

2016 CALIFORNIA STATE EMPLOYEE

TOTAL COMPENSATION REPORT

FOR BARGAINING UNITS 9 AND 10

PUBLISHED JANUARY 2018



## Message From the Director

Offering competitive compensation is crucial to our ability to recruit and retain a highly qualified workforce in state government, and the 2016 California State Employee Total Compensation Report reflects our commitment to better understanding the state's position in the labor market. By closely following the model developed by the U.S. Bureau of Labor Statistics (Bureau) and by tapping into its wealth of data on wages and benefits, we provide policy makers with a consistent method of comparing our compensation practices with other employers in California's labor market.

We selected this model because the Bureau is a well-respected, independent source for labor market information.

I express my sincere appreciation to the Bureau, California's Employment Development Department, the U.S. Office of Personnel Management, and the State Controller's Office for providing us with the data necessary for this report. I also thank my staff in the Office of Financial Management and Economic Research for their thoughtful analysis.

This is our third Total Compensation Report using the Bureau's model for comparing the employer's costs for employee compensation. We will continue to evaluate and refine how we use this benchmark data to compare our total compensation package with other employers in California.



Richard Gillihan, Director  
Department of Human Resources

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## Executive Summary

California's state government competes for its workforce with local-government agencies, as well as with the private sector and the federal government, which makes it critical that the state understands how its compensation compares with other employers.

Making simple wage comparisons, however, provides an incomplete picture. It is analogous to comparing the value of one home to another, without considering the size or location of the land. This is the reason that statutes require the California Department of Human Resources (CalHR) to compare state employee salaries and benefits with public and private-sector employers.

To meet this challenge, CalHR turned to the U.S. Department of Labor's Bureau of Labor Statistics (Bureau), which produces two of the nation's most comprehensive wage and benefit surveys: the Occupational Employment Statistics (OES) survey and the National Compensation Survey (NCS).

By using the Bureau's benchmark data and established methodology for calculating employee costs, the state can now compare its compensation practices with other employer groups in California, and provide valuable insight to current and prospective employees, policy makers, and the public.

### **Report Findings**

The state's benefit package has greater impact on total compensation when compared with other employers in the labor market. For example, when comparing median wages only, the state was below the market for all six occupations. However, when comparing total compensation, the state was at or above the market for three occupations, and below the market for three occupations. The table on the next page illustrates the details.

Summary of Report Findings

Table 1: Comparison of State Compensation to Market Average

Bargaining Unit	Occupation Title	MEDIAN WAGE ONLY		TOTAL COMPENSATION	
		At/Above Market Average	Below Market Average	At/Above Market Average	Below Market Average
9	Civil Engineers		✓	✓	
9	Electrical Engineers		✓		✓
9	Environmental Engineers		✓	✓	
10	Environmental Scientists		✓		✓
10	Chemists		✓	✓	
10	Epidemiologists		✓		✓

## About This Report

The 2016 California State Employee Total Compensation Report uses salary and benefit data to compare the state's compensation practices with three different employer groups:

- Local Government
- Private Sector
- Federal Government

Much of the labor market data in this report was provided by the Bureau and the State of California's Employment Development Department (EDD). Wage and benefit data from two surveys produced by the Bureau were combined to find the total compensation for local-government and private-sector workers. The OES survey also provided federal employee wage data, while federal employee benefit data originate from the U.S. Office of Personnel Management (OPM) and other federal agencies.

State government employee wage and benefit data were provided by the State Controller's Office (SCO). The total compensation for each employer group was calculated by CalHR staff. The table on the next page summarizes the sources for wage and benefit data for each employer group, along with the page number in this report for additional details.

Table 2: Major Data Sources for Report

Employer Group	Wages	Benefits
Local Government	OES Survey (see pg. 15)	NCS (see pg. 11)
Private Sector	OES Survey (see pg. 15)	NCS (see pg. 11)
Federal Government	OES Survey (see pg. 15)	OPM (see pg. 14)
State Government	SCO (see pg. 19)	SCO (see pg. 20)

This report compares the state's compensation costs for its workforce in six occupations with its primary competitors in the labor market: local-government employers, large private-sector employers (500 or more employees), and the federal government. We selected the occupations in this report because state workers employed in these occupations are represented in two bargaining units with expiring contracts in 2018.

In addition to making statewide comparisons, this report compares state employee total compensation in five geographic regions: Sacramento, San Francisco, Los Angeles, San Diego, and all other counties.

## Changes to Report

We made a few changes to this year's report from the 2013 report, which are highlighted in the table below.

Table 3: Changes to Report Methodology from 2013 Report

Item	2013 Report	2016 Report
Federal Employee Benefit Percentage Estimate	Used Congressional Budget Office data and assumed same percentage of supplemental pay for federal workers as state workers.	Used benefit cost data from the U.S. Office of Personnel Management.
Market Determination	Determined the state's position in the labor market based upon the total compensation of two or more employer groups.	Determined the state's position in the labor market based upon the "Market Average" for the three employer groups.
Regional Comparisons with Private Sector	Used wage and benefit data from "all private-sector" employers for regional comparisons.	Used wage and benefit data from large private-sector employers consistent with statewide comparisons.
Wage Estimates Used for Occupations	Used wage estimates from the OES survey, even if the Bureau did not publish an estimate of workers for an employer group.*	Used wage estimates from the OES survey, only if the Bureau published an estimate of workers for an employer group.

\*The Bureau includes an estimate of wages and number of workers per occupation for each employer group in the OES survey. However, employment estimates are not available for some employers in some occupations even when wage estimates are published. The Bureau withholds these estimates from publication for a number of reasons, including failure to meet Bureau quality standards or the need to protect the confidentiality of survey respondents.



## Comparing Data

The intent of this report is to use the best available data to compare the state's total compensation costs with other employers in California.

This report does not define the appropriate level of compensation for state employees.

Instead, this report compares how state workers are compensated, as a group, with other workers in the same occupation by measuring the employer's costs for providing wages and common employee benefits.

## Authority and Background

According to Government Code section 19826(a) and (c), when the state establishes or adjusts salaries, “consideration shall be given to the prevailing rates for comparable service in other public employment and in private business,” and CalHR must submit its findings to the parties meeting and conferring, and to the Legislature at least six months prior to the expiration of a Memorandum of Understanding (MOU). The law requires that the state’s report contains “salaries of employees in comparable occupations in private industry and other governmental agencies.” The Budget Act, Chapter 14, Statutes of 2017, Item 7501-001-0001, Provision 1 requires that in addition to salaries the report must include total compensation and geographic comparisons.

## Mapping of State Jobs

In 2011, CalHR staff began mapping more than 3,800 state civil service classifications to 840 detailed occupations as defined by the federal government’s Standard Occupational Classification (SOC) system. These detailed occupations are grouped into 23 major groups, 97 minor groups, and 461 broad occupations.

With the state’s classifications mapped to the SOC system, employee compensation can be compared with data collected by the federal government.

The mapping used in this report has been reviewed by Bureau economists and by CalHR’s Personnel Management Division.

The table below provides an example of a six-digit SOC code.

Table 4: Example of a SOC Code

Civil Engineers (17-2051)			
Major Group	Minor Group	Broad Occupation	Detailed Occupation
17	20	5	1

Thanks to the mapping, the state is now able to:

- Systematically categorize and measure a wide range of employee benefits and pay incentives
- Assess the competitiveness of its compensation practices with other employers in the labor market
- Compare compensation practices between employees in different bargaining units
- Educate current and prospective employees about its compensation practices
- Analyze the growth of its compensation costs with other employers
- Inform policy-makers and the public about compensation costs

## About the National Compensation Survey

According to the Bureau, the NCS provides comprehensive measures of employee compensation, compensation cost trends, as well as the degree to which workers have access to — and participate in — employer-provided benefit plans. Bureau field economists collect and review the survey data from a national, statistically representative sample of private-sector businesses, and state and local-government agencies. The survey does not include federal government, agricultural, household workers, and workers who are self-employed.

The NCS data are used in the following Bureau reports:

- Employment Cost Index (ECI)
- Employee Benefit Incidence and Provisions
- Employer Costs for Employee Compensation (ECEC)

Please refer to the Glossary of Terms for detailed definitions.

The 2016 California State Employee Total Compensation Report uses data from the ECEC, which reports the average total compensation on an hourly basis for private-sector and local-government workers.

The ECEC reports the following employer-paid benefit costs:

- Supplemental pay
- Paid leave
- Insurance
- Retirement savings
- Legally required benefits

The Bureau provided CalHR with unpublished estimates of annual hours worked, annual scheduled hours, and hourly wage and benefit costs for private-sector and local-government workers separately. This data allowed CalHR to annualize these costs and create “benefit percentages” for each employer group and each occupation.<sup>1</sup> The table on the following page summarizes how these percentages were created.

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<sup>1</sup> The Bureau was able to provide estimates for wages, benefits, annual scheduled hours, and annual hours worked for most major occupational groups for the private sector. However local government sample data was insufficient to produce estimates for some major occupational groups. Where this was the case, CalHR used the local government high level or “All Worker” benefit percentage.

Table 5: Calculating the Benefit Percentage From the NCS

<b>NCS Wage for Major Occupational Group</b>	<b>NCS Total Benefits for Major Occupational Group</b>	<b>Benefit Formula</b>	<b>Benefit %</b>
\$40,000 / Year	\$20,000 / Year	$(\$20,000 / \$40,000) = 50\%$	50%

# National Compensation Survey Benefit Data

The Bureau provided CalHR with a detailed breakout of total compensation costs from the NCS for the Pacific Region.<sup>2</sup> The map below illustrates the five states in the Pacific Region.

NCS Published Areas



<sup>2</sup> For a list of all localities, refer to: “NCS Published Areas, National Compensation Survey- Wages” Bureau of Labor Statistics, September 16, 2011, <http://www.bls.gov/ncs/ocs/compub.htm>.

## Federal Employee Benefit Data

The Bureau collects and reports federal employee wages in the OES survey by detailed occupation. However, federal workers are not included in the NCS.<sup>3</sup> To calculate a benefit percentage for federal workers, CalHR obtained wage and benefit costs for federal workers for each occupation from the U.S. Office of Personnel Management.

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<sup>3</sup> The NCS report is used for annual across-the-board salary adjustments for the base General Schedule pay under the provisions of 5 U.S.C. 5303.

## About the Occupational Employment Statistics Survey

According to the Bureau, the OES survey is the only comprehensive source of regularly-produced occupational employment and wage rate information for the U.S. economy. The survey covers all full-time and part-time wage and salary workers in nonfarm industries. It does not include wages for the self-employed.

The OES program is a cooperative effort between the Bureau and State Workforce Agencies (SWA). In California, the Employment Development Department is the SWA, and is responsible for collecting local-government and private-sector wages, while the Bureau collects state and federal employee wage data.

All wage data in the survey is categorized into occupations using the federal SOC system. These occupations typically include entry-level through journey-level workers, and often first-level supervisors. Therefore, the OES survey represents a wide range of wages for each occupation.

The survey is distributed to approximately 97,000 local-government and private-sector employers in California over a three-year period. The Bureau updates any aged survey data using the ECI before combining it with current data.

The OES data in this report reflects wages for full-time workers in California as of March 2016. Private-sector wages were filtered for large employers (500 or more employees) for all statewide and regional comparisons.



## Methodology for Combining Benefit Percentages and Wages

Prior to completing this report, the Bureau and the EDD instructed CalHR on how the data are collected and calculated in the NCS and OES surveys. This provided a better understanding on how to combine both surveys for benchmarking purposes as well as how to collect and calculate state employee costs in a comparable manner.

To find the total compensation for a detailed occupation, the benefit percentage from the NCS (for local government and private sector) and from the OPM (for federal government) was combined with the wage data from the corresponding employer group in the OES survey.

Here's how this works: Multiply the OES annual wage by the benefit percentage to find the dollar value for employee benefits, and then add this amount to the annual wage from the OES survey. This produces the annual total compensation estimate for workers in the occupation.

Using wage and benefit data in this way allows an employer to categorize and compare a wide range of employee benefits and pay incentives to see how its compensation compares with other employers in the labor market.

Table 6: Calculating the Value of Employee Benefits

OES Annual Wage for Detailed Occupational Group	Benefit %	Multiply Annual Wage by Benefit Percentage	Add OES Annual Wage and Value of Benefits	Total Compensation for Occupation
\$40,000 / Year	50%	$(\$40,000 \times 50\%) = \$20,000$	$\$40,000 + \$20,000$	\$60,000 / Year

## Benchmark Selections

In previous years, the state published salary surveys using “benchmark classifications” to measure compensation for each bargaining unit. Since the publication of the 2013 California State Employee Total Compensation Report, CalHR began comparing “benchmark occupations,” because all Bureau wage and benefit data are reported by occupation.

This report includes benchmark occupations from two bargaining units with MOUs expiring by July 2018:

- BU 9 – Professional Engineers
- BU 10 – Professional Scientists

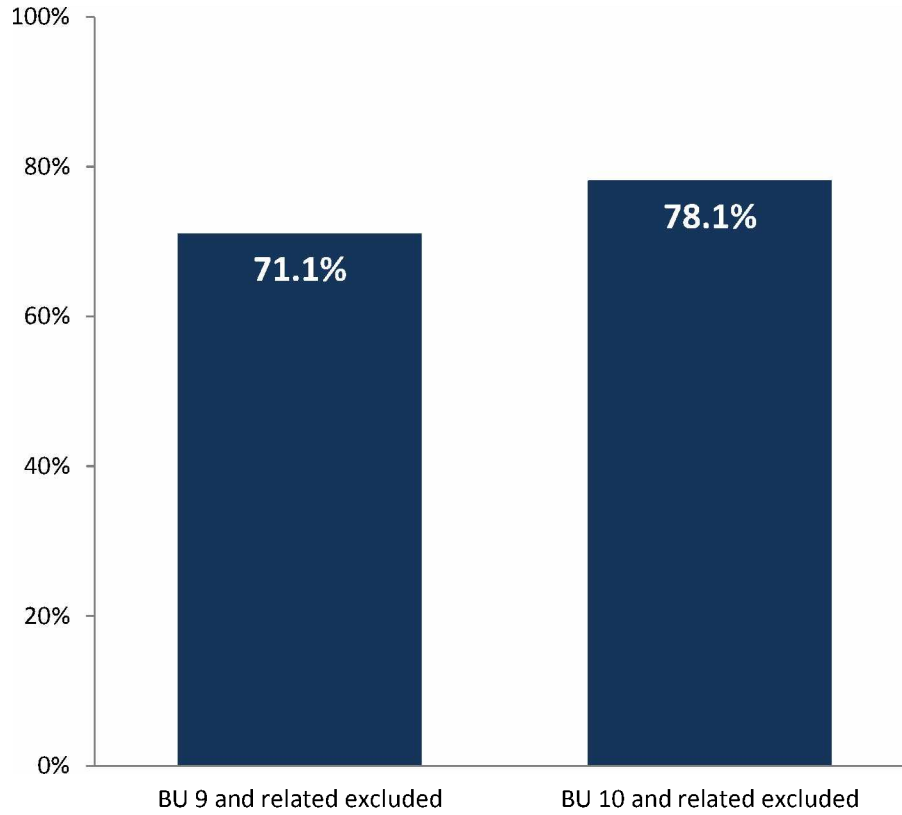
This report covers 123 rank-and-file and related excluded classifications associated with the two bargaining units listed above. They are mapped to six detailed occupations categorized by SOC code. All classifications mapped to the same benchmark occupation are compared, as a group, to the wage and benefit data for the corresponding occupation. These comparisons include classifications from entry-level through journey-level, and in many occupations, related supervisors. Please refer to Appendix B for details on the specific classifications in each occupation.

The benchmark occupations used in this report were selected using the following criteria:

- State classifications have consistent duties and qualifications with the SOC definition
- State classifications represent a significant portion of the bargaining unit

More than 11,000 full-time state employees are represented in the six occupations included in this report. Chart 1 (on the next page) illustrates the percentage of employees associated with each bargaining unit in this report.

Chart 1: Percent of Full-Time State Employees Associated With Bargaining Unit 9 & 10



Related excluded employees are included in the calculation of the percentage of employees associated with each bargaining unit.

## State Employee Wages

This report uses OES monthly wages for full-time workers as of March 2016. To remain consistent, full-time state employee wage data were collected for the same month, and the median state wage for each occupation were compared with the median wage from the OES survey. (The median is the number in the middle of a group. For example, if there are five wages listed in descending order, then the third salary would be the median wage.) To do this, all salaries paid to state workers associated with the same bargaining unit and mapped to the same occupation were collected. The average “wage-related” pay differentials for each occupation were then added to the base salary paid to each state employee to calculate the wage per employee. The median state wage was then identified for each occupation.

Please refer to Appendix A for additional details on state employee and labor market wages.

## Calculating State Employee Benefit Percentages

To calculate the percentage of benefits to wages for state workers, CalHR closely followed the methodology used by the Bureau for the NCS.

The benefits listed below are included in the NCS, which measures the employer's average costs for wages and benefits. The state's costs were collected from data provided by SCO for each bargaining unit separately, and then divided by the count of full-time employees to find an average annual benefit cost per employee. The average annual benefit cost was then divided by the average annual wage for that bargaining unit to find a "benefit percentage." Please refer to the Glossary of Terms for detailed definitions.

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**Wages:** The average base pay for each bargaining unit was collected. An average of the qualifying pay differentials was calculated, and then added to the average base pay to compute the average wage for each bargaining unit.

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### Benefits

**Supplemental Pay:** This includes the employer's costs for overtime pay, shift differentials (for example, holiday shifts, weekend shifts, non-regular shift pay differentials), and the remainder of premium pays that are not included in the wage.

This also includes the following Non-Production Bonuses:

- Merit Award Program (Employee Suggestion Award, Employee Recognition Award, and 25-Year Service Award)
- Informal time off (ITO)
- Flex Elect (cash in-lieu of benefits)
- Recruitment and Retention bonuses
- Longevity bonuses

**Paid Leave:** To find the employer's cost for paid leave, all vacation/annual leave, holidays, and professional development days accrued are assumed used and totaled. All sick leave used is then added to the total. This number is then multiplied by an hourly rate for paid leave.

**Insurance:** This includes the employer contribution for life insurance,<sup>4</sup> health insurance or consolidated benefits (CoBen), dental insurance, vision insurance, short-term disability insurance, long-term disability insurance, and administrative fees paid by the state for each plan.

**Retirement and Savings:** This includes the employer contribution towards retirement plans administered by the California Public Employees' Retirement System (CalPERS).

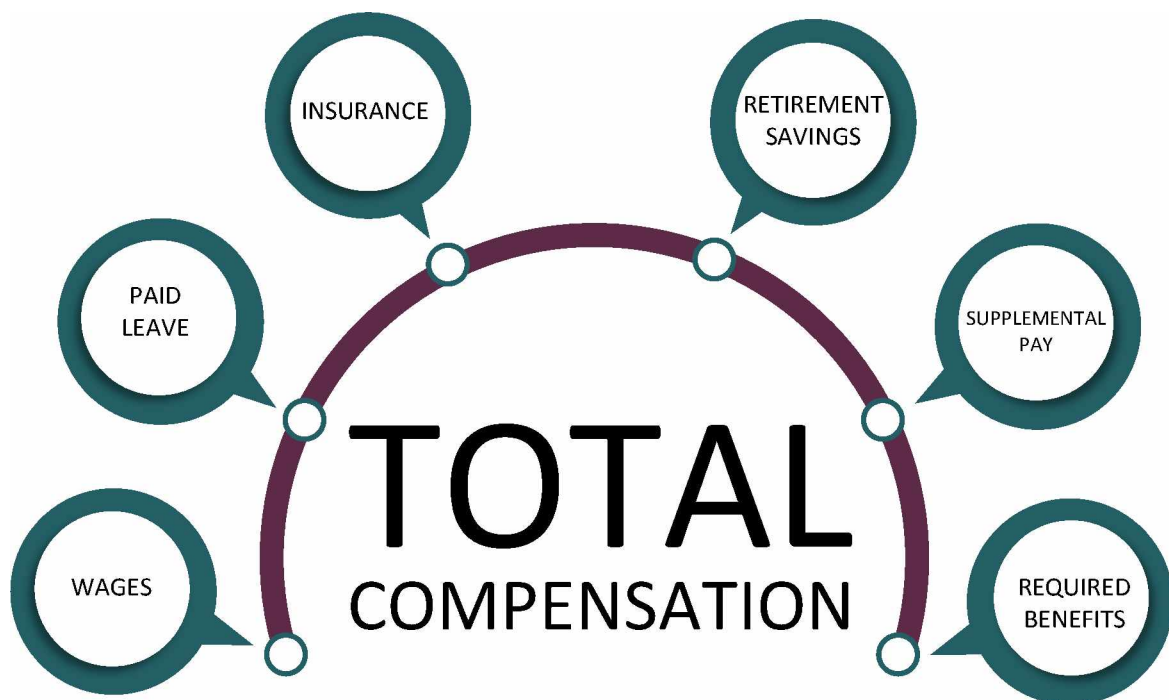
**Legally Required Benefits:** This includes the employer costs for Social Security, Medicare, state and federal unemployment insurance, and workers' compensation.

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<sup>4</sup> The state pays for a Group Term Life Insurance policy for Managers, Supervisors and Excluded employees. The cost for these employees was included in the state's total compensation whenever they were part of an occupation. In addition to these policies, all state employees enrolled in a CalPERS retirement plan are automatically covered in a Group Term Life Insurance plan. However, those policies are funded through retirement contributions.

## Wages + Benefits = Total Compensation

When the value of employee benefits is added to wages, it has a significant impact on the monthly total compensation costs for state employees. Using the same methodology for combining labor market data, CalHR combined a state benefit percentage for each bargaining unit to a state wage to find the total compensation for state workers. Please refer to page 16 for more details. The table on the next page illustrates the effect that benefits have for workers in each bargaining unit.



## Bargaining Unit Comparisons

Although this report compares the total compensation costs for workers employed by different employer groups, comparisons can also be made between state workers in different bargaining units. The table below displays the annual scheduled hours of work, and the average annual hours worked for all full-time rank-and-file employees in each bargaining unit. The total compensation numbers represent the employer's costs for employee compensation, which is the average costs for wages and benefits (supplemental pay, paid leave, insurance, retirement, and legally required benefits). Although overtime is included in supplemental pay, the table below displays overtime separately to illustrate its significance for each bargaining unit. Please refer to Appendix C-1 for more details about the benefit percentage for each unit.

Table 7: Average Annual Total Compensation Costs for Rank-and-File Employees by Unit in 2016

Bargaining Unit	Annual Scheduled Hours	Annual Hours Worked	Wages	Benefits		Total Compensation
				Other Benefits	Overtime	
9	2,080	1,782	\$105,045	\$67,663	\$2,229	\$174,937
10	2,080	1,785	\$73,243	\$47,003	\$492	\$120,738

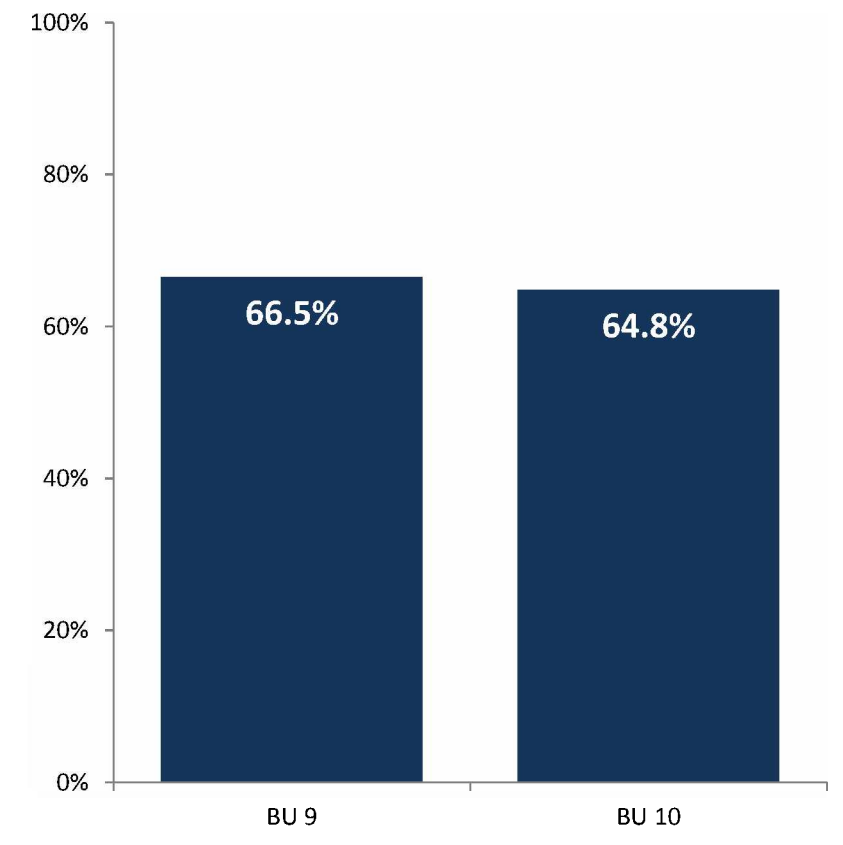
Please refer to Appendix C for Benefit Percentages used for each occupation. Please refer to the Glossary of Terms for a detailed definition of Annual Scheduled Hours and Annual Hours Worked. Wages, Other Benefits, and Overtime may not equal Total Compensation due to rounding.



## Benefit Percentages for Bargaining Units

The benefit percentages below represent the state's average cost for employee benefits, as defined by the Bureau, compared to the average state cost for rank-and-file employee wages. Please refer to Appendix C for specific benefit percentages used for each occupation.

Chart 2: Benefit Percentages for Rank-and-File Employees in Each Bargaining Unit



## Survey Findings: Total Compensation

On the next two pages the state's total compensation for each occupation is compared with the combined OES, NCS and OPM data. The local government, private sector, and federal government columns display the percentage lead or lag compared to the state's total compensation for each occupation. A negative percentage indicates the state's total compensation is below (or lags) that employer group. A positive percentage indicates the state's compensation is above (or leads) that employer group. The Market Average column is a weighted average for all three employer groups based upon total compensation and employment estimates for each employer. If the Market Average total compensation is positive or zero, the state is considered to be at or above the market. If the Market Average is negative, the state's compensation is considered to be below the market. Where there are data available from only one employer group for a comparison, that employer group represents the Market Average.

## State Compensation At or Above Market

The table displays where the state's total compensation leads the Market Average.

Table 8: Occupations Where State Total Compensation is At or Above the Market Average

Bargaining Unit	SOC Code	Occupation Title	Local Govt.	Private Sector	Federal Govt.	Market Average
9	17-2051	Civil Engineers	3.7%	1.0%	19.8%	4.9%
9	17-2081	Environmental Engineers	6.7%	0.7%	7.4%	5.5%
10	19-2031	Chemists	-7.9%	6.2%	-23.6%	1.4%

The median wage is used to determine total compensation and if state occupations are at/above or below the Market Average. The Market Average column is a weighted average for all three employer groups based upon total compensation and employment estimates for each employer.

## State Compensation Below Market

The table displays where the state's total compensation lags the Market Average.

Table 9: Occupations Where State Total Compensation is Below the Market Average

Bargaining Unit	SOC Code	Occupation Title	Local Govt.	Private Sector	Federal Govt.	Market Average
9	17-2071	Electrical Engineers	-24.9%	-15.5%	23.1%	-14.7%
10	19-2041	Environmental Scientists	-1.0%	-34.2%	-25.9%	-11.7%
10	19-1041	Epidemiologists	8.5%	-31.0%	-	-6.7%

The median wage is used to determine total compensation and if state occupations are at/above or below the Market Average. The Market Average column is a weighted average for all three employer groups based upon total compensation and employment estimates for each employer.

## Change in Market Average Total Compensation Comparisons

Table 10 compares the market average total compensation from the 2013 and 2016 reports for occupations associated with units 9 and 10.

Table 10: Market Average Total Compensation Lead/Lag in 2013 and 2016

SOC Code	Occupation Title	2013 Market Avg. Total Comp. State Lead/Lag	2016 Market Avg. Total Comp. State Lead/Lag	Difference in Market Avg. Total Comp State Lead/Lag
17-2051	Civil Engineers	5.5%	4.9%	-0.6%
17-2071	Electrical Engineers	-1.3%	-14.7%	-13.4%
17-2081	Environmental Engineers	5.2%	5.5%	0.3%
19-2041	Environmental Scientists	-14.4%	-11.7%	2.7%
19-2031	Chemists	-10.0%	1.4%	11.4%
19-1041	Epidemiologists	4.0%	-6.7%	-10.7%

Please note, a Market Average number was not calculated and published in the 2013 California State Employee Total Compensation Report. However, employee counts and compensation published in that report were used to create the 2013 Market Averages for this comparison.

## Bargaining Units in Detail

Since 1982, rank-and-file state employees in California have been divided into different bargaining units based upon the type of work they perform, and are covered under collective bargaining rules outlined in the Ralph C. Dills Act. Each bargaining unit is represented by a union that negotiates employee wages, benefits, hours of work, and other terms and conditions of employment through an MOU. This report includes six benchmark occupations from two of these bargaining units. The state will negotiate MOUs with unions representing these bargaining units in 2018. Please refer to page 17 for a description of the benchmark selection criteria and Appendix B for a detailed list of state classifications in each occupation.

In addition to rank-and-file employees, there are thousands of employees associated with bargaining units, even though they are not represented by a union. Whenever an occupation includes these workers, related excluded classifications are included in our comparisons.

On the following pages there is a brief description of each bargaining unit in this report. This is followed by a description of each occupation from the federal SOC system, EDD's estimate of future job growth between 2014 and 2024 in California, and vacancy and turnover information for the state's classifications in the occupation. Please see the Glossary of Terms for definitions.



09

Professional  
Engineers



10

Professional  
Scientists

# 09

## Bargaining Unit 9

Bargaining Unit 9 is made up of professional engineers. Three occupations were selected for this report based upon the strength of their match to the SOC description and the number of state employees in the occupation. The three occupations consist of both rank-and-file and related excluded employees. The total compensation dollars on the following pages may not always equal wages plus benefits due to rounding. See Appendix B for a detailed list of state classifications in each occupation.

### KEY STATISTICS\* FOR UNIT

**11,978**

Full-Time Employees

**255**

State Classifications

**36**

Occupations

### Occupations Examined for Bargaining Unit 9

- Civil Engineers
- Environmental Engineers
- Electrical Engineers

### KEY STATISTICS\* IN REPORT

**3**

Unit 9  
Occupations  
in Report

**71**

Unit 9  
Classifications  
in Report

**71.1%**

of Unit 9  
Full-Time Employees  
in Report

\*Includes rank-and-file and related excluded employees.

# 09

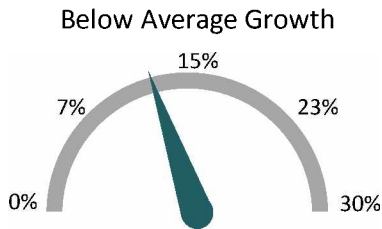
## Civil Engineers

SOC Code: 17-2051

**Federal Government Definition:** Employees in the Civil Engineer occupation perform engineering duties in planning, designing, and overseeing construction and maintenance of building structures, and facilities, such as roads, railroads, airports, bridges, harbors, channels, dams, irrigation projects, pipelines, power plants, and water and sewage systems.

**The State Employs:**

- 6,550 full-time employees in this occupation in 31 classifications
- This occupation represents 54.7 percent of employees associated with Unit 9



**12.2%**

Projected Growth for Occupation in California by 2024 according to the EDD

The State's Total Compensation Leads/Lags Each Employer Group By:



Local Government

**3.7%**

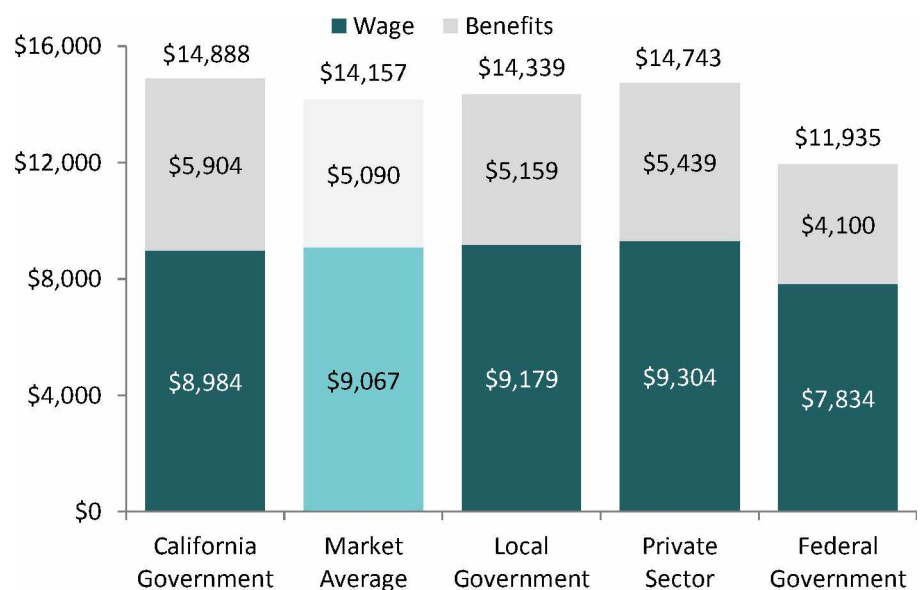
Private Sector

**1.0%**

Federal Government

**19.8%**

Statewide Monthly Median Total Compensation Comparison for the Civil Engineers Occupation



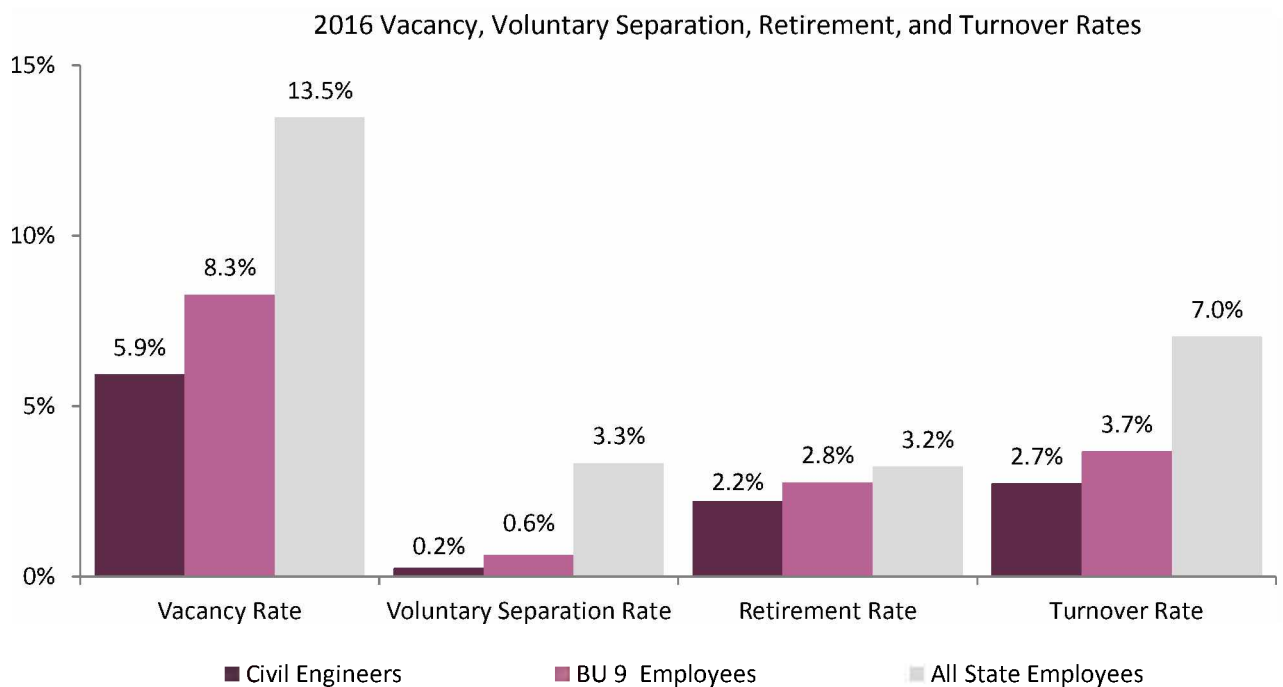


# 09

## Civil Engineers

The following displays the average 2016 state employee workforce data for Civil Engineers, Bargaining Unit 9 and related excluded employees, and for all state employees. See the Glossary of Terms for definitions.

Civil Engineers	BU 9 Employees	All State Employees
Average Age <b>51</b>	Average Age <b>51</b>	Average Age <b>46</b>
Average Years of State Service <b>19</b>	Average Years of State Service <b>18</b>	Average Years of State Service <b>13</b>



# 09

## Environmental Engineers

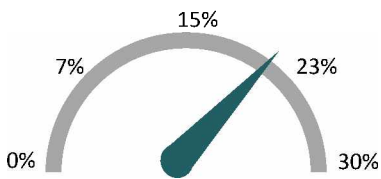
SOC Code: 17-2081

**Federal Government Definition:** Employees in the Environmental Engineer occupation research, design, plan, or perform engineering duties in the prevention, control, and remediation of environmental hazards using various engineering disciplines. Their work may include waste treatment, site remediation, or pollution control technology.

**The State Employs:**

- 1,259 full-time employees in this occupation in 21 classifications
- This occupation represents 10.5 percent of employees associated with Unit 9

Above Average Growth



**21.1%**

Projected Growth for Occupation in California by 2024 according to the EDD

The State's Total Compensation Leads/Lags Each Employer Group By:



Local Government

**6.7%**

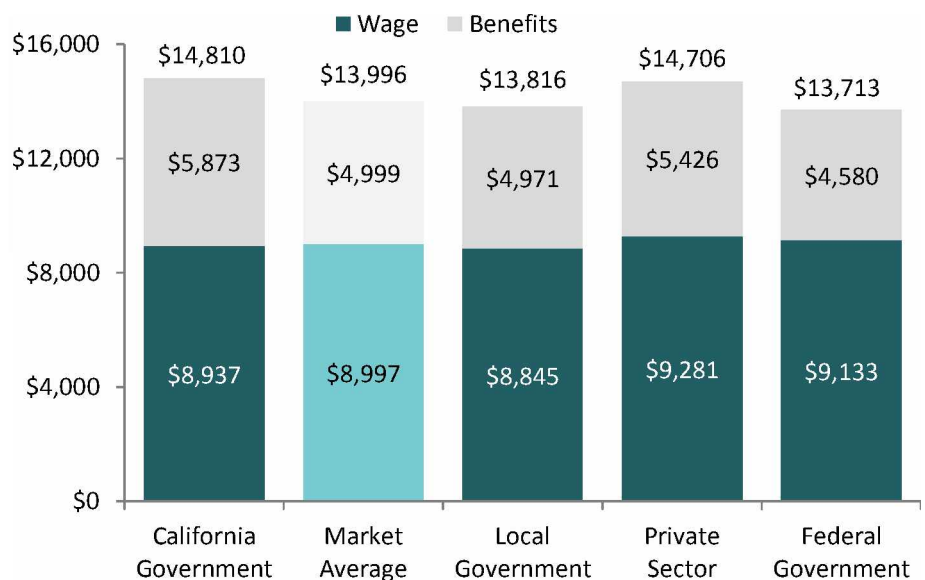
Private Sector

**0.7%**

Federal Government

**7.4%**

Statewide Monthly Median Total Compensation Comparison for the Environmental Engineers Occupation

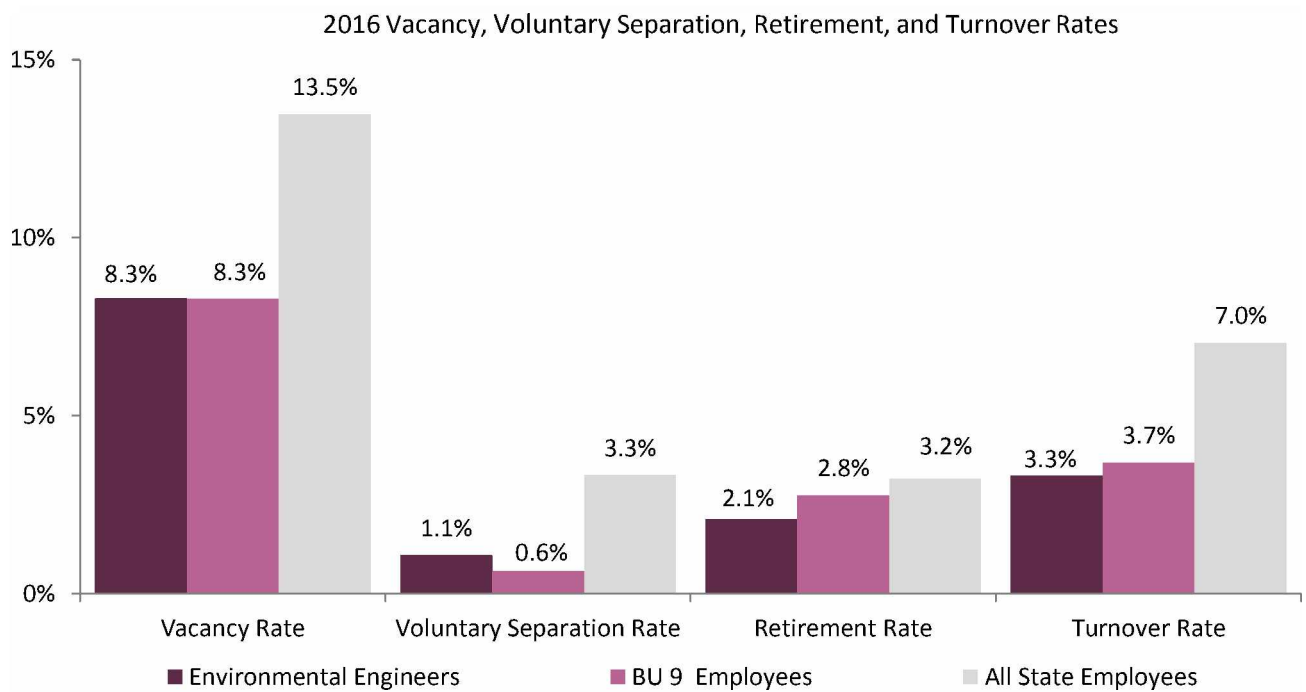


# 09

## Environmental Engineers

The following displays the average 2016 state employee workforce data for Environmental Engineers, Bargaining Unit 9 and related excluded employees, and for all state employees. See the Glossary of Terms for definitions.

Environmental Engineers	BU 9 Employees	All State Employees
Average Age <b>47</b>	Average Age <b>51</b>	Average Age <b>46</b>
Average Years of State Service <b>16</b>	Average Years of State Service <b>18</b>	Average Years of State Service <b>13</b>



# 09

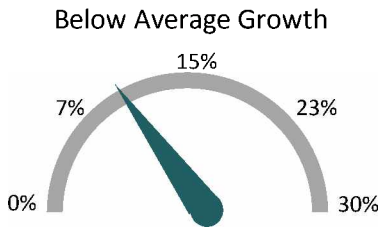
## Electrical Engineers

SOC Code: 17-2071

**Federal Government Definition:** Employees in the Electrical Engineer occupation research, design, develop, test, or supervise the manufacturing and installation of electrical equipment, components, or systems for commercial, industrial, military, or scientific use.

**The State Employs:**

- 708 full-time employees in this occupation in 19 classifications
- This occupation represents 5.9 percent of employees associated with Unit 9



**10.3%**

Projected Growth for Occupation in California by 2024 according to the EDD

The State's Total Compensation Leads/Lags Each Employer Group By:



Local Government

**-24.9%**

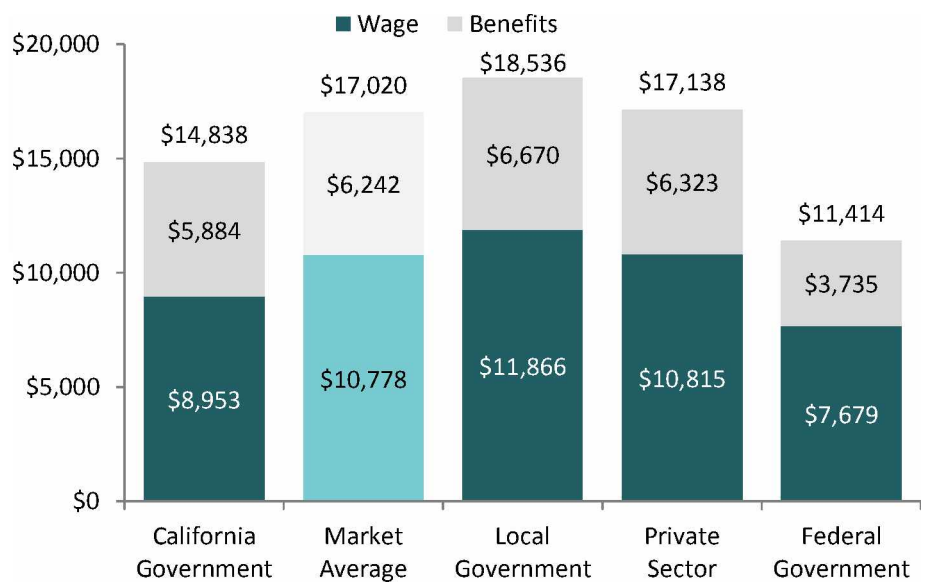
Private Sector

**-15.5%**

Federal Government

**23.1%**

Statewide Monthly Median Total Compensation Comparison for the Electrical Engineers Occupation

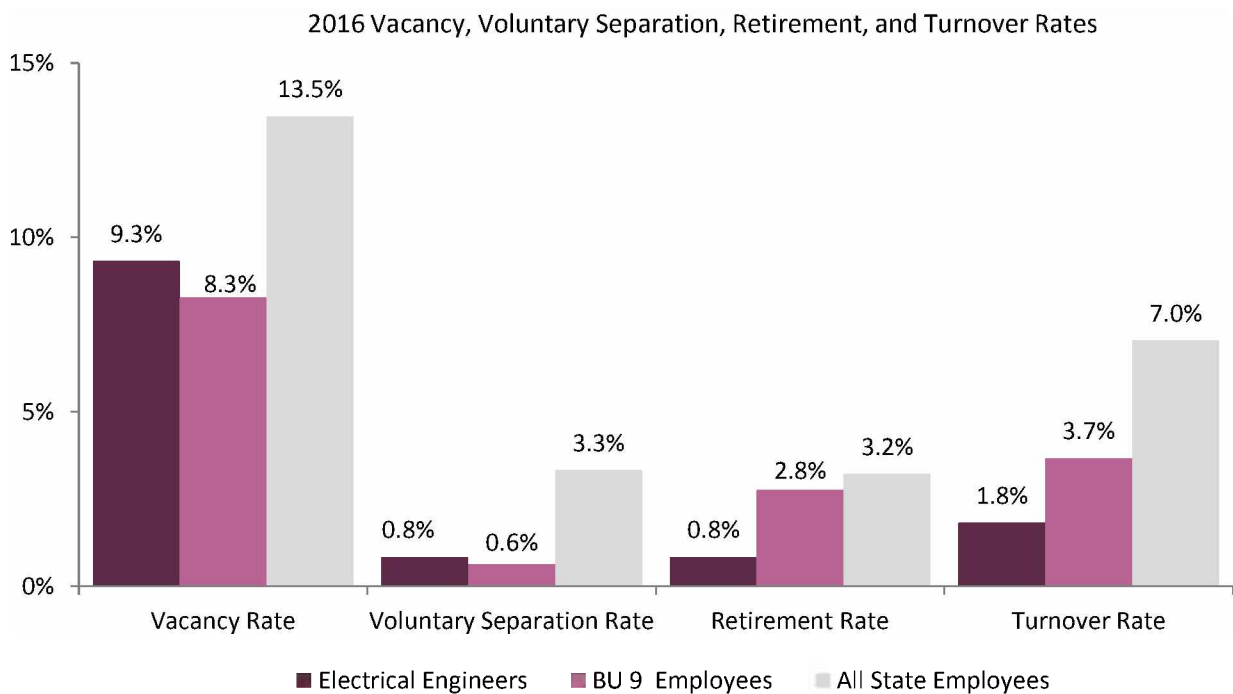


# 09

## Electrical Engineers

The following displays the average 2016 state employee workforce data for Electrical Engineers, Bargaining Unit 9 and related excluded employees, and for all state employees. See the Glossary of Terms for definitions.

Electrical Engineers	BU 9 Employees	All State Employees
Average Age <b>52</b>	Average Age <b>51</b>	Average Age <b>46</b>
Average Years of State Service <b>18</b>	Average Years of State Service <b>18</b>	Average Years of State Service <b>13</b>



# 10

## Bargaining Unit 10

Bargaining Unit 10 is made up of professional scientists. Three occupations were selected for this report based upon the strength of their match to the SOC description and the number of state employees in the occupation. The three occupations consist of both rank-and-file and related excluded employees. The total compensation dollars on the following pages may not always equal wages plus benefits due to rounding. See Appendix B for a detailed list of state classifications in each occupation.

### KEY STATISTICS\* FOR UNIT

**3,362**

Full-Time Employees

**244**

State Classifications

**29**

Occupations

### Occupations Examined for Bargaining Unit 10

- Environmental Scientists
- Chemists
- Epidemiologists

### KEY STATISTICS\* IN REPORT

**3**

Unit 10  
Occupations  
in Report

**52**

Unit 10  
Classifications  
in Report

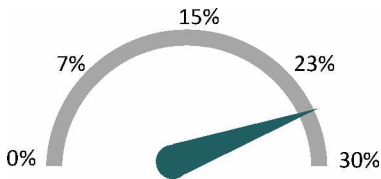
**78.1%**

of Unit 10  
Full-Time Employees  
in Report

\*Includes rank-and-file and related excluded employees.

# 10

Above Average Growth



## 25.3%

Projected Growth for Occupation in California by 2024 according to the EDD

## Environmental Scientists

SOC Code: 19-2041

**Federal Government Definition:** Employees in the Environmental Scientists occupation conduct research or perform investigations for the purpose of identifying, abating, or eliminating sources of pollutants or hazards that affect either the environment or the health of the population. Using knowledge of various scientific disciplines, environmental scientists may collect, synthesize, study, report, and recommend action based on data derived from measurements or observations of air, food, soil, water, and other sources.

**The State Employs:**

- 2,330 full-time employees in this occupation in 19 classifications
- This occupation represents 69.3 percent of employees associated with Unit 10

The State's Total Compensation Leads/Lags Each Employer Group By:



Local Government

### -1.0%

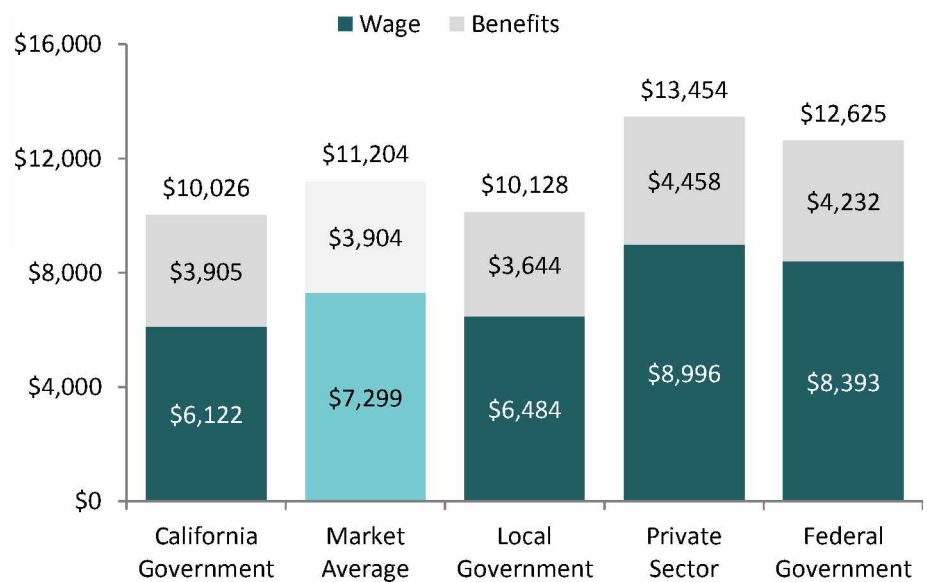
Private Sector

### -34.2%

Federal Government

### -25.9%

Statewide Monthly Median Total Compensation Comparison for the Environmental Scientists Occupation



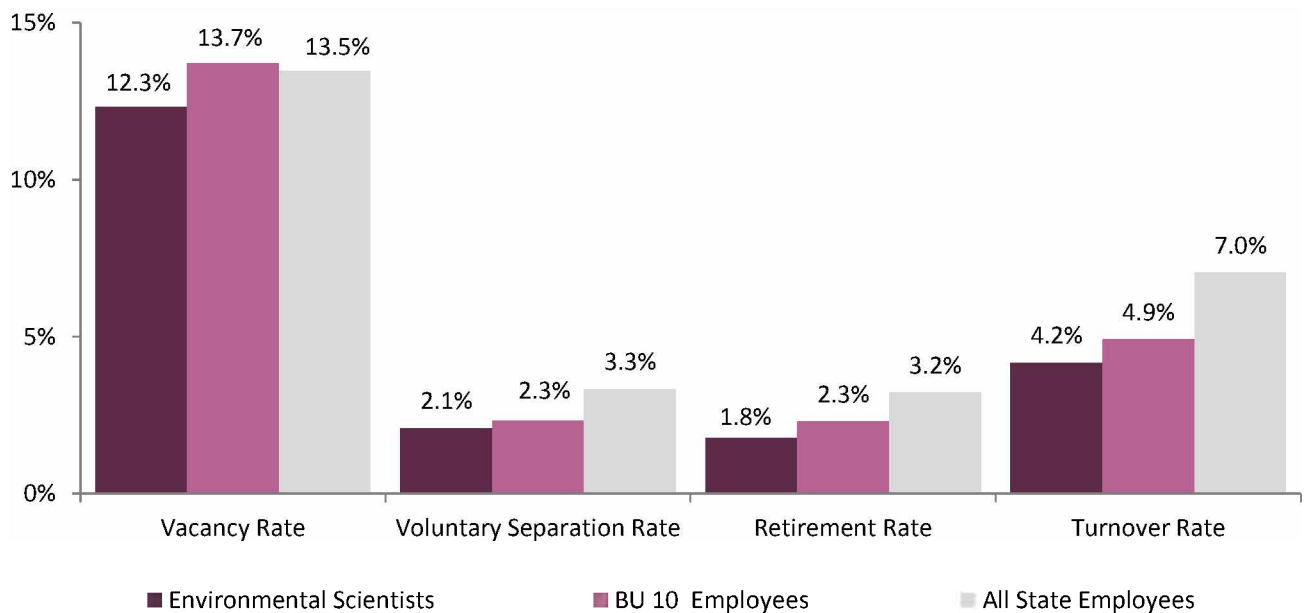
# 10

## Environmental Scientists

The following displays the average 2016 state employee workforce data for Environmental Scientists, Bargaining Unit 10 and related excluded employees, and for all state employees. See the Glossary of Terms for definitions.

Environmental Scientists	BU 10 Employees	All State Employees
Average Age <b>46</b>	Average Age <b>48</b>	Average Age <b>46</b>
Average Years of State Service <b>15</b>	Average Years of State Service <b>15</b>	Average Years of State Service <b>13</b>

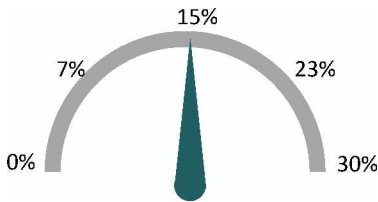
2016 Vacancy, Voluntary Separation, Retirement, and Turnover Rates





# 10

Average Growth



## 14.5%

Projected Growth for Occupation in California by 2024 according to the EDD

## Chemists

SOC Code: 19-2031

**Federal Government Definition:** Employees in the Chemist occupation conduct qualitative and quantitative chemical analyses or experiments in laboratories for quality or process control or to develop new products or knowledge.

**The State Employs:**

- 140 full-time employees in this occupation in 22 classifications
- This occupation represents 4.2 percent of employees associated with Unit 10

The State's Total Compensation Leads/Lags Each Employer Group By:



Local Government

## -7.9%

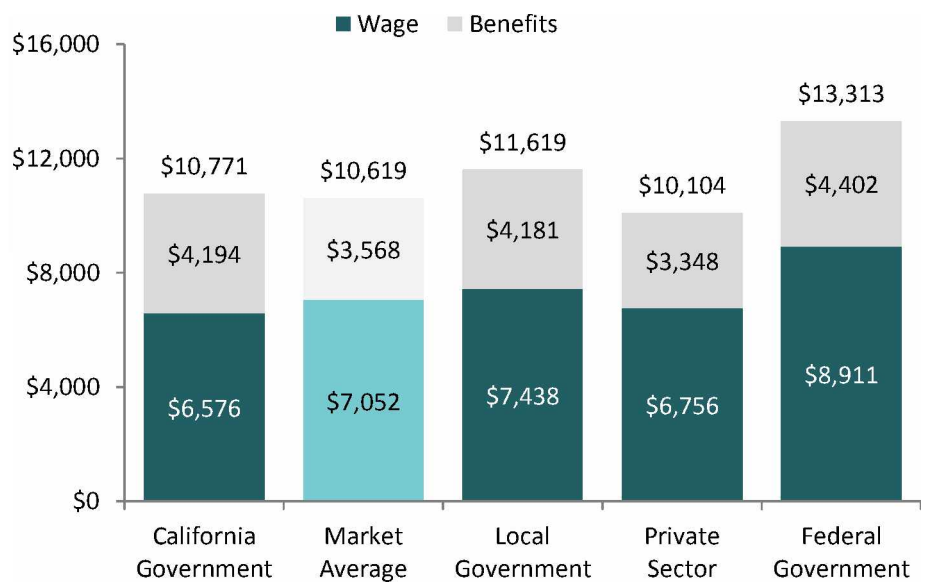
Private Sector

## 6.2%

Federal Government

## -23.6%

Statewide Monthly Median Total Compensation Comparison for the Chemists Occupation



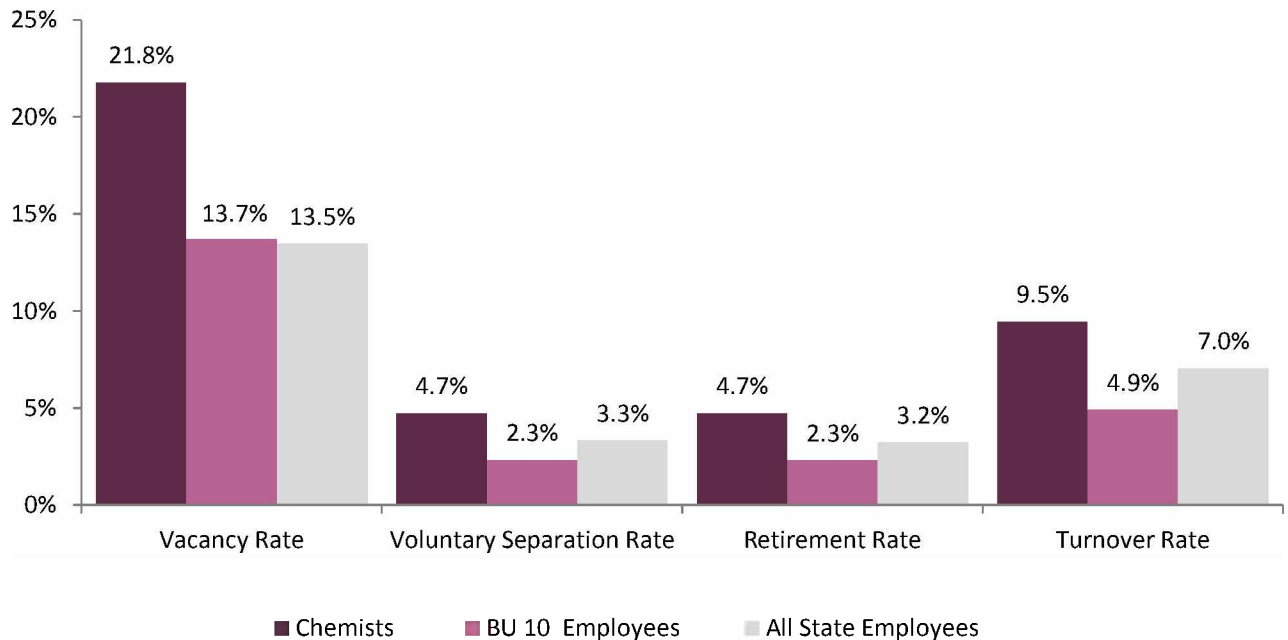
# 10

## Chemists

The following displays the average 2016 state employee workforce data for employees in the Chemists occupation, Bargaining Unit 10 employees, and for all state employees. See the Glossary of Terms for definitions.

Chemists	BU 10 Employees	All State Employees
Average Age <b>53</b>	Average Age <b>48</b>	Average Age <b>46</b>
Average Years of State Service <b>14</b>	Average Years of State Service <b>15</b>	Average Years of State Service <b>13</b>

2016 Vacancy, Voluntary Separation, Retirement, and Turnover Rates



# 10

## Epidemiologists

SOC Code: 19-1041

**Federal Government Definition:** Employees in the Epidemiologist occupation investigate and describe the determinants and distribution of disease, disability, or health outcomes. They may develop the means for prevention and control.

**The State Employs:**

- 158 full-time employees in this occupation in 11 classifications
- This occupation represents 4.7 percent of employees associated with Unit 10



The State's Total Compensation Leads/Lags Each Employer Group By:

Market Average  
**-6.7%**

Local Government

**8.5%**

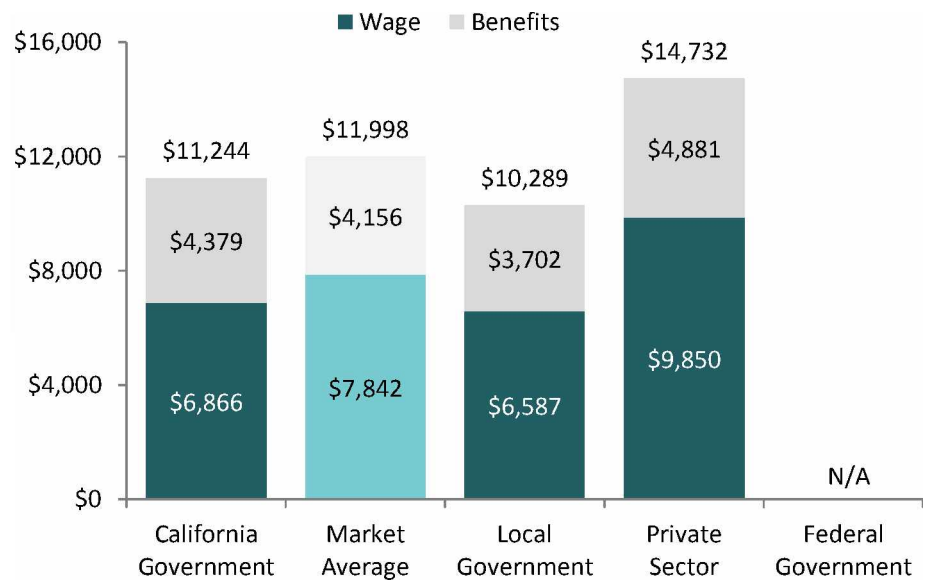
Private Sector

**-31.0%**

Federal Government

**N/A**

Statewide Monthly Median Total Compensation Comparison for the Epidemiologists Occupation



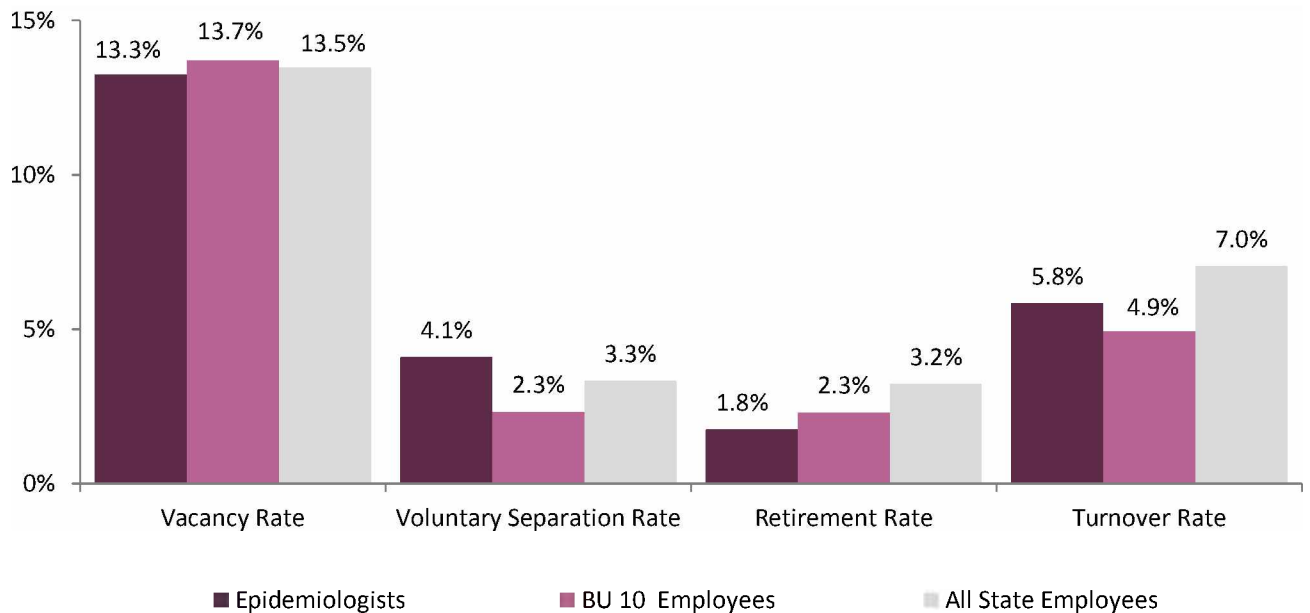
# 10

## Epidemiologists

The following displays the average 2016 state employee workforce data for employees in the Epidemiologist occupation, Bargaining Unit 10 employees, and for all state employees. See the Glossary of Terms for definitions.

Epidemiologists	BU 10 Employees	All State Employees
Average Age <b>47</b>	Average Age <b>48</b>	Average Age <b>46</b>
Average Years of State Service <b>11</b>	Average Years of State Service <b>15</b>	Average Years of State Service <b>13</b>

2016 Vacancy, Voluntary Separation, Retirement, and Turnover Rates



## Geographic Comparisons

When comparing compensation, it is important to recognize that wages can vary between geographic regions. The federal government has a policy of paying its white-collar employees more to work in four regions of California (Sacramento, Los Angeles, San Francisco, and San Diego) than it does in the rest of the state. Please refer to Appendix D-1 for details.

The tables on the following pages compare the total compensation in the same regions, as well as “All Other Counties,” using the 2014 Federal Locality Pay Area boundaries.



## Where State Employees Work

Although the Sacramento region is home to the greatest concentration of all state workers, approximately 65 percent are employed elsewhere in California. The table below illustrates the percentage of full-time state employees associated with each bargaining unit (rank-and-file and related excluded) working in each region.

Table 11: Percent of Full-Time State of California Employees by Region\*

Bargaining Unit	Sacramento Region	San Francisco Region	Los Angeles Region	San Diego County	All Other Counties
9	38.0%	17.7%	26.0%	5.7%	12.6%
10	56.3%	17.0%	12.5%	2.3%	11.8%
All State Workers	35.3%	17.6%	20.1%	3.9%	23.1%

\*State employee data derived from CA State Controller's Office. Percentages may not equal 100 due to rounding.

## Comparison in Sacramento Region

Table 12: Comparing State Employee Total Compensation  
in the Sacramento Region\*

SOC Code	Occupation Title	Local Govt.	Private Sector	Federal Govt.	Market Average
17-2051	Civil Engineers	3.1%	-	22.0%	9.6%
17-2071	Electrical Engineers	-17.1%	-6.6%	17.3%	-6.6%
17-2081	Environmental Engineers	0.4%	-	16.0%	4.0%
19-2041	Environmental Scientists	-15.7%	-	-	-15.7%
19-2031	Chemists	-3.1%	-	-	-3.1%

\*The Sacramento Region consists of the following counties: El Dorado, Nevada, Placer, Sacramento, Sutter, Yolo, and Yuba. Dashes (–) are used where data are not available. The median wage is used to determine total compensation and if state occupations are at/above or below the Market Average. A negative percent indicates the state’s total compensation is below that of the employer group in that column. Epidemiologists were not included in the Sacramento Region comparison because there was no data available.

## Comparison in San Francisco Region

Table 13: Comparing State Employee Total Compensation  
in the San Francisco Bay Area Region\*

SOC Code	Occupation Title	Local Govt.	Private Sector	Federal Govt.	Market Average
17-2051	Civil Engineers	-0.1%	1.0%	6.5%	0.3%
17-2071	Electrical Engineers	-8.9%	-23.9%	-	-23.6%
17-2081	Environmental Engineers	5.3%	-	-4.5%	2.5%
19-2041	Environmental Scientists	-8.7%	-49.1%	-53.8%	-31.5%
19-2031	Chemists	-17.9%	-22.4%	-29.3%	-22.6%
19-1041	Epidemiologists	-6.8%	-75.8%	-	-46.3%

\*The San Francisco Region consists of the following counties: Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Solano, and Sonoma. The median wage is used to determine total compensation and if state occupations are at/above or below the Market Average. Dashes (–) are used where data are not available. A negative percent indicates the state’s total compensation is below that of the employer group in that column.



## Comparison in Los Angeles Region

Table 14: Comparing State Employee Total Compensation in the Los Angeles Region\*

SOC Code	Occupation Title	Local Govt.	Private Sector	Federal Govt.	Market Average
17-2051	Civil Engineers	-2.3%	-0.6%	21.1%	-0.7%
17-2071	Electrical Engineers	-29.4%	-3.4%	18.3%	-7.7%
17-2081	Environmental Engineers	7.2%	4.1%	12.9%	7.0%
19-2041	Environmental Scientists	0.4%	-28.3%	-10.7%	-4.3%
19-2031	Chemists	-18.3%	28.3%	-16.3%	18.2%
19-1041	Epidemiologists	6.2%	9.4%	-	7.1%

\*The Los Angeles Region consists of the following six counties: Los Angeles, Orange, Riverside, San Bernardino, Santa Barbara, and Ventura. The median wage is used to determine total compensation and if state occupations are at/above or below the Market Average. Dashes (-) are used where data are not available. A negative percent indicates the state's total compensation is below that of the employer group in that column.

## Comparison in San Diego County

Table 15: Comparing State Employee Total Compensation  
in San Diego County

SOC Code	Occupation Title	Local Govt.	Private Sector	Federal Govt.	Market Average
17-2051	Civil Engineers	30.7%	2.4%	14.1%	26.7%
17-2071	Electrical Engineers	-	-13.1%	15.9%	-11.4%
17-2081	Environmental Engineers	14.7%	-	14.9%	14.8%
19-2041	Environmental Scientists	-8.9%	-	-5.0%	-6.8%
19-2031	Chemists	24.7%	-	-13.4%	12.0%

The median wage is used to determine total compensation and if state occupations are at/above or below the Market Average. Dashes (–) are used where data are not available. A negative percent indicates the state’s total compensation is below that of the employer group in that column. Epidemiologists were not included in the San Diego County comparison because there was no data available.

## Comparison in All Other Counties

Table 16: Comparing State Employee Total Compensation  
in All Other Counties in California\*

SOC Code	Occupation Title	Local Govt.	Private Sector	Federal Govt.	Market Average
17-2051	Civil Engineers	19.6%	3.0%	32.4%	20.0%
17-2071	Electrical Engineers	11.6%	-16.6%	33.4%	11.1%
17-2081	Environmental Engineers	21.1%	-	-	21.1%
19-2041	Environmental Scientists	15.3%	-7.3%	-0.8%	11.6%
19-2031	Chemists	-	-	-27.2%	-27.2%
19-1041	Epidemiologists	27.3%	-	-	27.3%

\*The All Other Counties in California include: Alpine, Amador, Butte, Calaveras, Colusa, Del Norte, Fresno, Glenn, Humboldt, Imperial, Inyo, Kern, Kings, Lake, Lassen, Madera, Mariposa, Mendocino, Merced, Modoc, Mono, Plumas, San Luis Obispo, Shasta, Sierra, Siskiyou, Stanislaus, Tehama, Trinity, Tulare, and Tuolumne. The median wage is used to determine total compensation and if state occupations are at/above or below the Market Average. Dashes (–) are used where data are not available. A negative percent indicates the state’s total compensation is below that of the employer group in that column.

## State Benefits Not Included in Total Compensation

The state offers its employees some benefits which were not included in the calculation of state employee total compensation costs in this report. This section describes these benefits.

### **Bereavement Leave**

State employees may receive up to three days of leave following the death of a family member or person in the employee's household.

### **California Works Well**

The California Works Well Wellness Program is designed to reduce sickness-related absenteeism and increase employee productivity, with the long-term goal of reducing overall health care costs. The program informs employees about chronic disease risk-factors and creates opportunities for physical activity and healthy eating at work, along with other interventions such as smoking cessation, weight management, and biometric screenings. Wellness programs are managed and offered independently at each department.

### **Employee Assistance Program (EAP)**

All active state employees and their dependents are eligible to participate in the EAP. This program is provided by the State of California as part of the state's commitment to promoting employee health and wellbeing. It is offered at no charge to the employee and provides a valuable resource for support and information during difficult times, as well as consultation on day-to-day concerns. EAP includes an assessment, short-term counseling, and referral service designed to provide members with assistance in managing everyday concerns. EAP can assist with marriage, family, and relationship issues; emotional, personal and stress concerns; drug and alcohol abuse; healthy lifestyles; and work-life balance. Customer service representatives are available 24 hours a day, seven days a week, to confidentially discuss concerns and ensure members receive the assistance they need.

**Flexible Schedules**

The state offers flexible schedules to many of its workers, often in the form of an Alternate Work Week Schedule. This schedule allows employees and supervisors to mutually agree upon a varied distribution of their normal work hours. It does not change the number of hours worked, but simply allows each individual the flexibility to rearrange their work schedule to better meet their personal needs while also considering the needs of the office.

**Jury Duty Leave**

State employees called for jury duty are granted leave time during their service. Employees are not entitled to juror pay but are permitted to keep mileage payments.

**License and Professional Association Membership**

Depending upon the bargaining unit agreement, the state may pay for employees to retain professional licenses or reimburse employees for membership in job-related professional associations. For example, the state reimburses full-time physicians and nurses for license renewal fees if required to maintain a license as a condition of state employment. See related Memoranda of Understandings for more information.

**Long Term Care**

CalPERS Long-term care (LTC) is an optional, employee-paid benefit available to all active members, retirees, and their eligible family members. LTC refers to the services available to people that have difficulty managing the activities of daily living due to illness, injury, disability, cognitive disorder or aging. This is an employee-paid program, so there is no cost to the state for this benefit.

**Paid Leave for Promotional Exams/Promotional Interviews**

State employees may be granted leave time to participate in civil-service examinations and attend interviews. (Gov. Code §19991)

**Reimbursement Accounts**

The Flex Elect program offers employees a voluntary pre-tax reimbursement account for out-of-pocket medical and dependent care expenses.

**Retiree Health Insurance (Other Post-Employment Benefits)**

State employees, along with qualifying dependents, are eligible for comprehensive health insurance coverage once they retire with sufficient years of state service. The state contributed, on average, \$11,233 for each retiree's health insurance premium in Fiscal Year 16-17. Refer to Appendix D-4 for more details.

**State Defined Contribution Program: Savings Plus**

Through Savings Plus, most state employees may establish and manage 401(k) and 457 plans. In 2016, employees were allowed to save up to \$18,000 in each plan (\$36,000 combined), if under the age of 50; and up to \$24,000 in each plan (\$48,000 combined) if 50 or older. Savings Plus allows employees to save for their retirement on both a before-tax basis and after-tax basis with the designated Roth feature.

Because the state does not contribute to these accounts, it does not affect state employee total compensation costs. However, the program still provides employees with a valuable benefit by offering an additional opportunity to save for retirement through a well-diversified mix of investment funds with low investment fees and low administrative costs to the participant.

**Supplemental Life Insurance**

Excluded employees enrolled in the State-paid group term life insurance plan can purchase additional insurance coverage from MetLife. Under the voluntary supplemental life insurance plan, these employees may elect additional coverage in increments of \$10,000 up to the lesser of \$750,000 or eight times his or her basic annual earnings.

**Teleworking**

In some offices, the state encourages the use of teleworking (working from home) as a management work option. Appropriately planned and managed, telework can benefit managers, employees, and customers of the State of California.

**Time-Off to Maintain Licensure**

For state employees that must maintain professional licensure as a condition of employment, the state allows these employees time off for educational leave without loss of compensation. See related Memoranda of Understandings for more information.

**Training and Professional Development**

The Statewide Training Center (STC) program provides classroom and virtual training for state employees. This training includes competency based training, soft skills training, and leadership training. The STC also provides leadership and guidance to departments on training and professional development.

**Transportation Benefits**

There are two transportation-related benefits the state offers to employees. The first is pre-tax parking, which allows employees to have their taxable income reduced by a specific dollar amount for work-related parking fees. The other benefit is the Transit and Vanpool Incentive Program, where employees receive a transit or vanpool subsidy of 75 percent, up to a maximum of \$65. The vanpool coordinator/driver for each vanpool receives a reimbursement amount of \$100 per month.

**Uniform/Equipment Allowance**

Depending upon the bargaining unit, some state employees receive an allowance or reimbursement for uniforms and/or equipment. See related Memoranda of Understandings for more information.

For more information on state employee benefits:

<http://calhr.ca.gov/employees/Pages/salary-and-benefits.aspx>

## Glossary of Terms

These definitions are used for the purposes of this report. Definitions originated from the Bureau, the EDD, or CalHR.

<b>Annual Hours Worked</b>	The Bureau calculates Annual Hours Worked as follows: add annual scheduled hours plus any overtime hours worked during the year, and then subtract all vacation, holiday and personal leave hours accrued during the year as well as sick leave hours used during the year.
<b>Annual Leave</b>	Annual Leave is a consolidated leave plan. Consolidated leave plans provide a single amount of time off for workers to use for any of a number of purposes, such as vacation, illness, and personal business. Upon separation or retirement, state employees are compensated for any unused hours.
<b>Annual Scheduled Hours</b>	This is the total number of hours in a year that workers are scheduled to work. Most full-time workers are scheduled to work 40 hours a week, 52 weeks a year, which equates to 2,080 annual scheduled hours.
<b>Bargaining Units</b>	A group of employees working in similar classifications or occupations represented by a union for bargaining purposes.
<b>Base Salary</b>	Wages paid for work performed during a unit of time, such as monthly. Base salary does not include overtime or incentive pay.
<b>Bureau</b>	The U.S. Bureau of Labor Statistics is part of the Department of Labor and is the principal fact-finding agency for the federal government in the broad field of labor economics and statistics.
<b>CB/ID</b>	Collective Bargaining Identifier (CB/ID) refers to a three-digit code that is assigned to each job classification. CB/ID designates if a classification is rank-and-file (R), managerial (M), supervisory (S), confidential (C), exempt/excluded (E) or unassigned (U); as well as the collective bargaining unit the classification is aligned to, if applicable. CB/IDs for Bargaining Unit 9 and its related excluded employees look like this: R09, M09, S09, C09, E09, and U09.
<b>Defined Benefit Retirement Plan</b>	A defined benefit retirement plan provides employees with guaranteed retirement benefits that are based on a benefit formula. A participant's retirement age, length of service, and pre-retirement earnings may affect the benefit received.
<b>Defined Contribution Retirement Plan</b>	A defined contribution retirement plan specifies the level of employer and employee contributions (retirement savings) and places those contributions into individual employee accounts. Retirement benefits are based on the level of contributions, plus earnings, that have accumulated in the account at the time of retirement.



<b>Disability Insurance</b>	Disability insurance pays part of a worker's wages if he or she has to stop working because of a non-work-related illness or injury.
<b>Employee Benefit Incidence and Provisions</b>	The Bureau produces this report, which displays the percentage of workers with access to and participation in employer provided benefit plans (such as retirement, health care, life, short-term and long-term disability insurance, and paid leave benefits).
<b>ECEC</b>	The Bureau produces the Employer Costs for Employee Compensation (ECEC) report, which shows employer costs per hour worked for wages and individual benefits. Cost data are presented in both dollar amounts and as percentages of compensation.
<b>ECI</b>	The Bureau produces the Employment Cost Index (ECI), which is a measure of the change in the cost of labor, free from the influence of employment shifts among occupations and industries. The series measures changes in compensation costs (wages and salaries and costs for employee benefits).
<b>EDD</b>	The Employment Development Department (EDD) administers the state's payroll tax program and offers a variety of services to Californians under the Job Service, Unemployment Insurance (UI), State Disability Insurance (SDI), Workforce Investment, and Labor Market Information programs.
<b>Employee Merit Awards</b>	There are four merit awards given to qualifying state employees in California. 1) Employee Suggestion Program (ESP) – Employees formally submit their ideas to reduce or eliminate state expenditures or improve the safety or the operation of the state. 2) Medal of Valor (MOV) – The highest honor California bestows upon its public servants. 3) Superior Accomplishment Award (SAA) – Departments may award employees for a job performance resulting in exceptional contribution to improving state government. 4) The 25 Year/Retirement Service Award – Employees with 25 years of state service and retiring employees with 25 years or more of state service may receive a memento.
<b>Flex Elect</b>	The State of California's Flex Elect program offers two types of employee benefits: pre-tax reimbursement accounts for out-of-pocket medical and dependent care expenses, and cash in lieu of state-sponsored health and/or dental benefits for employees who have other qualifying group health coverage or other dental coverage.
<b>Health Insurance Plan</b>	Insurance plans that include coverage for one or more of the following: medical care, dental care, and vision care.

<b>Holiday Bonus</b>	Payment to employees as a holiday gift. For State of California employees, in 2016, the Governor granted employees four hours of paid Informal Time Off (ITO) leave to use on either Christmas Eve or New Year's Eve. ITO was calculated as a Holiday Bonus.
<b>Holiday Leave</b>	Holidays are days off from work on days of special religious, cultural, social, or patriotic significance on which work and business ordinarily cease.
<b>Holiday Premium Pay</b>	Payment for working a designated holiday; usually an add-on to a base rate.
<b>Involuntary Separation</b>	Involuntary separations include AWOL, death, dismissal, failure to meet employee conditions, fault no layoff, illegal appointment, and resignation with fault.
<b>Legally Required Benefits</b>	Legally required benefits include the employer's costs for Social Security, Medicare, Federal and State unemployment insurance, and workers' compensation. Most peace officers, firefighters and safety employees do not participate in Social Security.
<b>Life Insurance</b>	A contract that pays the beneficiary a set sum of money upon the death of the policyholder. These plans pay benefits usually in the form of a lump sum, but they may also be distributed as an annuity.
<b>Longevity Pay</b>	Payment to an employee based on seniority or length of service with an employer.
<b>Long-Term Disability</b>	Provides a monthly benefit to employees who, due to a non-work-related injury or illness, are unable to perform the duties of their normal occupation or any other, for periods of time extending beyond their short-term disability or sickness and accident insurance.
<b>Market Average</b>	To calculate this, CalHR multiplied the Bureau's estimated number of workers in an occupation for an employer group by its total compensation. Totals for the three employer groups (local government, private sector, and federal government) were then summed up, and then divided by the total number of employees for all three groups to find the Market Average.
<b>Mean</b>	The mean is the arithmetic average of a group of numbers.
<b>Median</b>	The median is the midpoint of a group of numbers.
<b>NCS</b>	The National Compensation Survey is a detailed compensation survey conducted by the Bureau. The NCS produces three separate reports: the Employment Cost Index, the Employee Benefit Incidence and Provisions, and the Employer Costs for Employee Compensation.

<b>Occupation</b>	A set of activities or tasks that employees are paid to perform. Employees that perform essentially the same tasks are in the same occupation, whether or not they work in the same industry. Some occupations are concentrated in a few particular industries; other occupations are found in many industries.
<b>OES</b>	The Occupational Employment Statistics (OES) Survey is a labor market survey of private sector, local, state and federal government wages. The survey is conducted jointly by the Bureau of Labor Statistics and State Workforce Agencies, such as the California Employment Development Department.
<b>OPEB</b>	Other Post-Employment Benefits (OPEB) are benefits other than pensions received in retirement. OPEB generally takes the form of health insurance and dental, vision, prescription, or other healthcare benefits provided to eligible retirees, including, in some cases, their beneficiaries. It may also include some types of life insurance, legal services, and other benefits.
<b>OPM</b>	The U.S. Office of Personnel Management (OPM) is the federal government's chief human resources agency and personnel policy manager, directing human resources policy; administering retirement, healthcare, and insurance programs; and oversight of merit-based and inclusive hiring into the federal government's civil service.
<b>Overtime Pay</b>	Payment for work over and above the employee's regular pay in excess of a specified number of hours per day or per week.
<b>Paid Leave</b>	Leave from work (or pay in lieu of time off) provided on an annual basis and normally taken in blocks of days or weeks by an employee. Vacation, sick and holiday paid leave are the most common.
<b>Personal Leave</b>	Personal leave is a general-purpose leave benefit, used for reasons important to the individual employee, but not otherwise provided by other forms of leave. Some employers place restrictions on the purposes for which personal leave may be used. State employees receive Professional Development Days (PDD) which falls into this category.
<b>Private Sector</b>	The private sector is comprised of for-profit and not-for-profit businesses and organizations. By contrast, the public sector is made up of government employers.
<b>Retirement Plans</b>	Includes defined benefit pension plans and defined contribution retirement plans.
<b>Related Excluded</b>	Employees in classifications that do not have collective bargaining rights under the Ralph C. Dills Act, but whose job duties are related to rank-and-file employees in a bargaining unit. These employees are generally designated managerial, confidential, exempt, or supervisory.

<b>Retirement Rate</b>	The retirement rate is calculated by dividing the count of all service and disability retirements for the year into an annual average of employees.
<b>Shift Differential</b>	Payment over and above an employee's regular pay for working a nonstandard shift, typically evenings, nights, and weekends.
<b>Sick Leave</b>	Employer paid time off offered to employees to compensate for time away from work while sick or injured.
<b>Short-Term Disability</b>	Provides short-term (typically 26 weeks) income protection to employees who are unable to work due to a non-work-related accident or illness.
<b>SOC</b>	Standard Occupational Classification (SOC) system is a list of defined occupations maintained by the federal government's Office of Management and Budget. It has been adopted by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. The 2010 SOC system contains 840 detailed occupations.
<b>State Classification</b>	A defined state job. The State of California maintains definitions and salaries for approximately 3,800 classifications.
<b>Supplemental Pay</b>	Supplemental pay includes overtime and premium pay for work in addition to the regular work schedule (such as weekends and holidays), shift differentials, and nonproduction bonuses (such as referral bonuses and lump-sum payments provided in lieu of wage increases).
<b>Turnover Rate</b>	The turnover rate is calculated by dividing the count of all voluntary and involuntary separations and retirements for the year into an annual average of employees.
<b>Unemployment Insurance</b>	A joint federal-state program, established in 1935 under the Social Security Act, under which state administered funds obtained through payroll taxes provide payments to eligible unemployed persons for specified periods of time. Levels of benefits and tax rates are established by each state.
<b>Vacancy Rate</b>	The vacancy rate is calculated by dividing an annual average of full-time equivalent vacant positions into the annual average of all established full-time equivalent positions.
<b>Vacation Leave</b>	Time-off from work normally taken in days or weeks that provide employees with a rest or break from work. The amount of time-off may vary based on an employee's length-of-service with the employer or it may be a fixed number of days or weeks. It is normally paid at an employee's normal hourly rate or salary.

<b>Value of Paid Leave</b>	Vacation, annual leave, holiday, and other employer paid leave hours accrued (and assumed used) are added to sick leave hours used during the year. This number is multiplied by an hourly rate for paid leave to find the annual cost to the employer.
<b>Voluntary Separation Rate</b>	The voluntary separation rate is calculated by dividing the count of all voluntary separations (not including retirements) for the year into an annual average of employees.
<b>Wage – OES</b>	A wage includes commission, tips, deadheading pay, guaranteed pay, on-call pay, hazard pay, incentive pay, piece rate, portal-to-portal pay, production bonuses, and cost-of-living allowances.
<b>Wage – NCS</b>	Same as above only longevity and recruitment and retention bonuses are not included in the wage.
<b>Weekend Premium Pay</b>	Payment over and above an employee's regular pay for working on a Saturday, Sunday, or other non-scheduled workday.
<b>Workers' Compensation</b>	Workers' compensation provides wage replacement and medical benefits to employees injured in the course of employment. This is a legally required benefit paid by the employer.

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## Attachments

The following attachments are included with this report:

**Appendix A** – Detailed Comparison for Each Occupation

**Appendix B** – Detailed List of State Classifications in Occupations

**Appendix C** – Benefit Percentages

**Appendix D** – Other Information Related to the Report



## Appendix A

### Detailed Comparison for Each Occupation

On the following pages you will find detailed comparisons of monthly wage and total compensation by employer group and labor market for each occupation.

## State Employee Wage and Total Compensation Comparisons to the Market Average

Bargaining Unit	SOC Code	Occupation Title	Market Average Median Wage	Market Average Total Compensation
9	17-2051	Civil Engineers	-0.9%	4.9%
9	17-2071	Electrical Engineers	-20.4%	-14.7%
9	17-2081	Environmental Engineers	-0.7%	5.5%
10	19-2041	Environmental Scientists & Specialists, Including Health	-19.2%	-11.7%
10	19-2031	Chemists	-7.2%	1.4%
10	19-1041	Epidemiologists	-14.2%	-6.7%

Please Note: A negative percentage indicates a lag for the state.

The Private Sector wages are from employers with 500 employees or more.

The Market Average is a weighted average for all three employer groups based upon total compensation and employment estimates for each employer.

## Summary Sheet for State of California

SOC Code: 17-2051 - Civil Engineers

State Median Mo. Wage	State Average Mo. Benefits	State Median Mo. Total Comp
\$8,984	65.7%	\$14,888

### Statewide

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$9,067	-0.9%	\$14,157	4.9%
Local Government	\$9,179	-2.2%	\$14,339	3.7%
Private Sector (500+)	\$9,304	-3.6%	\$14,743	1.0%
Federal Government	\$7,834	12.8%	\$11,935	19.8%

### Sacramento

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$8,679	3.4%	\$13,455	9.6%
Local Government	\$9,238	-2.8%	\$14,431	3.1%
Private Sector (500+)	-	-	-	-
Federal Government	\$7,623	15.1%	\$11,612	22.0%

### San Francisco

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$9,502	-5.8%	\$14,847	0.3%
Local Government	\$9,540	-6.2%	\$14,903	-0.1%
Private Sector (500+)	\$9,303	-3.6%	\$14,742	1.0%
Federal Government	\$9,133	-1.7%	\$13,913	6.5%

### Los Angeles

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$9,588	-6.7%	\$14,986	-0.7%
Local Government	\$9,751	-8.5%	\$15,232	-2.3%
Private Sector (500+)	\$9,452	-5.2%	\$14,978	-0.6%
Federal Government	\$7,712	14.2%	\$11,748	21.1%

### San Diego

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$6,994	22.1%	\$10,913	26.7%
Local Government	\$6,607	26.5%	\$10,320	30.7%
Private Sector (500+)	\$9,170	-2.1%	\$14,531	2.4%
Federal Government	\$8,392	6.6%	\$12,784	14.1%

### Other Counties

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$7,636	15.0%	\$11,907	20.0%
Local Government	\$7,667	14.7%	\$11,976	19.6%
Private Sector (500+)	\$9,111	-1.4%	\$14,437	3.0%
Federal Government	\$6,609	26.4%	\$10,068	32.4%

Please Note: A negative percentage indicates a lag for the state.

A dash (-) indicates that no information was available.

The Private Sector wages are from employers with 500 employees or more

## Summary Sheet for State of California

SOC Code: 17-2071 - Electrical Engineers

State Median Mo. Wage	State Average Mo. Benefits	State Median Mo. Total Comp
\$8,953	65.7%	\$14,838

### Statewide

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$10,778	-20.4%	\$17,020	-14.7%
Local Government	\$11,866	-32.5%	\$18,536	-24.9%
Private Sector (500+)	\$10,815	-20.8%	\$17,138	-15.5%
Federal Government	\$7,679	14.2%	\$11,414	23.1%

### Sacramento

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$10,151	-13.4%	\$15,810	-6.6%
Local Government	\$11,120	-24.2%	\$17,371	-17.1%
Private Sector (500+)	\$9,986	-11.5%	\$15,824	-6.6%
Federal Government	\$8,258	7.8%	\$12,274	17.3%

### San Francisco

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$11,577	-29.3%	\$18,340	-23.6%
Local Government	\$10,346	-15.6%	\$16,162	-8.9%
Private Sector (500+)	\$11,605	-29.6%	\$18,389	-23.9%
Federal Government	-	-	-	-

### Los Angeles

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$10,136	-13.2%	\$15,986	-7.7%
Local Government	\$12,293	-37.3%	\$19,202	-29.4%
Private Sector (500+)	\$9,677	-8.1%	\$15,335	-3.4%
Federal Government	\$8,153	8.9%	\$12,118	18.3%

### San Diego

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$10,462	-16.8%	\$16,529	-11.4%
Local Government	-	-	-	-
Private Sector (500+)	\$10,592	-18.3%	\$16,785	-13.1%
Federal Government	\$8,392	6.3%	\$12,474	15.9%

### Other Counties

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$8,540	4.6%	\$13,197	11.1%
Local Government	\$8,397	6.2%	\$13,117	11.6%
Private Sector (500+)	\$10,920	-22.0%	\$17,304	-16.6%
Federal Government	\$6,651	25.7%	\$9,886	33.4%

Please Note: A negative percentage indicates a lag for the state.

A dash (-) indicates that no information was available.

The Private Sector wages are from employers with 500 employees or more

## Summary Sheet for State of California

SOC Code: 17-2081 - Environmental Engineers

State Median Mo. Wage	State Average Mo. Benefits	State Median Mo. Total Comp
\$8,937	65.7%	\$14,810

### Statewide

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$8,997	-0.7%	\$13,996	5.5%
Local Government	\$8,845	1.0%	\$13,816	6.7%
Private Sector (500+)	\$9,281	-3.8%	\$14,706	0.7%
Federal Government	\$9,133	-2.2%	\$13,713	7.4%

### Sacramento

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$9,177	-2.7%	\$14,219	4.0%
Local Government	\$9,443	-5.7%	\$14,751	0.4%
Private Sector (500+)	-	-	-	-
Federal Government	\$8,289	7.2%	\$12,445	16.0%

### San Francisco

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$9,359	-4.7%	\$14,441	2.5%
Local Government	\$8,982	-0.5%	\$14,030	5.3%
Private Sector (500+)	-	-	-	-
Federal Government	\$10,303	-15.3%	\$15,470	-4.5%

### Los Angeles

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$8,820	1.3%	\$13,778	7.0%
Local Government	\$8,799	1.5%	\$13,745	7.2%
Private Sector (500+)	\$8,964	-0.3%	\$14,205	4.1%
Federal Government	\$8,593	3.8%	\$12,902	12.9%

### San Diego

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$8,306	7.1%	\$12,611	14.8%
Local Government	\$8,088	9.5%	\$12,634	14.7%
Private Sector (500+)	-	-	-	-
Federal Government	\$8,393	6.1%	\$12,601	14.9%

### Other Counties

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$7,482	16.3%	\$11,687	21.1%
Local Government	\$7,482	16.3%	\$11,687	21.1%
Private Sector (500+)	-	-	-	-
Federal Government	-	-	-	-

Please Note: A negative percentage indicates a lag for the state.

A dash (-) indicates that no information was available.

The Private Sector wages are from employers with 500 employees or more

## Summary Sheet for State of California

SOC Code: 19-2041 - Environmental Scientists & Specialists, Including Health

State Median Mo. Wage	State Average Mo. Benefits	State Median Mo. Total Comp
\$6,122	63.8%	\$10,026

### Statewide

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$7,299	-19.2%	\$11,204	-11.7%
Local Government	\$6,484	-5.9%	\$10,128	-1.0%
Private Sector (500+)	\$8,996	-47.0%	\$13,454	-34.2%
Federal Government	\$8,393	-37.1%	\$12,625	-25.9%

### Sacramento

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$7,427	-21.3%	\$11,601	-15.7%
Local Government	\$7,427	-21.3%	\$11,601	-15.7%
Private Sector (500+)	-	-	-	-
Federal Government	-	-	-	-

### San Francisco

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$8,662	-41.5%	\$13,183	-31.5%
Local Government	\$6,974	-13.9%	\$10,894	-8.7%
Private Sector (500+)	\$9,996	-63.3%	\$14,950	-49.1%
Federal Government	\$10,253	-67.5%	\$15,423	-53.8%

### Los Angeles

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$6,766	-10.5%	\$10,462	-4.3%
Local Government	\$6,391	-4.4%	\$9,983	0.4%
Private Sector (500+)	\$8,602	-40.5%	\$12,865	-28.3%
Federal Government	\$7,381	-20.6%	\$11,103	-10.7%

### San Diego

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$6,997	-14.3%	\$10,705	-6.8%
Local Government	\$6,991	-14.2%	\$10,920	-8.9%
Private Sector (500+)	-	-	-	-
Federal Government	\$7,002	-14.4%	\$10,533	-5.0%

### Other Counties

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$5,724	6.5%	\$8,858	11.6%
Local Government	\$5,439	11.1%	\$8,497	15.3%
Private Sector (500+)	\$7,195	-17.5%	\$10,760	-7.3%
Federal Government	\$6,717	-9.7%	\$10,105	-0.8%

Please Note: A negative percentage indicates a lag for the state.

A dash (-) indicates that no information was available.

The Private Sector wages are from employers with 500 employees or more

## Summary Sheet for State of California

SOC Code: 19-2031 - Chemists

State Median Mo. Wage	State Average Mo. Benefits	State Median Mo. Total Comp
\$6,576	63.8%	\$10,771

### Statewide

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$7,052	-7.2%	\$10,619	1.4%
Local Government	\$7,438	-13.1%	\$11,619	-7.9%
Private Sector (500+)	\$6,756	-2.7%	\$10,104	6.2%
Federal Government	\$8,911	-35.5%	\$13,313	-23.6%

### Sacramento

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$7,109	-8.1%	\$11,105	-3.1%
Local Government	\$7,109	-8.1%	\$11,105	-3.1%
Private Sector (500+)	-	-	-	-
Federal Government	-	-	-	-

### San Francisco

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$8,803	-33.9%	\$13,205	-22.6%
Local Government	\$8,129	-23.6%	\$12,698	-17.9%
Private Sector (500+)	\$8,817	-34.1%	\$13,186	-22.4%
Federal Government	\$9,321	-41.7%	\$13,925	-29.3%

### Los Angeles

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$5,824	11.4%	\$8,805	18.2%
Local Government	\$8,155	-24.0%	\$12,738	-18.3%
Private Sector (500+)	\$5,163	21.5%	\$7,722	28.3%
Federal Government	\$8,384	-27.5%	\$12,525	-16.3%

### San Diego

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$6,186	5.9%	\$9,477	12.0%
Local Government	\$5,190	21.1%	\$8,107	24.7%
Private Sector (500+)	-	-	-	-
Federal Government	\$8,178	-24.3%	\$12,217	-13.4%

### Other Counties

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$9,173	-39.5%	\$13,703	-27.2%
Local Government	-	-	-	-
Private Sector (500+)	-	-	-	-
Federal Government	\$9,173	-39.5%	\$13,703	-27.2%

Please Note: A negative percentage indicates a lag for the state.

A dash (-) indicates that no information was available.

The Private Sector wages are from employers with 500 employees or more

## Summary Sheet for State of California

SOC Code: 19-1041 - Epidemiologists

State Median Mo. Wage	State Average Mo. Benefits	State Median Mo. Total Comp
\$6,866	63.8%	\$11,244

### Statewide

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$7,842	-14.2%	\$11,998	-6.7%
Local Government	\$6,587	4.1%	\$10,289	8.5%
Private Sector (500+)	\$9,850	-43.5%	\$14,732	-31.0%
Federal Government	-	-	-	-

### Sacramento

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	-	-	-	-
Local Government	-	-	-	-
Private Sector (500+)	-	-	-	-
Federal Government	-	-	-	-

### San Francisco

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$10,850	-58.0%	\$16,446	-46.3%
Local Government	\$7,689	-12.0%	\$12,011	-6.8%
Private Sector (500+)	\$13,221	-92.6%	\$19,773	-75.8%
Federal Government	-	-	-	-

### Los Angeles

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$6,769	1.4%	\$10,448	7.1%
Local Government	\$6,752	1.6%	\$10,548	6.2%
Private Sector (500+)	\$6,813	0.8%	\$10,189	9.4%
Federal Government	-	-	-	-

### San Diego

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	-	-	-	-
Local Government	-	-	-	-
Private Sector (500+)	-	-	-	-
Federal Government	-	-	-	-

### Other Counties

Labor Market	Monthly Median Wage	Lead/Lag	Monthly Median Total Compensation	Lead/Lag
Market Average	\$5,231	23.8%	\$8,171	27.3%
Local Government	\$5,231	23.8%	\$8,171	27.3%
Private Sector (500+)	-	-	-	-
Federal Government	-	-	-	-

Please Note: A negative percentage indicates a lag for the state.

A dash (-) indicates that no information was available.

The Private Sector wages are from employers with 500 employees or more



## Appendix B

### Detailed Lists of State Classifications in Occupations

On the following pages you will find a complete list of State of California classifications mapped to each occupation.

## Civil Engineers

SOC Code: 17-2051

CBID	Class Code	Class Title	Employee Count
S09	3115	SUPERVISING ENGINEER -CIVIL SECTION- OFFICE OF ARCHITECTURE AND CONSTRUCTION	1
S09	3120	SENIOR CIVIL ENGINEER	12
U09	3123	ASSOCIATE CIVIL ENGINEER	15
R09	3128	ASSISTANT ENGINEERING SPECIALIST -CIVIL-	0
R09	3130	ENGINEER, CIVIL	5
S09	3134	SENIOR ENGINEER, SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION	2
R09	3135	TRANSPORTATION ENGINEER (CIVIL)	4,358
R09	3137	ENGINEER, WATER RESOURCES	323
U09	3161	SENIOR TRANSPORTATION ENGINEER, CALTRANS	986
U09	3167	ASSOCIATE TRANSPORTATION ENGINEER, CALTRANS	2
U09	3169	ASSOCIATE TRANSPORTATION ENGINEER, CALTRANS (REGISTERED)	64
U09	3185	SENIOR BRIDGE ENGINEER	247
U09	3186	ASSOCIATE BRIDGE ENGINEER	10
S09	3257	SUPERVISING HYDRAULIC ENGINEER	0
S09	3258	SUPERVISING ENGINEER WATER RESOURCES	94
R09	3260	SENIOR HYDRAULIC ENGINEER	5
S09	3261	SENIOR ENGINEER WATER RESOURCES	180
R09	3263	ASSOCIATE HYDRAULIC ENGINEER	2
S09	3289	SENIOR SPECIFICATION WRITER HYDRAULIC STRUCTURES	1
R09	3290	ASSOCIATE SPECIFICATION WRITER HYDRAULIC STRUCTURES	0
S09	3331	SUPERVISING STRUCTURAL ENGINEER	13
S09	3332	DISTRICT STRUCTURAL ENGINEER	42
R09	3336	SENIOR STRUCTURAL ENGINEER	97
R09	3345	STRUCTURAL ENGINEERING ASSOCIATE	2
S09	4003	SUPERVISOR, HEALTH FACILITIES REVIEW	10
R09	4019	PROJECT DIRECTOR I	16
R09	4020	PROJECT DIRECTOR II	38
S09	4023	PROJECT DIRECTOR III	15
R09	7929	SENIOR ENGINEER, PETROLEUM STRUCTURES (SPECIALIST)	3
R09	7932	ASSOCIATE ENGINEER, PETROLEUM STRUCTURES	5
R09	9619	ASSOCIATE TRANSPORTATION ENGINEER, CALTRANS (SPECIALIST)	2
Total Classes: 31			6,550

Note: Employee counts are from March 2016.

## Electrical Engineers

SOC Code: 17-2071

JOB ID	Class Code	Class Title	Employee Count
R09	2177	SENIOR ELECTRICAL ENGINEER, CALTRANS (SPECIALIST)	4
S09	3002	SENIOR ELECTRICAL ENGINEER, CALTRANS (SUPERVISOR)	2
R09	3163	SENIOR TRANSPORTATION ELECTRICAL ENGINEER (SPECIALIST)	19
S09	3164	SENIOR TRANSPORTATION ELECTRICAL ENGINEER (SUPERVISOR)	58
S09	3165	ASSOCIATE TRANSPORTATION ELECTRICAL ENGINEER (SUPERVISOR)	7
R09	3166	ASSOCIATE TRANSPORTATION ELECTRICAL ENGINEER (SPECIALIST)	5
S09	3412	SENIOR ELECTRONIC ENGINEER, CALTRANS	3
S09	3599	SUPERVISING ELECTRICAL ENGINEER	2
R09	3600	SENIOR ELECTRICAL ENGINEER	24
R09	3603	ASSOCIATE ELECTRICAL ENGINEER	9
S09	3608	SUPERVISING ELECTRICAL ENGINEER HYDRAULIC STRUCTURES	1
R09	3609	TRANSPORTATION ENGINEER, (ELECTRICAL)	418
S09	3610	SENIOR ELECTRICAL ENGINEER HYDRAULIC STRUCTURES	1
R09	3611	ASSOCIATE ELECTRICAL ENGINEER HYDRAULIC STRUCTURES	6
R09	3613	ELECTRICAL ENGINEER	32
S09	3672	SUPERVISING HYDROELECTRIC POWER UTILITY ENGINEER	20
S09	3673	SENIOR HYDROELECTRIC POWER UTILITY ENGINEER (SUPERVISOR)	23
R09	3674	SENIOR HYDROELECTRIC POWER UTILITY ENGINEER (SPECIALIST)	28
R09	3675	ASSOCIATE HYDROELECTRIC POWER UTILITY ENGINEER	46
<b>Total Classes: 19</b>			<b>708</b>

Note: Employee counts are from March 2016.

## Environmental Engineers

SOC Code: 17-2081

OBID	Class Code	Class Title	Employee Count
R09	0663	VEHICLE PROGRAM SPECIALIST, AIR RESOURCES BOARD	3
S09	3723	SUPERVISING HAZARDOUS SUBSTANCES ENGINEER II	7
S09	3724	SUPERVISING HAZARDOUS SUBSTANCES ENGINEER I	23
R09	3725	SENIOR HAZARDOUS SUBSTANCES ENGINEER	25
R09	3726	HAZARDOUS SUBSTANCES ENGINEER	94
R09	3735	AIR RESOURCES ENGINEER	275
S09	3762	AIR RESOURCES SUPERVISOR I	136
S09	3763	AIR RESOURCES SUPERVISOR II	40
R09	3786	WASTE MANAGEMENT ENGINEER	12
U09	3790	SENIOR WASTE MANAGEMENT ENGINEER	6
S09	3795	SUPERVISING WASTE MANAGEMENT ENGINEER	1
S09	3821	SUPERVISING SANITARY ENGINEER	6
S09	3822	SENIOR SANITARY ENGINEER	36
R09	3825	ASSOCIATE SANITARY ENGINEER	79
U09	3844	SENIOR WATER RESOURCE CONTROL ENGINEER	78
R09	3846	WATER RESOURCE CONTROL ENGINEER	358
R09	3848	SANITARY ENGINEER	30
S09	3849	SUPERVISING WATER RESOURCE CONTROL ENGINEER (SUPERVISORY)	23
R09	9941	AIR QUALITY ENGINEER I, DEPARTMENT OF CONSUMER AFFAIRS	10
R09	9942	AIR QUALITY ENGINEER II, DEPARTMENT OF CONSUMER AFFAIRS	13
S09	9943	SENIOR AIR QUALITY ENGINEER, DEPARTMENT OF CONSUMER AFFAIRS	4
<b>Total Classes: 21</b>			<b>1,259</b>

Note: Employee counts are from March 2016.

## Environmental Scientists & Specialists, Including Health

SOC Code: 19-2041

OBID	Class Code	Class Title	Employee Count
S10	0756	ENVIRONMENTAL PROGRAM MANAGER I (SUPERVISORY)	165
R10	0757	INTEGRATED WASTE MANAGEMENT SPECIALIST	29
S10	0759	SUPERVISING INTEGRATED WASTE MANAGEMENT SPECIALIST I	6
R10	0762	ENVIRONMENTAL SCIENTIST	1,284
S10	0764	SENIOR ENVIRONMENTAL SCIENTIST (SUPERVISORY)	327
R10	0765	SENIOR ENVIRONMENTAL SCIENTIST(SPECIALIST)	477
R10	1989	SENIOR INTEGRATED WASTE MANAGEMENT SPECIALIST	3
S10	3526	SENIOR HAZARDOUS MATERIALS SPECIALIST (SUPERVISORY)	0
R10	3527	SENIOR HAZARDOUS MATERIALS SPECIALIST (TECHNICAL)	2
R10	3528	ASSOCIATE HAZARDOUS MATERIALS SPECIALIST	26
R10	3529	HAZARDOUS MATERIALS SPECIALIST	0
R10	5579	RESEARCH SCIENTIST I (PHYSICAL/ENGINEERING SCIENCES)	0
R10	5588	RESEARCH SCIENTIST II (PHYSICAL/ENGINEERING SCIENCES)	0
R10	5604	RESEARCH SCIENTIST III (PHYSICAL/ENGINEERING SCIENCES)	7
R10	5613	RESEARCH SCIENTIST IV (PHYSICAL/ENGINEERING SCIENCES)	1
R10	5635	RESEARCH SCIENTIST V (PHYSICAL/ENGINEERING SCIENCE)	0
S10	5646	RESEARCH SCIENTIST SUPERVISOR I (PHYSICAL/ENGINEERING SCIENCES)	0
S10	5655	RESEARCH SCIENTIST SUPERVISOR II (PHYSICAL/ENGINEERING SCIENCES)	2
R10	6167	SENIOR ENVIRONMENTAL RESEARCH SCIENTIST (SPECIALIST)	1
<b>Total Classes: 19</b>			<b>2,330</b>

Note: Employee counts are from March 2016.

## Chemists

SOC Code: 19-2031

JOB ID	Class Code	Class Title	Employee Count
S10	2035	RESEARCH AGRICULTURAL CHEMIST	0
R10	5576	RESEARCH SCIENTIST I (CHEMICAL SCIENCES)	28
R10	5581	RESEARCH SCIENTIST II (CHEMICAL SCIENCES)	26
R10	5591	RESEARCH SCIENTIST III (CHEMICAL SCIENCES)	20
R10	5608	RESEARCH SCIENTIST IV (CHEMICAL SCIENCES)	5
R10	5627	RESEARCH SCIENTIST V (CHEMICAL SCIENCE)	0
S10	5638	RESEARCH SCIENTIST SUPERVISOR I (CHEMICAL SCIENCES)	12
S10	5650	RESEARCH SCIENTIST SUPERVISOR II (CHEMICAL SCIENCES)	7
R10	6176	CHIEF CHEMIST, PESTICIDE EVALUATION	0
S10	8044	CHIEF BRANCH PUBLIC HEALTH LABORATORY	0
S10	8045	CHIEF, ENVIRONMENTAL HEALTH LABORATORY BRANCH	0
S10	8046	ASSISTANT LABORATORY CHIEF PUBLIC HEALTH LABORATORIES	0
S10	8047	CHIEF, SANITATION AND RADIATION LABORATORY BRANCH	0
R10	8049	RESEARCH RADIOCHEMIST	0
S10	8056	CHIEF, FOOD AND DRUG LABORATORY BRANCH	0
R10	8057	SPECTROSCOPIST	1
U10	8058	RESEARCH CHEMIST	0
R10	8060	CHEMIST	25
R10	8061	RESEARCH CLINICAL CHEMIST	0
S10	8063	CHIEF, HAZARDOUS MATERIALS LABORATORY SECTION	0
R10	8068	STAFF CHEMIST	12
S10	8070	SUPERVISING CHEMIST	4
<b>Total Classes: 22</b>			<b>140</b>

Note: Employee counts are from March 2016.

## Epidemiologists

SOC Code: 19-1041

OBID	Class Code	Class Title	Employee Count
R10	0563	SENIOR PUBLIC HEALTH BIOLOGIST	7
R10	0564	ASSOCIATE PUBLIC HEALTH BIOLOGIST	3
R10	0565	ASSISTANT PUBLIC HEALTH BIOLOGIST	0
R10	5577	RESEARCH SCIENTIST I (EPIDEMIOLOGY/BIOSTATISTICS)	29
R10	5582	RESEARCH SCIENTIST II (EPIDEMIOLOGY/BIOSTATISTICS)	34
R10	5594	RESEARCH SCIENTIST III (EPIDEMIOLOGY/BIOSTATISTICS)	49
R10	5609	RESEARCH SCIENTIST IV (EPIDEMIOLOGY/BIOSTATISTICS)	1
R10	5629	RESEARCH SCIENTIST V (EPIDEMIOLOGY/BIOSTATISTICS)	1
S10	5643	RESEARCH SCIENTIST SUPERVISOR I(EPIDEMIOLOGY/BIOSTATISTICS)	18
S10	5651	RESEARCH SCIENTIST SUPERVISOR II (EPIDEMIOLOGY/BIOSTATISTICS)	13
S10	7962	SUPERVISING PUBLIC HEALTH BIOLOGIST	3
<b>Total Classes: 11</b>			<b>158</b>

Note: Employee counts are from March 2016.

## Appendix C

### Benefit Percentages

On the following page you will find a table displaying a detailed summary of benefit percentages for state government workers associated with each bargaining unit. The remaining pages display charts with benefit percentages used for each occupation.



**State Employee Benefit Percentage Table**  
**for Rank-and-File Employees in Each Bargaining Unit**  
 Comparing the Average Value of Each Benefit to the Average Wage

Bargaining Unit	Count of Employees in BU	Annual Hours Worked	Supplemental Pay		Insurance	Retirement	Legally Required Benefits	Paid Leave	Total Benefit Percentage
			Overtime	Other Pay					
9	9,823	1,782						15.9%	<b>66.5%</b>
10	2,658	1,785						14.7%	<b>64.8%</b>

Total Benefit Percentages may not equal sum total of individual benefits due to rounding.

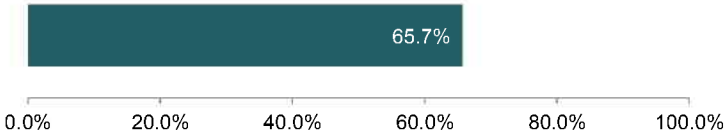
# Benefit Percentage Summary Sheet

SOC Code: 17-2051 - Civil Engineers

Benefit Percentage

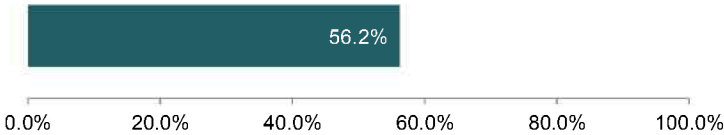
## State of California

Average of all rank-and-file and supervisory employees associated with Unit 9



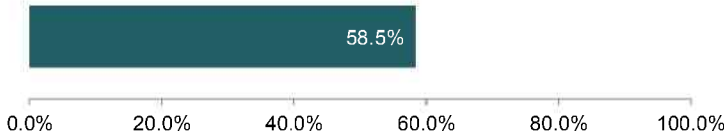
## Local Government

Management, professional, and Related High Level Group (excluding education, training, and library occupations)



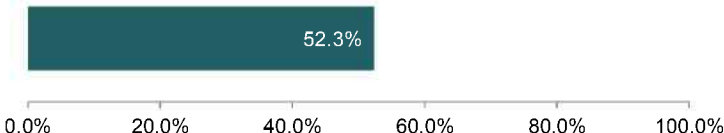
## Private Sector (500+ Employees)

Architecture and Engineering Occupations Major Group



## Federal Government

Federal Occupation 0810 - Civil Engineering



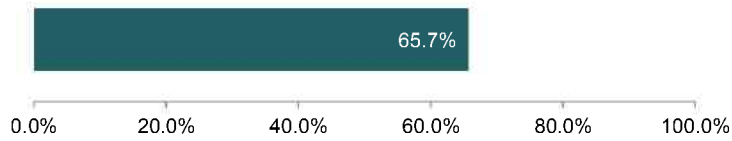
## Benefit Percentage Summary Sheet

SOC Code: 17-2071 - Electrical Engineers

■ Benefit Percentage

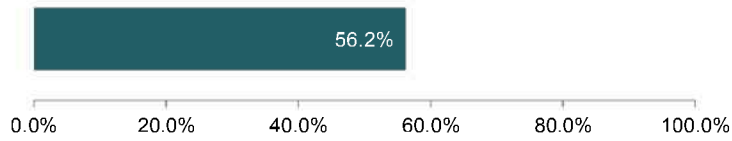
### State of California

Average of all rank-and-file and supervisory employees associated with Unit 9



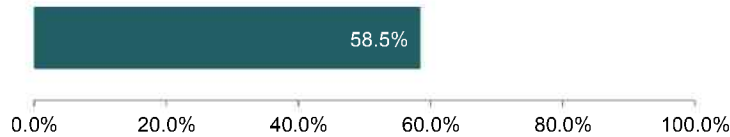
### Local Government

Management, professional, and Related High Level Group (excluding education, training, and library occupations)



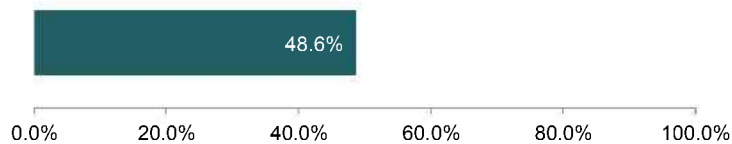
### Private Sector (500+ Employees)

Architecture and Engineering Occupations Major Group



### Federal Government

Federal Occupation 0850 - Electrical Engineering



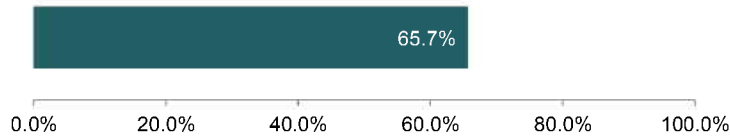
## Benefit Percentage Summary Sheet

SOC Code: 17-2081 - Environmental Engineers

■ Benefit Percentage

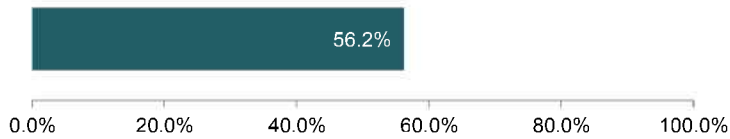
### State of California

Average of all rank-and-file and supervisory employees associated with Unit 9



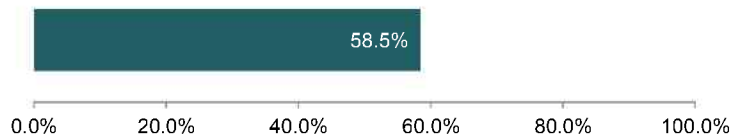
### Local Government

Management, professional, and Related High Level Group (excluding education, training, and library occupations)



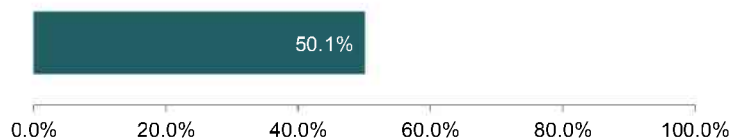
### Private Sector (500+ Employees)

Architecture and Engineering Occupations Major Group



### Federal Government

Federal Occupation 0819 - Environmental Engineering



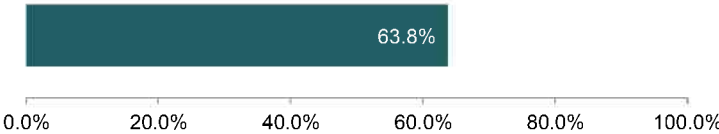
# Benefit Percentage Summary Sheet

SOC Code: 19-2041 - Environmental Scientists & Specialists, Including Health

Benefit Percentage

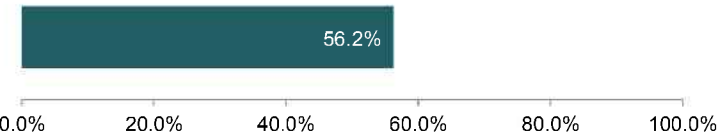
## State of California

Average of all rank-and-file and supervisory employees associated with Unit 10



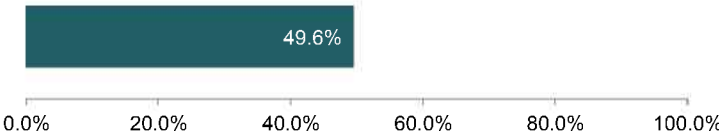
## Local Government

Management, professional, and Related High Level Group (excluding education, training, and library occupations)



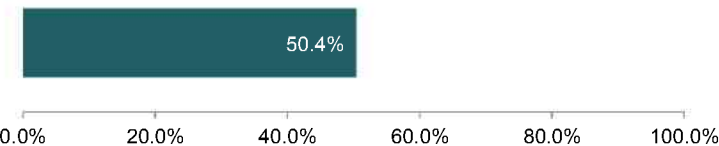
## Private Sector (500+ Employees)

Service High Level Group



## Federal Government

Federal Occupation 0601 - General Health Science



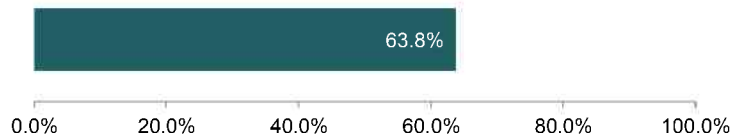
## Benefit Percentage Summary Sheet

SOC Code: 19-2031 - Chemists

■ Benefit Percentage

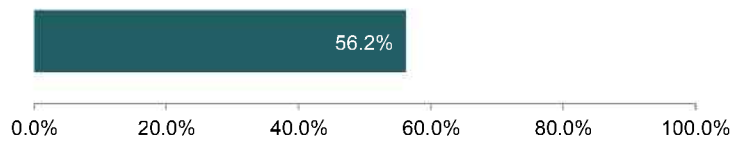
### State of California

Average of all rank-and-file and supervisory employees associated with Unit 10



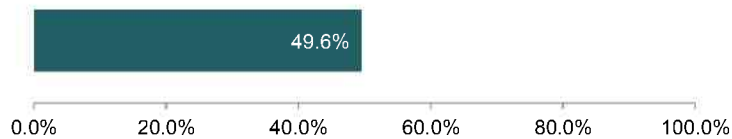
### Local Government

Management, professional, and Related High Level Group (excluding education, training, and library occupations)



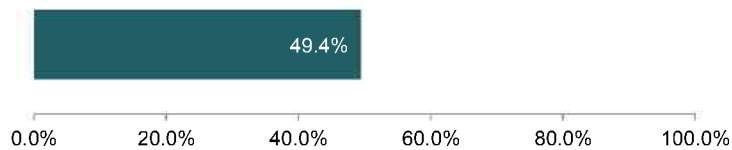
### Private Sector (500+ Employees)

Service High Level Group



### Federal Government

Federal Occupation 1320 - Chemistry



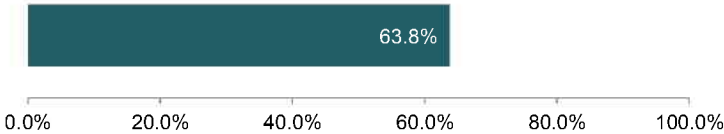
# Benefit Percentage Summary Sheet

SOC Code: 19-1041 - Epidemiologists

Benefit Percentage

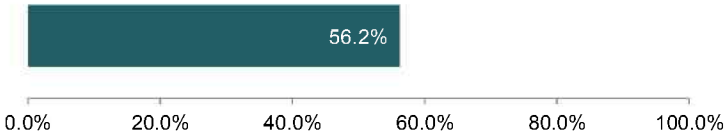
## State of California

Average of all rank-and-file and supervisory employees associated with Unit 10



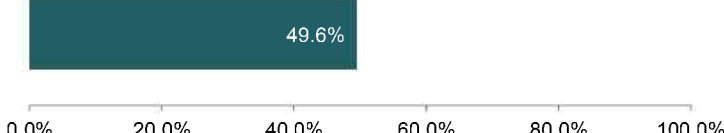
## Local Government

Management, professional, and Related High Level Group (excluding education, training, and library occupations)



## Private Sector (500+ Employees)

Service High Level Group



## Federal Government

N/A



## Appendix D

### Other Information Related to this Report

On the following pages you will find additional information relevant to this report.



## Geographic Differences: Federal Locality Pay

The federal government maintains a general salary schedule for approximately 1.5 million white-collar workers. Within this system there are 47 separate “locality pay areas” and a “Rest of the United States” pay schedule. There are four locality pay areas in California. The table below illustrates that federal workers in three of the regions receive higher pay than the Sacramento region. However, workers in all four regions receive higher pay than in the “Rest of the United States,” which includes California counties not included in these regions.

### Comparing Federal Locality Pay in Four Regions in California

Metro Area	Percent Higher Than Sacramento	Percent Higher Than the Rest of the U.S.
Greater Los Angeles Area	4.4%	12.7%
San Francisco Bay Area	11.3%	20.1%
San Diego County	2.3%	10.4%
Sacramento Area	-	7.9%

Source: 2017 Federal Government Locality Pay Charts<sup>1</sup>

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<sup>1</sup> 2017 General Schedule (GS) Locality Pay Tables: <https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/2017/general-schedule/> The GS classification and pay system covers the majority of civilian white-collar Federal employees (about 1.5 million worldwide) in professional, technical, administrative, and clerical positions. Different wage rates apply to federal blue-collar workers.

## Size of Employer Groups in Labor Market

This report compares the total compensation for state workers with federal and local government workers, as well as workers at large private sector firms (employing 500 or more employees). EDD also produces a Quarterly Census of Employment and Wages, which estimates the number of workers for these employer groups.<sup>2</sup> The table below compares the number of workers in each group (as of March 2016) with the 16 million Californians working in nonfarm jobs in 2016.<sup>3</sup>

### Number of Workers by Employer Group in California

Employer	Number of Workers	Percent of Nonfarm Workers
Private Sector (500+ workers) <sup>4</sup>	2,208,850	13.4%
Local Government	1,770,600	10.7%
State Government <sup>5</sup>	224,170	1.4%
Federal Government <sup>6</sup>	184,300	1.1%

### Number of Local Government Workers in More Detail

Employer	Number of Workers	Percent of Nonfarm Workers
Local Government Education	986,800	6.0%
Counties	339,300	2.1%
Cities	260,800	1.6%
Special Districts	125,400	0.8%
Indian Tribal Government	58,300	0.4%

<sup>2</sup> Source: <http://www.labormarketinfo.edd.ca.gov/cgi/dataanalysis/AreaSelection.asp?tableName=ces>

<sup>3</sup> 16,477,400 nonfarm jobs in 2016, according to EDD's Industry Employment & Labor Force - by Annual Average

<sup>4</sup> Private Sector (500+) employment estimate is from the OES survey file using 2016 estimates.

<sup>5</sup> State Government employment estimate is from the State Controller's Office Unit Profiles of all state employees, excluding Judicial Branch and CSU employees.

<sup>6</sup> Does not include Department of Defense employees.

## Number of Workers Employed in Each Occupation by Employer Group

Using data provided by the EDD and the State Controller's Office, the table below displays the number of workers employed in each occupation by employer group, which provides some perspective on the size of the state's workforce in the labor market.

### Number of Workers by Occupation and Employer Group in California

Bargaining Unit	SOC Code	Occupation Title	State of CA Workers <sup>7</sup>	Local Govt. Workers	Private Sector Workers (500+)	Federal Govt. Workers <sup>8</sup>
9	17-2051	Civil Engineers	6,550	7,030	890	810
9	17-2071	Electrical Engineers	708	810	7,180	370
9	17-2081	Environmental Engineers	1,259	1,150	440	370
10	19-2041	Environmental Scientists	2,330	2,680	940	540
10	19-2031	Chemists	140	640	3,230	380
10	19-1041	Epidemiologists	158	240	150	-

<sup>7</sup> Count of full-time equivalent State of California employees working in each occupation associated with the bargaining unit as of March 2016. Please refer to Appendix B for a complete list of state classifications included in each occupation.

<sup>8</sup> The employment estimate counts for the three labor markets were pulled from the OES survey file using 2016 estimates.

## Estimated OPEB Costs by Employer Group

Retiree health insurance coverage is a valuable benefit offered to some employees, but it is not included in the NCS. This benefit is often called Other Post-Employment Benefits (OPEB). Government employers typically offer OPEB, while private industry employers typically do not.<sup>9</sup> Because the NCS does not collect or report employer costs for retiree health, it could not be included in the total compensation comparison.

However, using different sources of data, the Department produced an estimated cost for government employer groups offering this benefit in California, which is displayed in the table below. The local government and state government estimated costs are based upon data submitted to California Employer's Retiree Benefit Trust Fund (CERBT) managed by CalPERS. There are 525 local government agencies participating in the CERBT program. The federal government's estimated cost was provided by the Office of Personnel Management.<sup>10</sup>

**Estimated Average Annual OPEB Costs Per Retiree  
for Government Employers in California in 2016**

Employer	Avg. Annual Employer Cost Per Retiree Receiving OPEB
Local Government	\$7,092
State Government	\$11,233
Federal Government	\$8,149

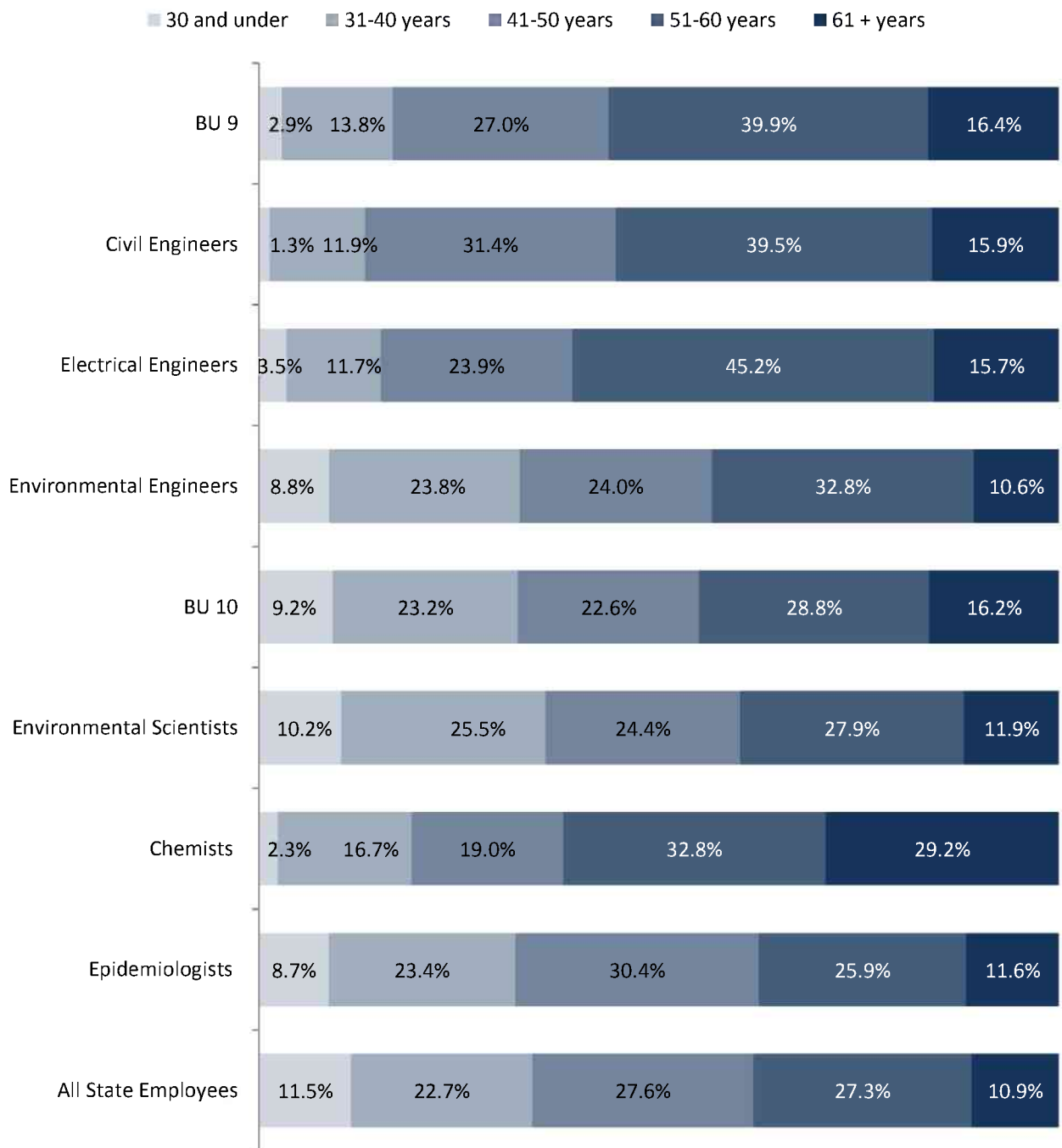
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<sup>9</sup> According to the NCS, nationwide 68 percent of state and local government workers have access to retiree health prior to age 65. By contrast, only 38 percent of workers at large private industry firms (500 or more employees) have access to retiree health prior to age 65. Source: Table 42, Health-related benefits: Access, National Compensation Survey, March 2017

<sup>10</sup> According to the U.S. Office of Personnel Management, the federal government's average monthly cost for health care premiums was \$679.12 as of March 2016 (annualized to \$8,149 for 2016).

# Demographics: Age of State Employees

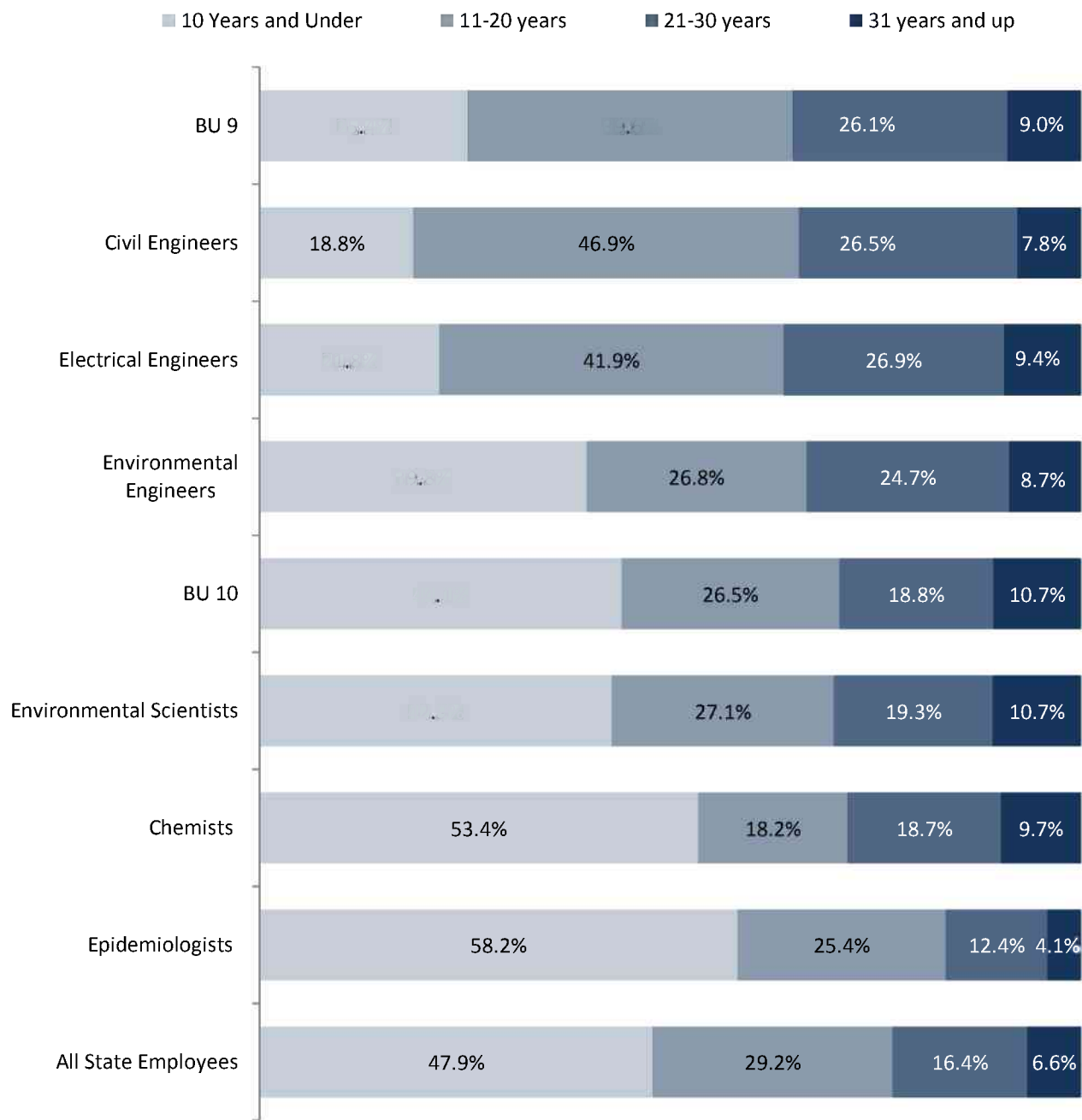
2016 Percent of State Employees Associated With Each Occupation and Bargaining Unit (Rank-and-File and Related Excluded) by Age Group



\* State employee data from the CA State Controller’s Office. Percentages may not equal 100 due to rounding.

## Demographics: Length of State Service

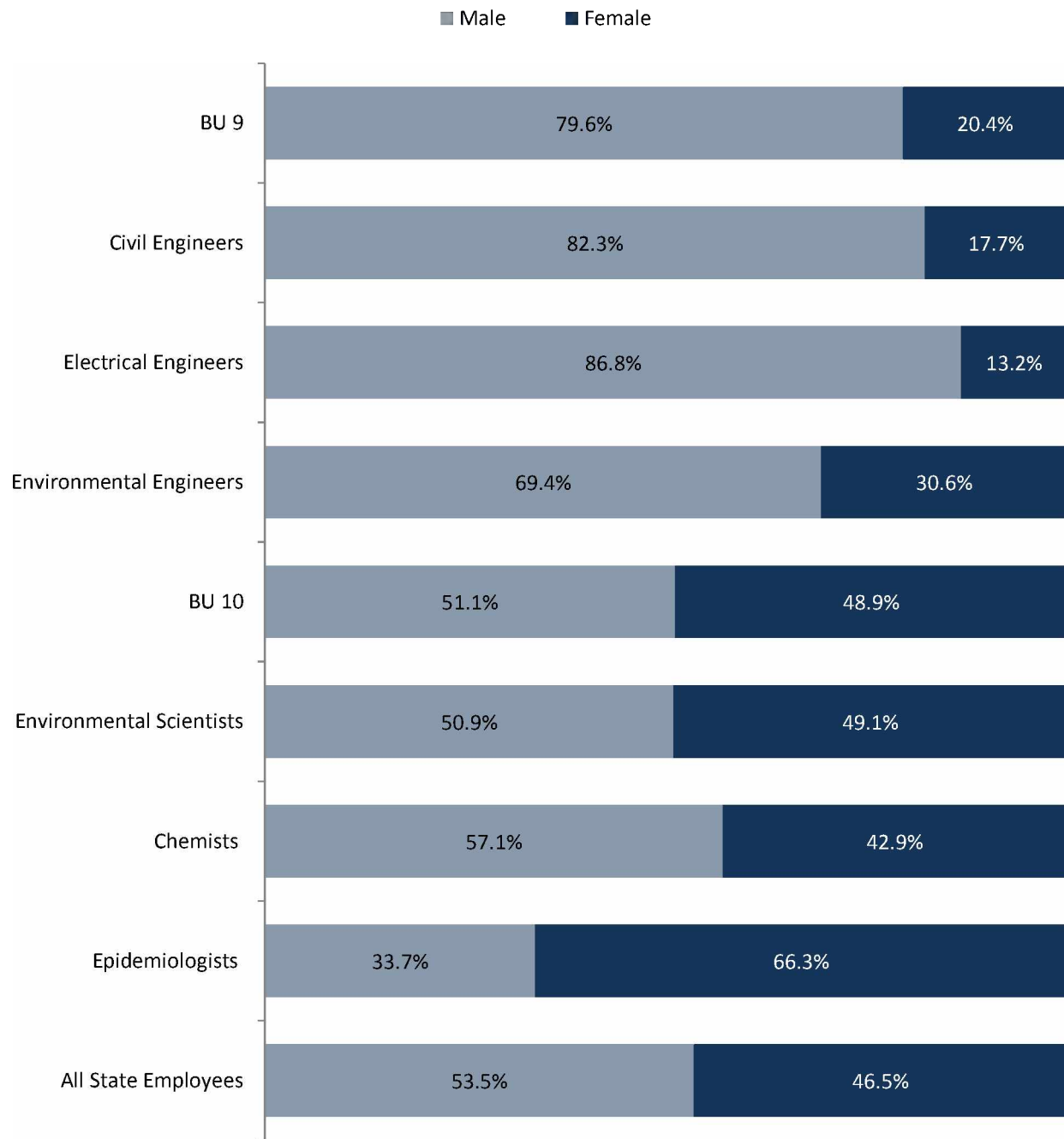
2016 Percent of State Employees Associated With Each Occupation and Bargaining Unit  
(Rank-and-File and Related Excluded) by Length of State Service



\* State employee data from the CA State Controller’s Office. Percentages may not equal 100 due to rounding.

## Demographics: Gender of State Employees

2016 Percent of State Employees Associated With Each Occupation and Bargaining Unit  
(Rank-and-File and Related Excluded) by Gender



\* State employee data from the CA State Controller's Office.

## Workforce Data: Average Age and Years of State Service at Retirement

2016 Average Age and Years of State Service at Retirement for Employees  
Associated with Each Occupation and Bargaining Unit (Rank-and-File and Related Excluded)

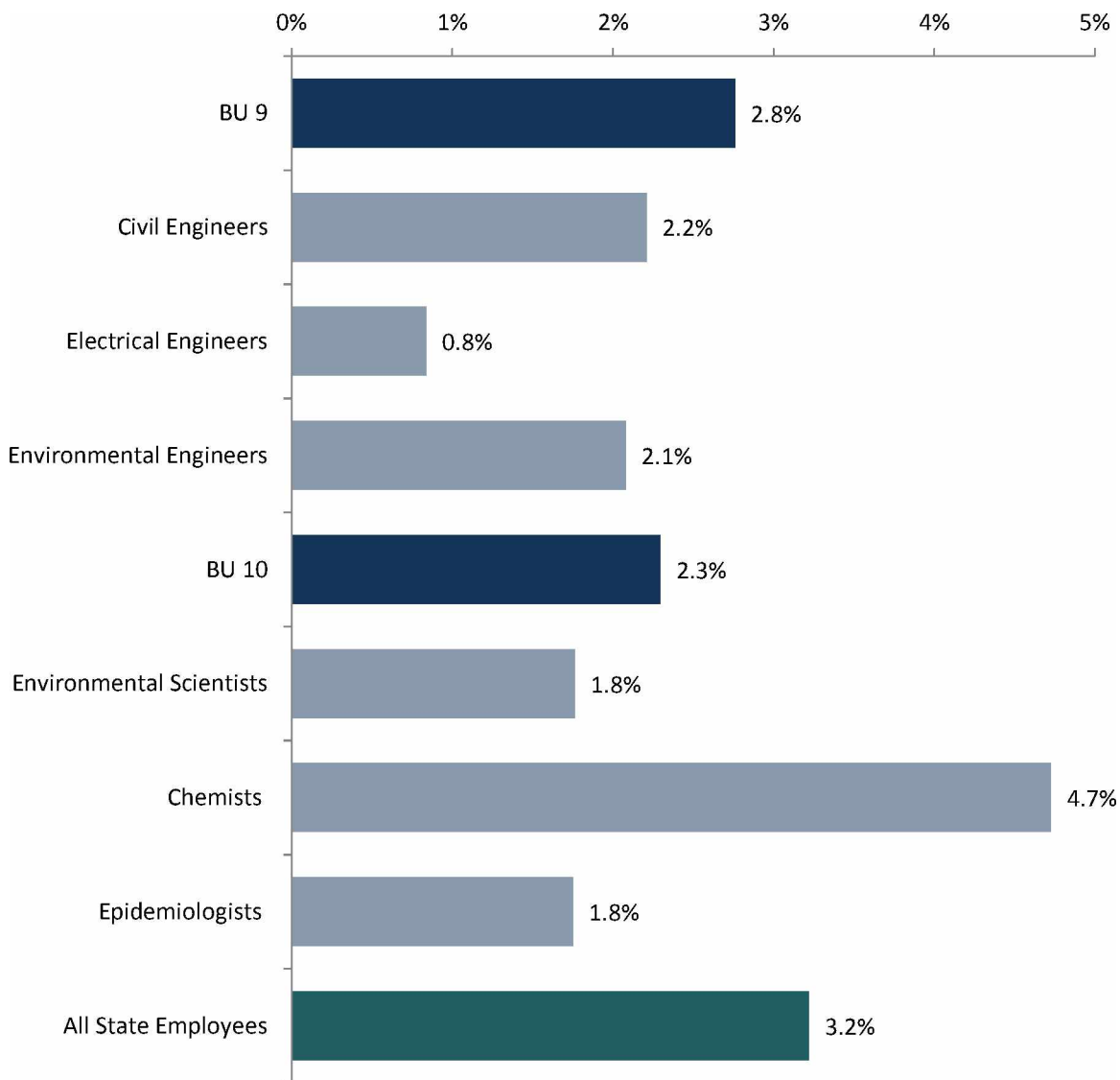
Bargaining Unit/Occupation	Average Age	Average Years of State Service
<b>BU 9</b>	<b>62</b>	<b>26</b>
Civil Engineers	62	25
Electrical Engineers	62	26
Environmental Engineers	62	26
<b>BU 10</b>	<b>63</b>	<b>26</b>
Environmental Scientists	61	28
Chemists	69	27
Epidemiologists	61	21
<b>All State Employees</b>	<b>59</b>	<b>23</b>

\* State employee data from the CA State Controller's Office.



## Workforce Data: Retirement Rate

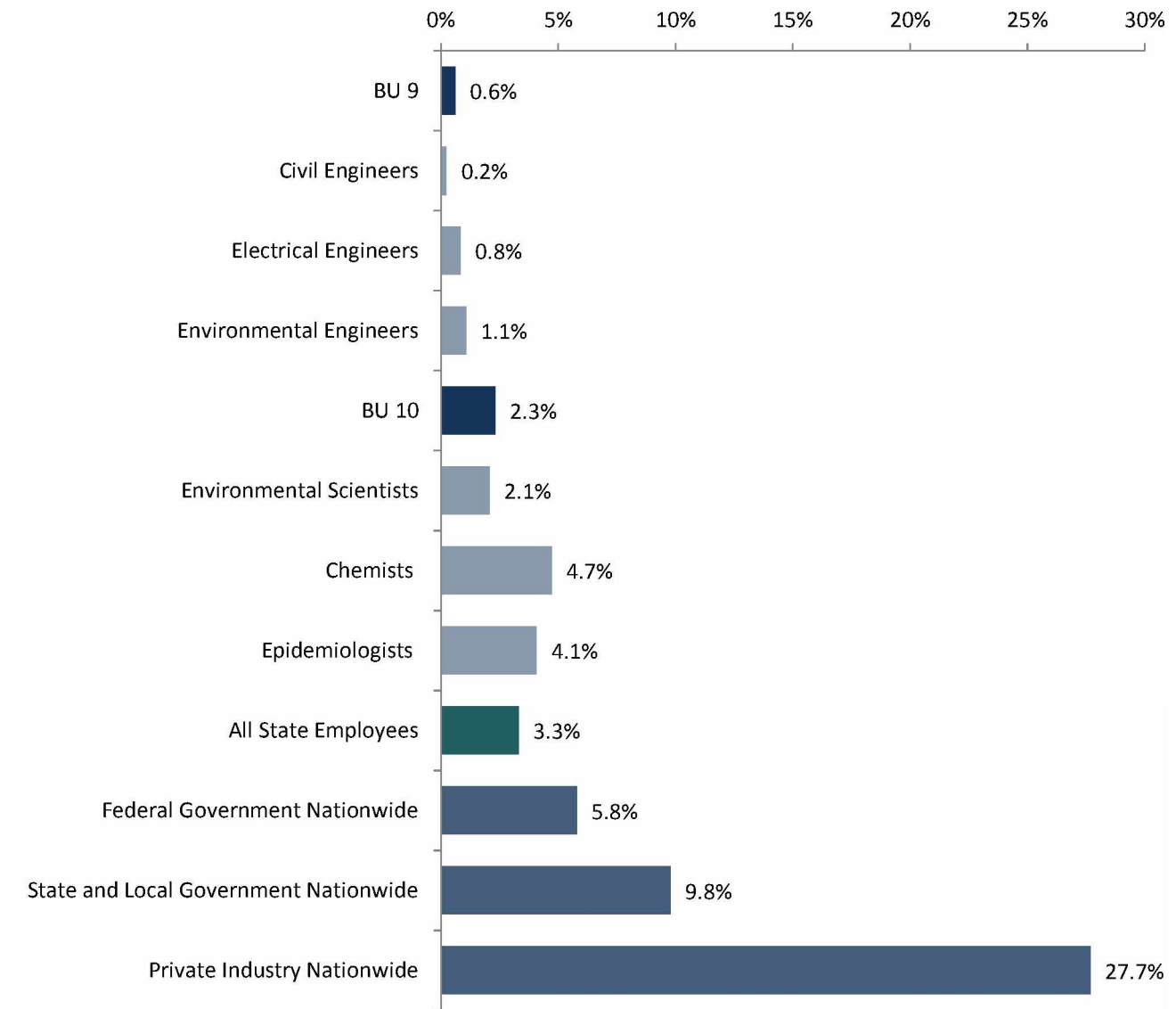
2016 Percent of Service and Disability Retirements Associated with Each Occupation and Bargaining Unit (Rank-and-File and Related Excluded)



\* State employee data from the CA State Controller's Office.

## Workforce Data: Voluntary Separation Rate

2016 Percent of Voluntary Separations Associated with Each Occupation and Bargaining Unit (Rank-and-File and Related Excluded) Compared to Separation Rates for Federal Government, State and Local Government,<sup>11</sup> and Private Sector Workers Nationwide



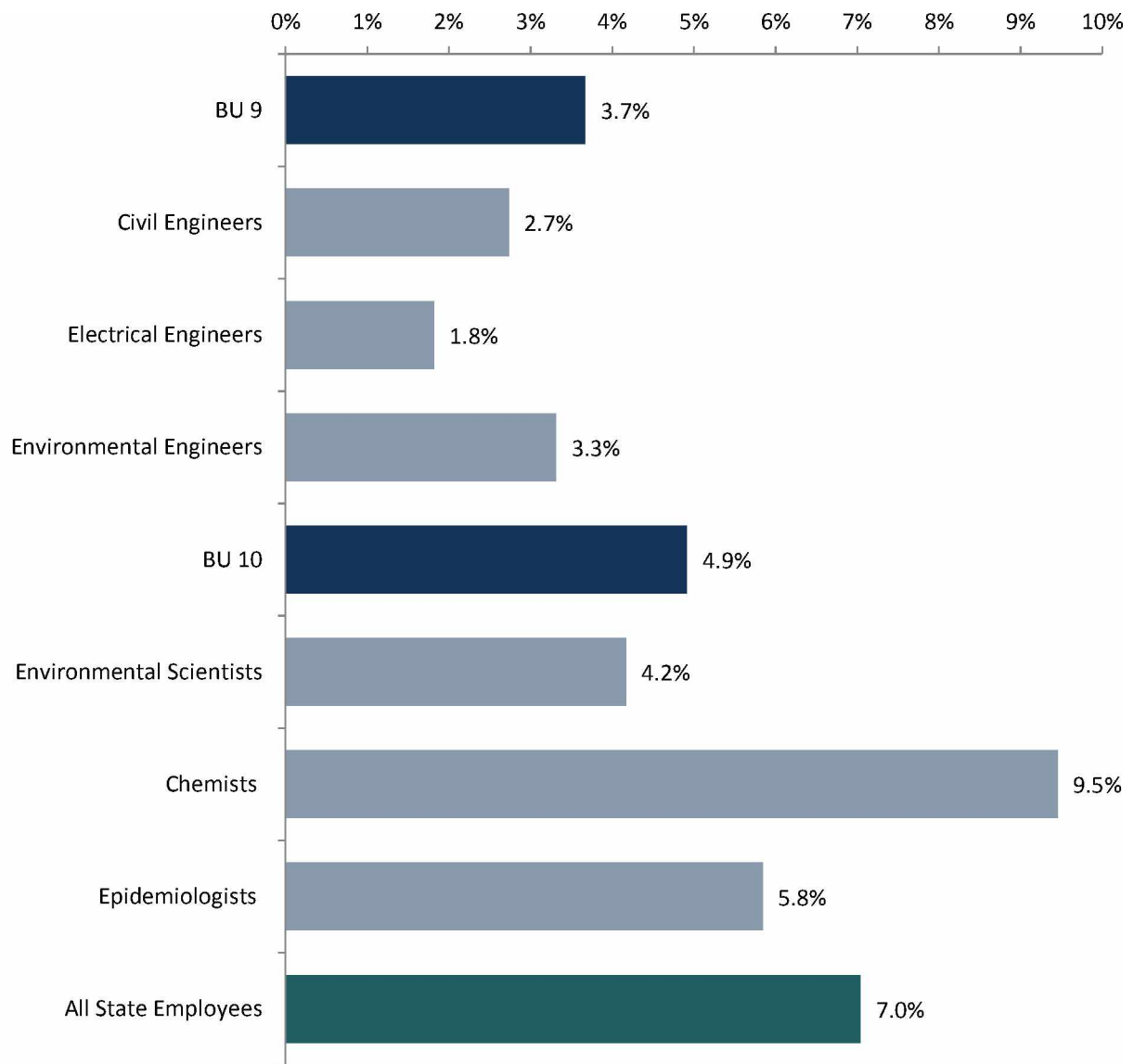
<sup>11</sup> As a benchmark for comparison, voluntary separations, or the “quits rate,” for all state and local government, federal, and private sector workers nationwide is included from the Bureau’s Job Openings and Labor Turnover Survey from January- December 2016. The quits rate is the number of voluntary separations initiated by the employee, not including retirements, as a percent of total employment.

<http://www.bls.gov/news.release/jolts.t10.htm>

\* State employee data from the CA State Controller’s Office.

# Workforce Data: Turnover Rate

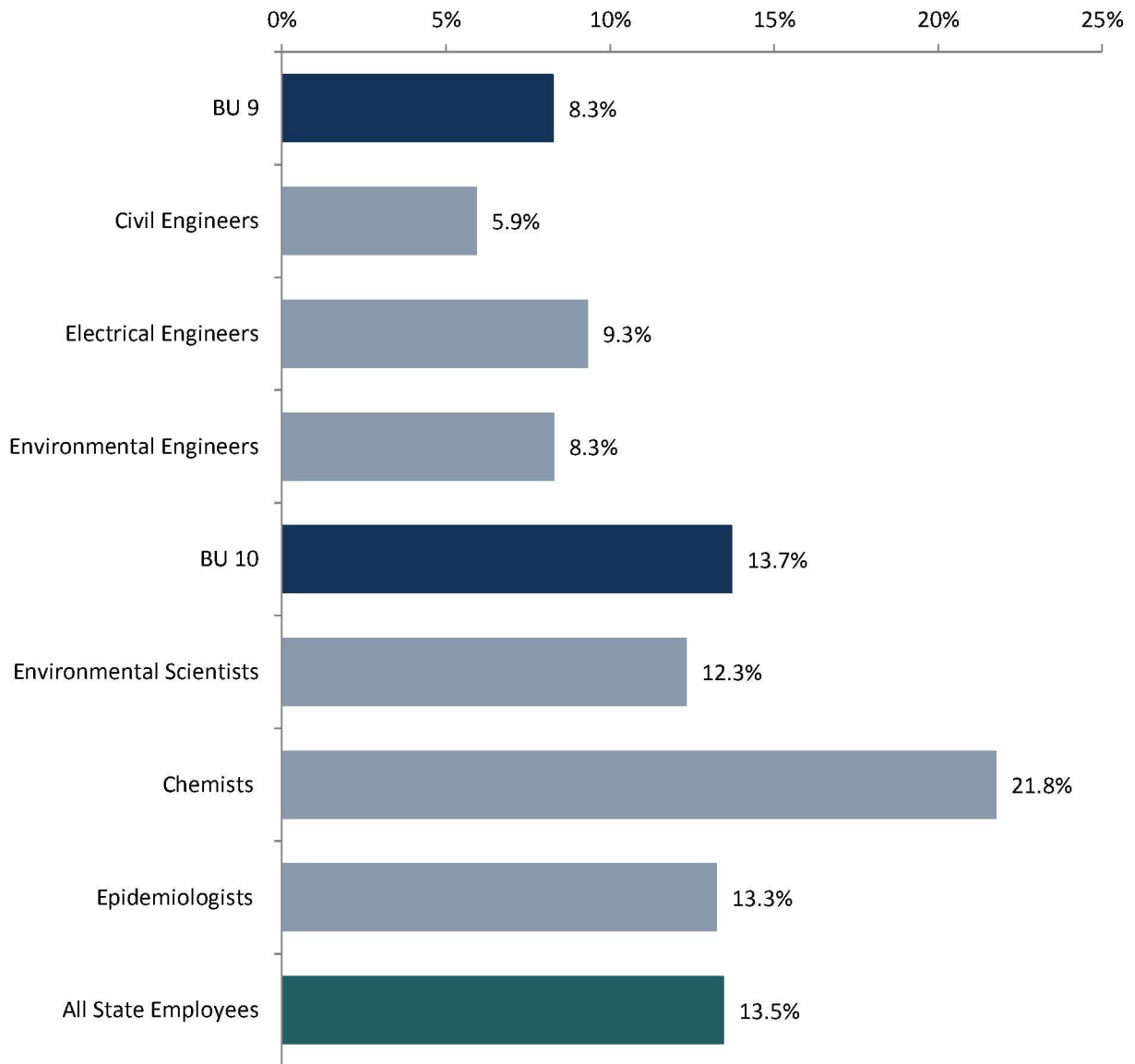
2016 Percent of Voluntary and Involuntary Separations and Retirements Associated with Each Occupation and Bargaining Unit (Rank-and-File and Related Excluded)



\* State employee data from the CA State Controller's Office.

## Workforce Data: Vacancy Rate

2016 Percent of Vacant Positions Compared to Full-Time Established Positions Associated With Each Occupation and Bargaining Unit (Rank-and-File and Related Excluded)



\* State employee data from the CA State Controller's Office.

## Percent of Employees That Earn Maximum Salary

Percent of State Employees Associated With Each Occupation and Bargaining Unit (Rank-and-File and Related Excluded) That Earn Maximum Salary of the Salary Range as of December 2016

Bargaining Unit/Occupation	Percentage at Max. Salary
<b>BU 9</b>	<b>80.4%</b>
Civil Engineers	79.7%
Electrical Engineers	72.9%
Environmental Engineers	59.0%
<b>BU 10</b>	<b>55.6%</b>
Environmental Scientists	45.8%
Chemists	52.8%
Epidemiologists	43.7%
<b>All State Employees</b>	<b>57.6%</b>

\* State employee data from the CA State Controller's Office.