW!

- The new BLS system provides individual assignments to each occupation for three dimensions: education, work experience in a related occupation, and on-the-job training. The objective of the new system is to present a more complete picture of the education and training needed for entry into a given occupation and to become competent at performing the occupation.

BLS Education and Training Levels

- **Entry level education**— represents the typical education level needed to enter an occupation. There are eight possible assignments for this category.
 1. Doctoral or professional degree
 2. Master's degree
 3. Bachelor's degree
 4. Associate's degree
 5. Postsecondary non-degree award
 6. Some college, no degree
 7. High school diploma or equivalent
 8. Less than high school

BLS Education and Training Levels

- **Work experience in a related occupation—** indicates if work experience in a related occupation is commonly considered necessary by employers for entry into the occupation, or is a commonly accepted substitute for formal types of training.

Assignments for this category will be:

- more than 5 years
- 1-5 years
- less than 1 year
- none

BLS Education and Training Levels

- **Typical on-the-job training**—indicates the typical on-the-job training needed to attain competency in the occupation.
- **Assignments for this category include:**
 - internship/residency
 - apprenticeship
 - long-term on-the-job training
 - moderate-term on-the-job training
 - short-term on-the-job training
 - none



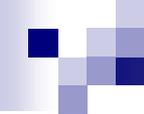
Occupational Projections Review

Projections analysts review preliminary projections to:

- Identify outliers or possible staffing pattern errors
- Identify projections that seem “unreasonable” based on State or national historical trends

And:

- Consult with local labor market analysts to review local area occupational projections
- Consider recent economic events



Short-term Occupational Projections
**CALIFORNIA 2011 3RD QUARTER-
2013 3RD QUARTER**

Employment Development Department,
Labor Market Information Division



California 2011-2013 Occupational Projections

Over the 2011-2013 projection period,
California is expected to generate:

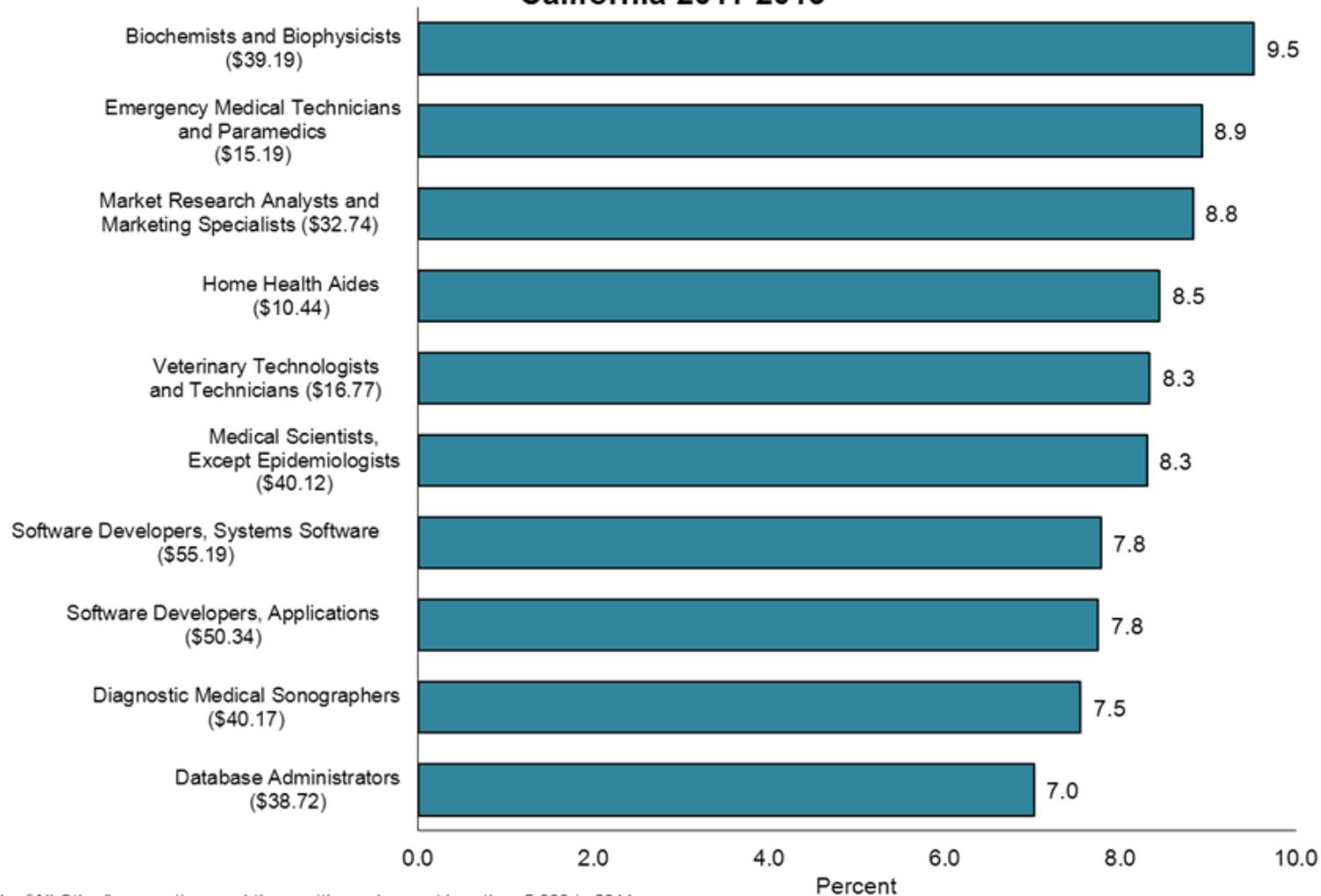
- 428,900 new jobs from industry growth,
- 760,000 jobs due to replacement needs,
- A combined total of 1,188,900 job openings.



The Fastest Growing Occupations

- The 50 fastest growing occupations are expected to grow at a rate of 4.7 percent or higher, compared to the overall 2.5 percent projected growth rate.
- The 50 fastest growing occupations are forecasted to generate 90,100 new jobs, accounting for 21 percent of all new jobs.

Top 10 Fastest Growing Occupations and Median Hourly Wages California 2011-2013



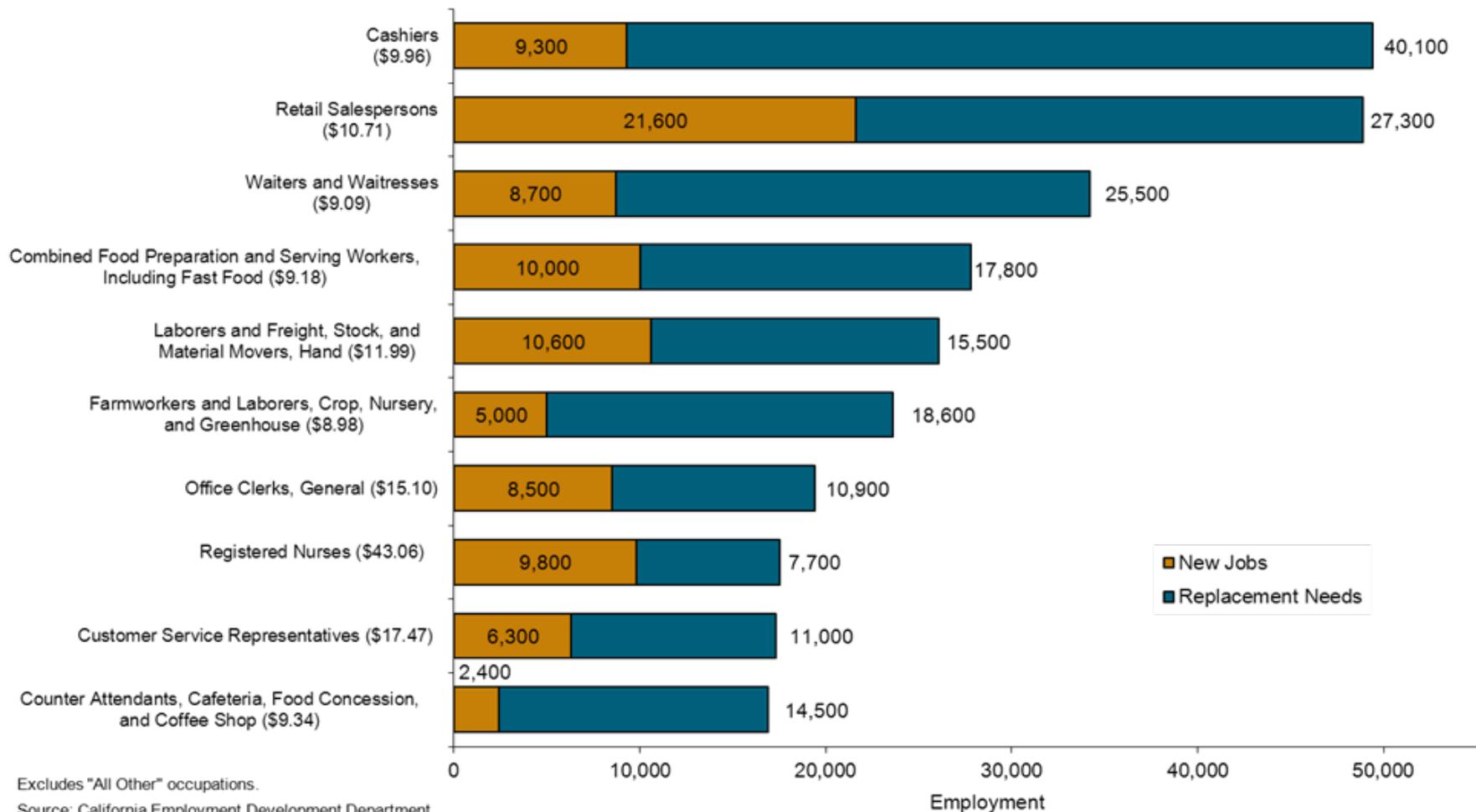
Excludes "All Other" occupations and those with employment less than 5,000 in 2011
 Source: California Employment Development Department



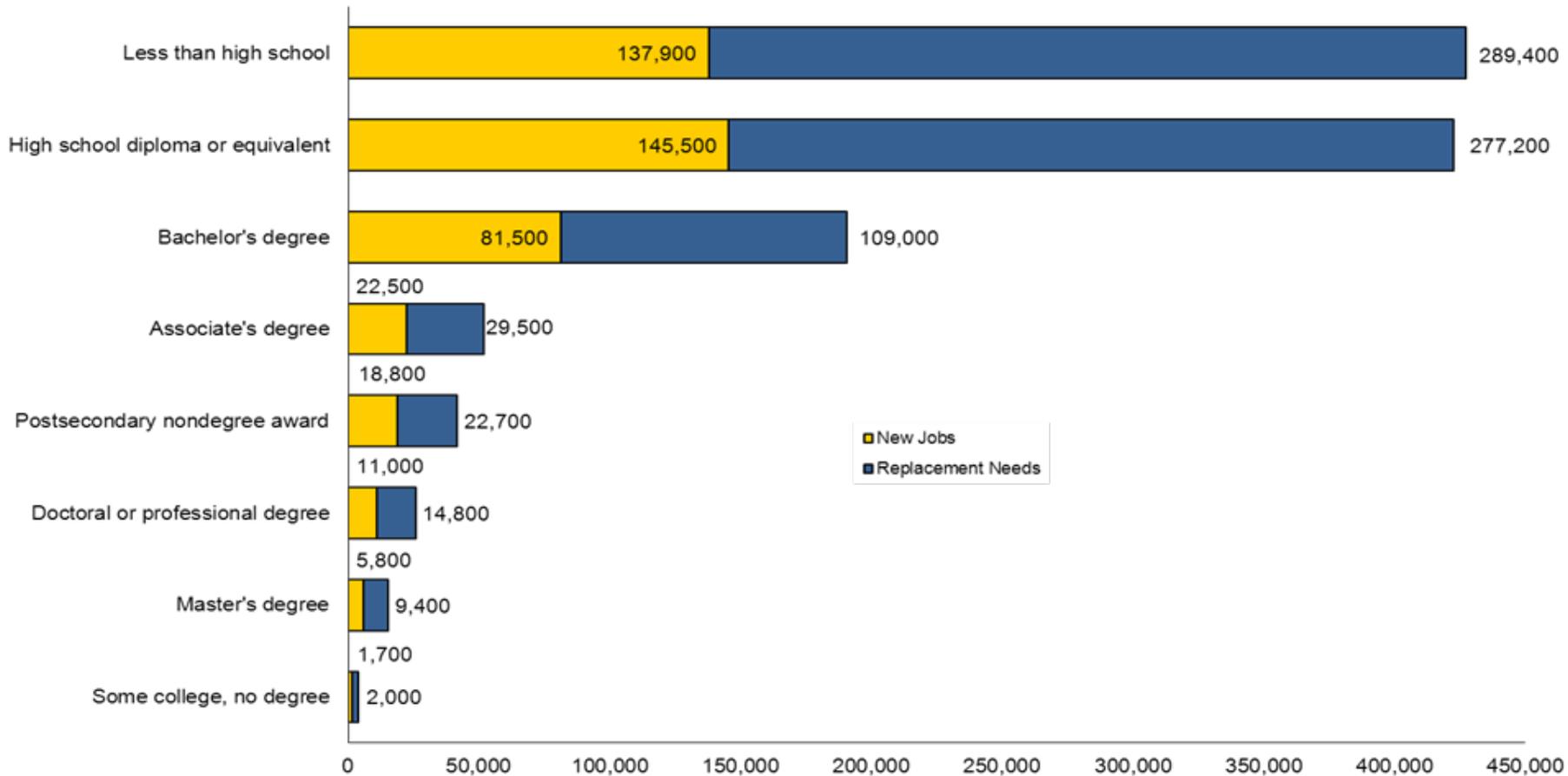
The Occupations with the Most Job Openings

- The top 50 occupations with the most job openings are expected to generate 616,000 total jobs.
- The top 50 occupations with the most job openings account for 52 percent of all job openings in California.
- 36 of the top 50 occupations with the most job openings have more openings due to replacement needs than job growth.

Top 10 Occupations with the Most Job Openings and Median Hourly Wages California 2011-2013



Total Job Openings by Entry Level Education California 2011-2013



Source: California Employment Development Department



Long-term Occupational Projections **CALIFORNIA 2010-2020**

Employment Development Department,
Labor Market Information Division



California 2010-2020 Occupational Projections

Over the projections period, California is anticipated to generate:

- About 2.7 million new jobs from industry growth,
- More than 3.7 million jobs from replacement needs,
- A combined total of approximately 6.4 million job openings.

The Fastest Growing Occupations

The 50 fastest growing occupations include:

- Home health aides, the fastest growing occupation, projected to grow at a rate of 52.4 percent over the ten-year projections period.
- Personal care aides, projected to grow at a rate of 42.6 percent and generate more than 138,000 new jobs from industry growth.
- Pharmacists, projected to grow at a rate of 26.7 percent and earn median annual wages more than \$130,000.
- Software developers, systems software and software developers, applications with projected growth rates of 31.9 and 27.7 percent, respectively, and median annual wages more than \$100,000.

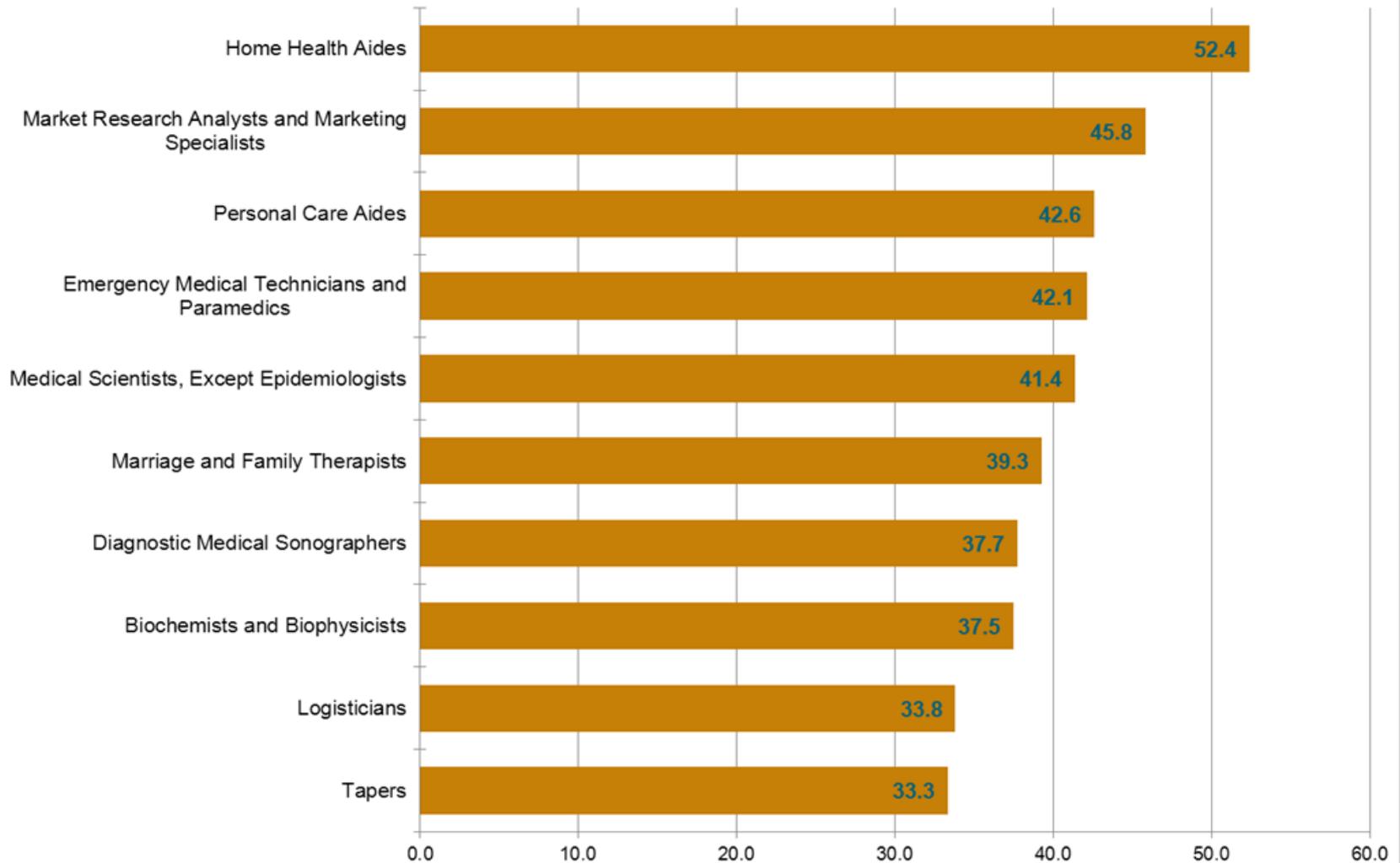


The Fastest Growing Occupations

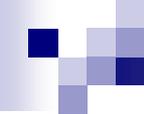
The 50 fastest growing occupations list includes varied occupations reflecting the widespread growth seen across all industry sectors. Additional characteristics of the top 50 occupations are as follows:

- A majority of occupations require a form of on-the-job training.
- Twenty-two occupations require an associate's degree or higher.
- Seven occupations require pre-employment work experience in addition to the necessary entry level education.

The Top 10 Fastest Growing Occupations California 2010-2020



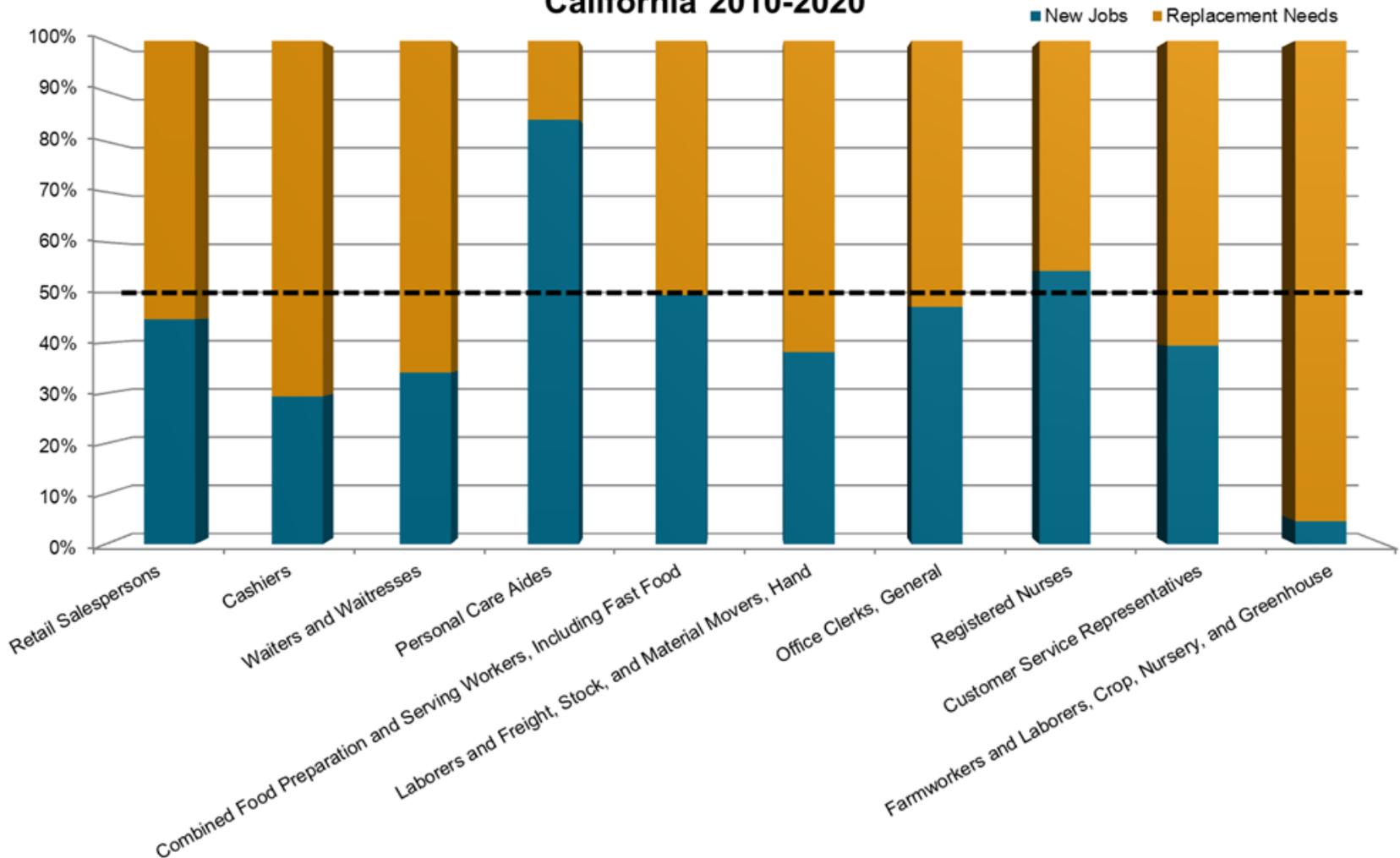
Excludes "All Other" occupations and those with employment less than 5,000 in 2010.
Source: California Employment Development Department



The Occupations with the Most Job Openings

- The top 50 occupations with the most job openings are projected to generate almost 3.3 million total job openings.
- The top 50 occupations with the most job openings account for more than 51 percent of all job openings.
- 33 of the top 50 occupations with the most job openings have more replacement needs than new jobs.

Percentage of New Jobs and Replacement Needs for the Top 10 Occupations with the Most Total Job Openings California 2010-2020



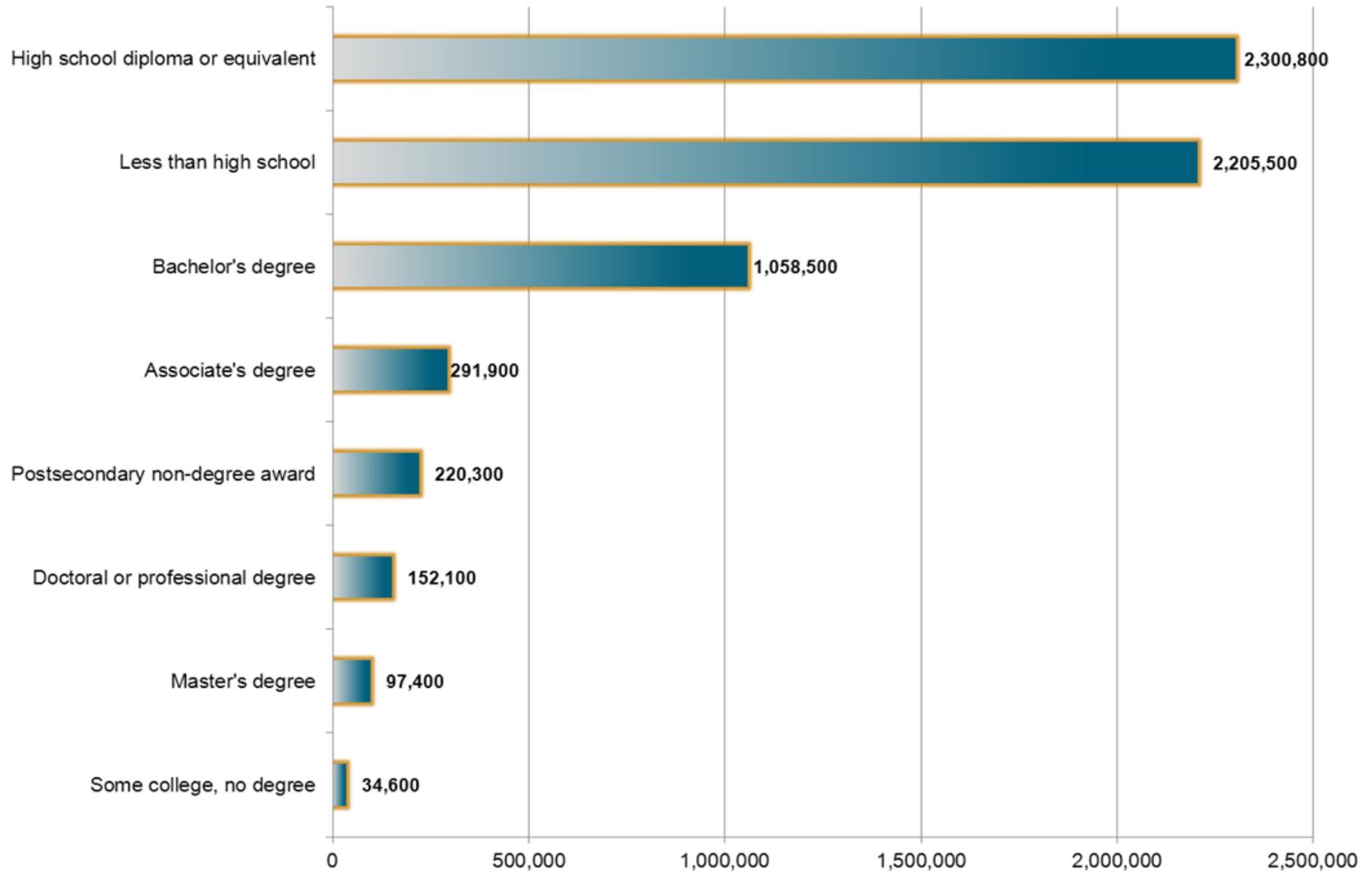
Excludes "All Other" occupations.
 Source: California Employment Development Department

High-Paying, In-Demand Occupations

Occupations that are each expected to generate more than 40,000 job openings and pay median hourly wages more than \$25 per hour include:

- General and Operations Managers
- Registered Nurses
- Accountants and Auditors
- Sales Representatives, Wholesale And Manufacturing, Except Technical and Scientific Products
- First-line Supervisors of Office and Administrative Support Workers

Total Job Openings by Entry Level Education California 2010-2020

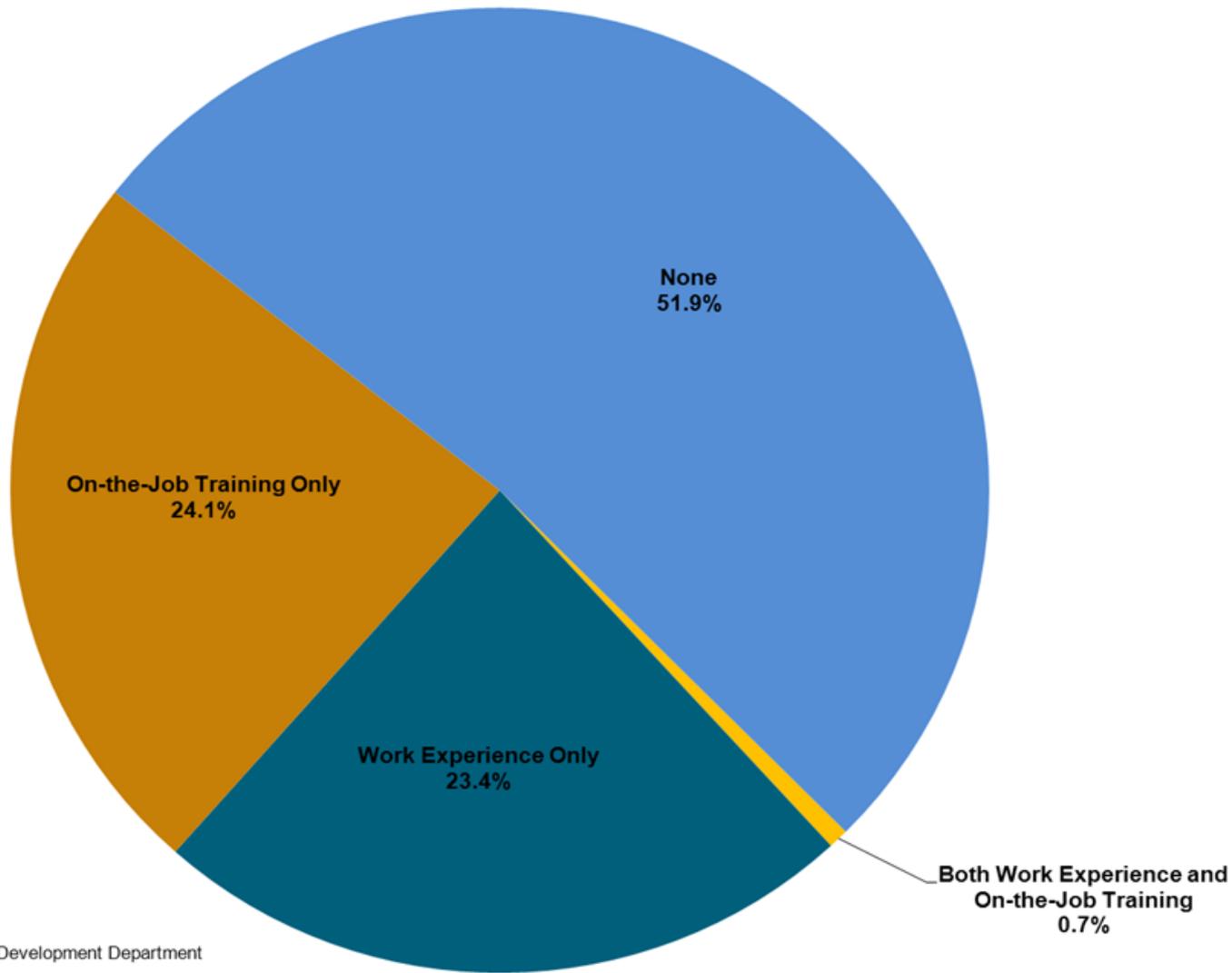


Source: California Employment Development Department

Table 2: High-Demand Occupations Requiring a High School Diploma or Equivalent

Work Experience	On-the-Job Training	Total Job Openings 2010-2020		Median Annual Wage
None	ST OJT	Office Clerks, General	109,400	\$31,413
None	ST OJT	Customer Service Representatives	92,600	\$36,347
1-5 years	None	First-Line Supervisors of Office and Administrative Support Workers	74,300	\$55,641
1-5 years	None	First-Line Supervisors of Retail Sales Workers	62,200	\$39,860
None	MT OJT	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	59,200	\$57,267
1-5 years	ST OJT	Heavy and Tractor-Trailer Truck Drivers	51,000	\$41,158
None	MT OJT	Bookkeeping, Accounting, and Auditing Clerks	49,800	\$40,032
None	ST OJT	Childcare Workers	49,500	\$23,425
None	ST OJT	Receptionists and Information Clerks	48,400	\$28,210
None	ST OJT	Security Guards	46,400	\$25,062

**Additional Experience or Training for Job Openings
Requiring a Bachelor's Degree
California 2010-2020**



Source: California Employment Development Department

Employment Projections Products

- Industry Employment Projections
- Detailed Occupational Employment Projections
- Occupations with the Most Job Openings
- Fastest Growing Occupations
- Industry-Occupational Matrix (Statewide Only)
- Projections Narratives/Highlights
- Occupation Comparison Table

The final tables are placed on the LMID Web site.

<http://www.labormarketinfo.ca.gov/>

Comparison of Growing Occupations by Entry Level Education in California 2011-2013

Fastest Growing (New Jobs from Industry Growth)	Entry Level Education	Largest Growing (New Jobs and Replacement Needs)
Biochemists and Biophysicists (9.5% or 600 jobs) Medical Scientists, Except Epidemiologists (8.3% or 2,300 jobs) Computer and Information Research Scientists (6.3% or 400 jobs) Veterinarians (5.2% or 300 jobs) Pediatricians, General (4.9% or 300 jobs)	Doctoral or Professional Degree	Lawyers (4,100 jobs) Medical Scientists, Except Epidemiologists (2,500 jobs) Pharmacists (2,100 jobs) Clinical, Counseling, and School Psychologists (1,800 jobs) Dentists, General (1,200 jobs)
Marriage and Family Therapists (6.4% or 700 jobs) Healthcare Social Workers (5.5% or 700 jobs) Physician Assistants (4.8% or 400 jobs) Rehabilitation Counselors (3.8% or 400 jobs) Occupational Therapists (3.3% or 300 jobs)	Master's Degree	Educational, Guidance, School, and Vocational Counselors (1,600 jobs) Healthcare Social Workers (1,200 jobs) Marriage and Family Therapists (1,200 jobs) Education Administrators, Elementary and Secondary School (1,100 jobs) Instructional Coordinators (1,000 jobs)
Market Research Analysts and Marketing Specialists (8.8% or 4,900 jobs) Software Developers, Applications (7.8% or 7,200 jobs) Software Developers, Systems Software (7.8% or 6,100 jobs) Database Administrators (7.0% or 800 jobs) Credit Analysts (6.6% or 400 jobs)	Bachelor's Degree	Accountants and Auditors (10,100 jobs) Software Developers, Applications (8,700 jobs) Market Research Analysts and Marketing Specialists (7,800 jobs) Software Developers, Systems Software (7,500 jobs) Management Analysts (5,800 jobs)
Veterinary Technologists and Technicians (8.3% or 700 jobs) Diagnostic Medical Sonographers (7.5% or 400 jobs) Respiratory Therapists (4.9% or 700 jobs) Broadcast Technicians (4.8% or 300 jobs) Radiologic Technologists and Technicians (4.6% or 800 jobs)	Associate's Degree	Registered Nurses (17,500 jobs) General and Operations Managers (10,300 jobs) Preschool Teachers, Except Special Education (2,800 jobs) Construction Managers (2,300 jobs) Paralegals and Legal Assistants (1,700 jobs)
Emergency Medical Technicians and Paramedics (8.9% or 1,500 jobs) Skincare Specialists (6.1% or 400 jobs) Manicurists and Pedicurists (5.8% or 1,300 jobs) Hairdressers, Hairstylists, and Cosmetologists (5.5% or 2,300 jobs) Licensed Practical and Licensed Vocational Nurses (4.4% or 2,900 jobs)	Postsecondary Non-degree Award	Nursing Aides, Orderlies, and Attendants (6,600 jobs) Licensed Practical and Licensed Vocational Nurses (6,300 jobs) Hairdressers, Hairstylists, and Cosmetologists (3,800 jobs) Dental Assistants (2,700 jobs) Emergency Medical Technicians and Paramedics (2,100 jobs)
Computer Support Specialists (4.7% or 3,300 jobs)	Some College, No Degree	Computer Support Specialists (6,700 jobs)
Demonstrators and Product Promoters (6.4% or 1,300 jobs) Physical Therapist Aides (6.3% or 400 jobs) Loan Officers (5.9% or 1,700 jobs) Pest Control Workers (5.6% or 500 jobs) Pharmacy Technicians (5.5% or 1,600 jobs)	High School Diploma or Equivalent	Office Clerks, General (9,700 jobs) Customer Service Representatives (17,300 jobs) First-Line Supervisors of Office and Administrative Support Workers (12,900 jobs) First-Line Supervisors of Retail Sales Workers (11,600 jobs) Heavy and Tractor-Trailer Truck Drivers (10,300 jobs)
Home Health Aides (8.5% or 5,400 jobs) Nonfarm Animal Caretakers (5.0% or 1,000 jobs) Retail Salespersons (4.9% or 21,600 jobs) Construction Laborers (4.6% or 5,200 jobs) Refuse and Recyclable Material Collectors (5.4% or 700 jobs)	Less than High School	Cashiers (49,400 jobs) Retail Salespersons (48,900 jobs) Waiters and Waitresses (34,200 jobs) Combined Food Preparation and Serving Workers, Including Fast Food (27,900 jobs) Laborers and Freight, Stock, and Material Movers, Hand (26,100 jobs)

Excludes "All-Other" occupations and those with employment less than 5,000 in 2011.

Visit www.labormarketinfo.edd.ca.gov for more projections information.

Source: State of California, Employment Development Department

Comparison of Growing Occupations by Entry Level Education in California 2010-2020

Fastest Growing (New Jobs from Industry Growth)	Entry Level Education	Largest Growing (New Jobs and Replacement Needs)
Medical Scientists, Except Epidemiologists (41.4% or 11,500 jobs) Biochemists and Biophysicists (37.5% or 2,400 jobs) Pharmacists (26.7% or 6,300 jobs) Physical Therapists (23.6% or 3,900 jobs) Family and General Practitioners (22.0% or 2,700 jobs)	Doctoral or Professional Degree	Lawyers (24,900 jobs) Medical Scientists, Except Epidemiologists (13,200 jobs) Pharmacists (12,300 jobs) Clinical, Counseling, and School Psychologists (11,300 jobs) Physical Therapists (5,800 jobs)
Marriage and Family Therapists (39.3% or 4,200 jobs) Healthcare Social Workers (31.0% or 3,900 jobs) Physician Assistants (25.3% or 2,100 jobs) Occupational Therapists (24.4% or 2,200 jobs) Urban and Regional Planners (23.6% or 2,100 jobs)	Master's Degree	Educational, Guidance, School, and Vocational Counselors (11,700 jobs) Instructional Coordinators (7,400 jobs) Education Administrators, Elementary and Secondary School (7,300 jobs) Healthcare Social Workers (6,900 jobs) Marriage and Family Therapists (6,500 jobs)
Market Research Analysts and Marketing Specialists (45.8% or 24,600 jobs) Logisticians (33.8% or 4,600 jobs) Cost Estimators (32.1% or 7,200 jobs) Database Administrators (32.1% or 3,600 jobs) Software Developers, Systems Software (31.9% or 24,100 jobs)	Bachelor's Degree	Elementary School Teachers, Except Special Education (51,500 jobs) Accountants and Auditors (50,000 jobs) Market Research Analysts and Marketing Specialists (38,800 jobs) Software Developers, Applications (33,800 jobs) Management Analysts (32,200 jobs)
Diagnostic Medical Sonographers (37.7% or 2,000 jobs) Veterinary Technologists and Technicians (31.0% or 2,600 jobs) Respiratory Therapists (26.1% or 3,700 jobs) Radiologic Technologists and Technicians (23.8% or 4,100 jobs) Registered Nurses (21.6% or 54,300 jobs)	Associate's Degree	Registered Nurses (99,800 jobs) General and Operations Managers (59,100 jobs) Preschool Teachers, Except Special Education (20,600 jobs) Construction Managers (12,200 jobs) Paralegals and Legal Assistants (9,200 jobs)
Emergency Medical Technicians and Paramedics (42.1% or 6,700 jobs) Heating, Air Conditioning, and Refrigeration Mechanics and Installers (27.1% or 5,600 jobs) Skincare Specialists (24.6% or 1,600 jobs) Licensed Practical and Licensed Vocational Nurses (22.5% or 14,500 jobs) Nursing Aides, Orderlies, and Attendants (22.5% or 24,600 jobs)	Postsecondary Non-degree Award	Nursing Aides, Orderlies, and Attendants (38,800 jobs) Licensed Practical and Licensed Vocational Nurses (31,700 jobs) Hairdressers, Hairstylists, and Cosmetologists (15,800 jobs) Dental Assistants (14,500 jobs) Firefighters (11,400 jobs)
Computer Support Specialists (18.6% or 12,900 jobs)	Some College, No Degree	Computer Support Specialists (31,200 jobs)
Pharmacy Technicians (33.1% or 9,600 jobs) Pharmacy Aides (32.1% or 2,600 jobs) Loan Officers (30.7% or 8,700 jobs) First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand (30.3% or 6,400 jobs) Food Service Managers (30.3% or 14,600 jobs)	High School Diploma or Equivalent	Office Clerks, General (109,400 jobs) Customer Service Representatives (92,600 jobs) First-Line Supervisors of Office and Administrative Support Workers (74,300 jobs) First-Line Supervisors of Retail Sales Workers (62,200 jobs) Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products (59,200 jobs)
Home Health Aides (52.4% or 32,000 jobs) Personal Care Aides (42.6% or 138,200 jobs) Tapers (33.3% or 2,000 jobs) Nonfarm Animal Caretakers (31.1% or 6,100 jobs) Cooks, Fast Food (29.7% or 30,800 jobs)	Less than High School	Retail Salespersons (232,000 jobs) Cashiers (220,000 jobs) Waiters and Waitresses (175,100 jobs) Personal Care Aides (163,900 jobs) Combined Food Preparation and Serving Workers, Including Fast Food (148,100 jobs)

Excludes "All-Other" occupations and those with employment less than 5,000 in 2010.

Visit www.labormarketinfo.edd.ca.gov for more projections information.

Source: California Employment Development Department



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Projections of Employment by Industry and Occupation

Projections of Employment estimate the changes in industry and occupational employment over time resulting from industry growth, technological change, and other factors. California produces long-term (10 year) projections of employment every 2 years for the State and local areas. Statewide short-term (2 year) projections are revised annually.

The files below contain all of the data for a single area. To extract data for selected occupations or areas, use the [Occupational Projections Data Search Tool](#).

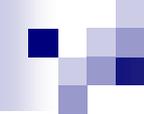
California Community Colleges should go to [Job Outlook for Occupational Education Programs](#) for occupational projections by Taxonomy of Programs or Classification of Instructional Programs code.

Additional Resources:

- » [California Industry and Occupation Staffing Patterns](#)
- » [Industry Employment Projections Methodology](#)
- » [Occupational Employment Projections Methodology](#)
- » [Bureau of Labor Statistics Training Level Definitions](#)
- » [CodeFinder](#) to search for a particular code or occupation title

State and County

Area	Highlights	Industry Projections	Occupational Projections	Occupations With the Most Job Openings	Fastest Growing Occupations
California:			All Occupational Projections (zip)		



Let Us Know

- What projections you use.
- How often you use them.
- Anything else about our products that you want or might find useful.

Please fill out the survey attached to the back of the slides.



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