



Occupation Report

Environmental Scientists and Geoscientists

Sacramento-Roseville-Folsom, CA MSA

A decorative horizontal line with three circles of varying shades (blue, dark blue, grey) positioned below the text.

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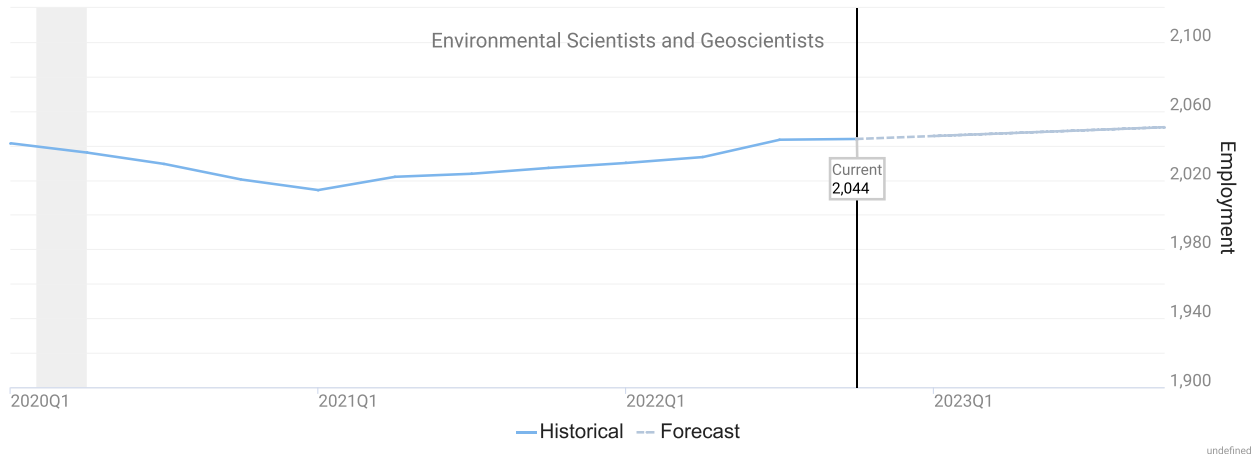
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Occupation Snapshot



6-Digit Occupation	Empl	Avg Mean Wages	LQ	3-Year Empl Change	Annual Demand	Forecast Ann Growth
Environmental Scientists and Specialists, Including Health	1,679	\$106,900	3.04	19	159	0.3%
Geoscientists, Except Hydrologists and Geographers	260	\$112,600	1.48	-7	25	0.6%
Hydrologists	105	\$114,300	2.34	-2	10	0.2%
Environmental Scientists and Geoscientists	2,044	\$108,000	2.65	9	194	0.3%



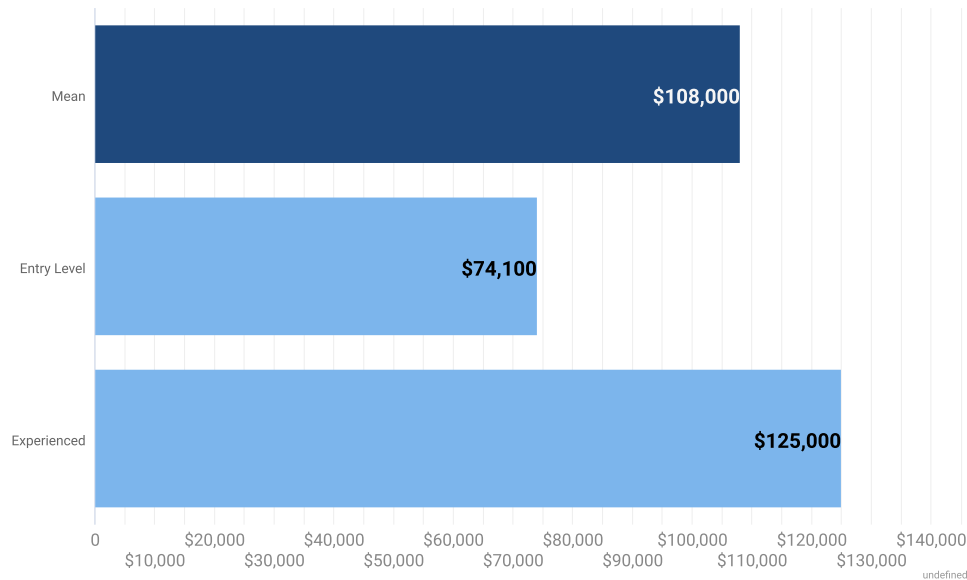
- 💡 “Annual Demand” is the projected need for new entrants into an occupation. New entrants are needed due to expected growth and to replace workers who left the occupation due to factors such as retirement or switching careers.
- 💡 “Forecast Ann Growth” is the expected change in jobs due to national, long-term trend projections (per the BLS) as well as local factors such as industry mix and population growth (as computed and modeled by Chmura).

Employment by Industry

Industry Title	% of Occ Empl	Empl	10-Year Separations	10-Year Empl Growth	10-Year Total Demand
Executive, Legislative, and Other General Government Support	23.2%	474	430	0	429
Administration of Human Resource Programs	13.4%	275	248	-1	248
Administration of Environmental Quality Programs	11.8%	241	217	-1	216
Administration of Economic Programs	11.3%	232	209	-2	207
Justice, Public Order, and Safety Activities	10.8%	221	202	3	205
Management, Scientific, and Technical Consulting Services	9.0%	184	181	35	216
Architectural, Engineering, and Related Services	8.6%	176	163	10	172
Scientific Research and Development Services	2.2%	44	43	6	49
Colleges, Universities, and Professional Schools	2.0%	42	40	5	45
Management of Companies and Enterprises	1.3%	27	26	2	28
Administration of Housing Programs, Urban Planning, and Community Development	1.0%	20	18	0	17
National Security and International Affairs	0.8%	17	15	0	15
Remediation and Other Waste Management Services	0.7%	14	14	2	16
Social Advocacy Organizations	0.7%	14	13	2	15
Natural Gas Distribution	0.5%	10	10	0	10
All Others	2.6%	53	52	7	59

-  The industry distribution indicates the industries in which workers in the occupation(s) are primarily found.
-  “10-Year Empl Growth” may show industries with positive as well as negative growth; this would indicate that the occupation(s) being examined are expected to expand within some industries while contracting in others.

Wages

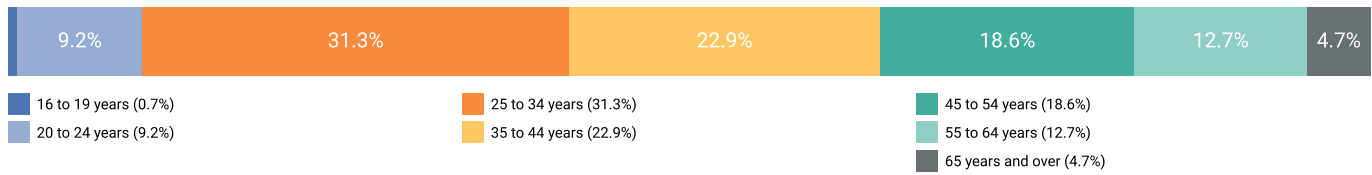


Occupation	Mean	Median	Entry Level	Experienced
Hydrologists	\$114,300	\$105,700	\$79,100	\$131,900
Geoscientists, Except Hydrologists and Geographers	\$112,600	\$111,000	\$71,900	\$133,000
Environmental Scientists and Specialists, Including Health	\$106,900	\$109,900	\$74,100	\$123,300

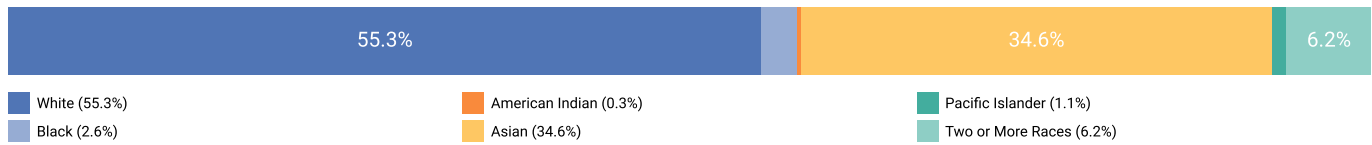
- 💡 Occupation wages here utilize BLS OEWS data, imputed and brought forward by Chmura.
- 💡 When this report is run for an occupation group, the table above displays up to the top ten detailed occupations which have the highest average wages within the occupation group.

Occupation Demographics

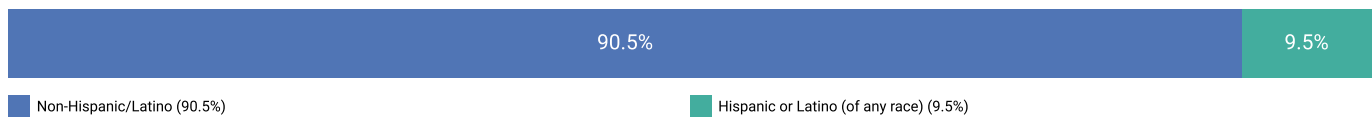
Age



Race



Ethnicity



Gender

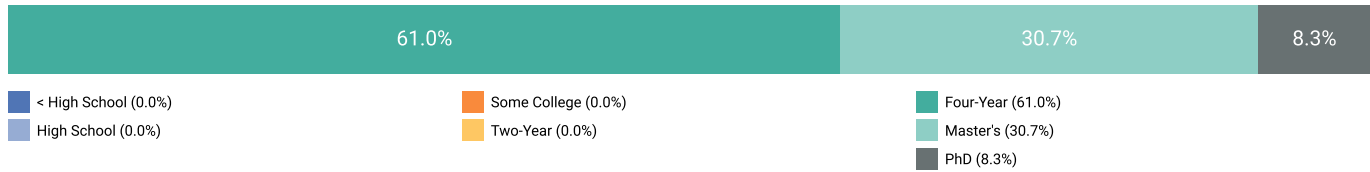


Education and Training Requirements



Education Profile

Educational Attainment





Occupation	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Environmental Scientists and Specialists, Including Health	Bachelor's degree	None	None
Geoscientists, Except Hydrologists and Geographers	Bachelor's degree	None	None
Hydrologists	Bachelor's degree	None	None

 The stacked bar chart here illustrates the estimated mix of educational attainment of the workers in this occupation(s) in aggregate.

 The table indicates typical education and training requirements rather than the mix of attainment of workers in such positions.

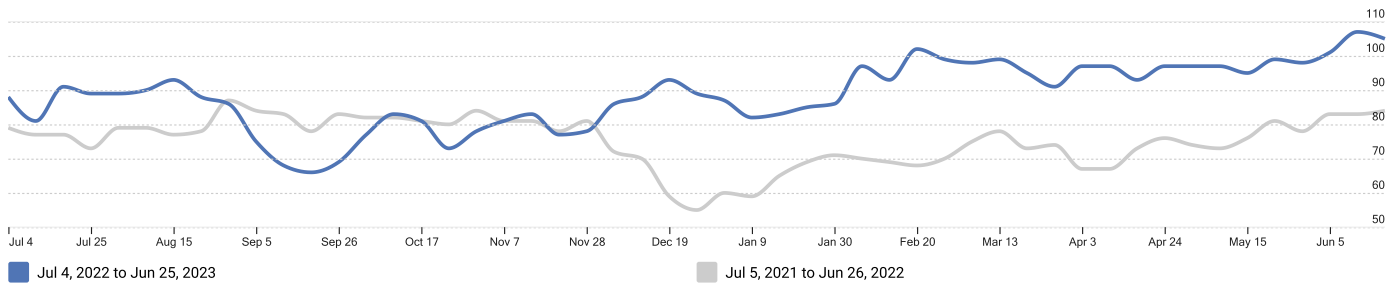
Postsecondary Programs Linked to Environmental Scientists and Geoscientists

Program	Awards
American River College	
Geology/Earth Science, General	3
California State University-Sacramento	
Environmental Science	57
Geology/Earth Science, General	20
Sierra College	
Environmental Studies	17
University of California-Davis	
Environmental Science	124
Environmental Studies	80
Environmental Toxicology	24
Geology/Earth Science, General	31
Hydrology and Water Resources Science	12
Marine Sciences	12

- 
 The number of graduates from postsecondary programs in the region identifies the pipeline of future workers as well as the training capacity to support industry demand.
- 
 Among postsecondary programs at schools located in the Sacramento-Roseville-Folsom, CA MSA, the sampling above identifies those most linked to Environmental Scientists and Geoscientists. For a complete list see JobsEQ®, <http://www.chmuraecon.com/jobseq>

RTI (Job Postings)

Active Job Ads by Date



Online job ads are a timely indicator of local demand. Occupation assignments shown below are made by Chmura based upon analysis of job titles and job descriptions. Top employers and listed job requirements are shown on the following pages.

Occupations

SOC	Occupation	Active Job Ads
19- 2041.00	Environmental Scientists and Specialists, Including Health	300
19- 2041.02	Environmental Restoration Planners	138
19- 2042.00	Geoscientists, Except Hydrologists and Geographers	97
19- 2043.00	Hydrologists	29
19- 2041.01	Climate Change Policy Analysts	17
19- 2041.03	Industrial Ecologists	1

Locations

Location	Active Job Ads	
Sacramento, California	186	
Sacramento County, California	155	
Yolo County, California	26	
Rancho Cordova, California	20	
Sacramento, CA 95814	13	
Sacramento, CA (CA82)	11	
El Dorado County, California	10	
Roseville, California	10	
Sacramento, CA 95811	10	
95678	7	

Employers

Employer Name	Active Job Ads	
State of California Department of Food & Agriculture	31	
CA DEPARTMENT OF PARKS AND RECREATION	30	
State of California Department of Fish and Wildlife	24	
State of California Department of Water Resources	23	
Rincon Consultants, Inc.	14	
AECOM	13	
ICF International	13	
Stantec	12	
State of California Department of Forestry & Fire Protection	12	
State of California Department of Toxic Substances Control	12	

Hard Skills

Skill Name	Active Job Ads	
Microsoft Excel	103	
Microsoft Office	88	
Report Writing/Report Preparation	76	
Hazardous Waste Operations and Emergency Response Standard (HAZWOPER)	58	
Technical Writing	56	
Microsoft PowerPoint	42	
Microsoft Word	42	
ESRI ArcGIS	37	
Telecommunications	36	
Data Analysis	27	

Job Titles

Job Title	Active Job Ads	
Environmental Scientist	76	
SENIOR ENVIRONMENTAL SCIENTIST (SPECIALIST)	57	
SENIOR ENVIRONMENTAL SCIENTIST (SUPERVISORY)	35	
Senior Environmental Planner	20	
Environmental Planner	12	
Environmental Planning Manager	9	
Staff Geologist	9	
ASSOCIATE ENVIRONMENTAL PLANNER	8	
ENGINEERING GEOLOGIST	8	
Environmental Specialist	7	

Education Levels

Minimum Education Level	Active Job Ads	
Bachelor's degree	272	
Master's degree	26	
Associate's degree	5	
High school diploma or equivalent	3	
Doctoral or professional degree	2	
Unspecified/other	274	

Programs

Program Name	Active Job Ads	
Environmental Science	102	
Geology	89	
Biology	62	
Science	46	
Engineering	45	
Natural Resource Management	34	
Environmental	28	
Civil Engineering	25	
Environmental Engineering	23	
Planning	21	

Top Skill and Certification Gaps

Top 10 Skill Gaps in Sacramento-Roseville-Folsom, CA MSA

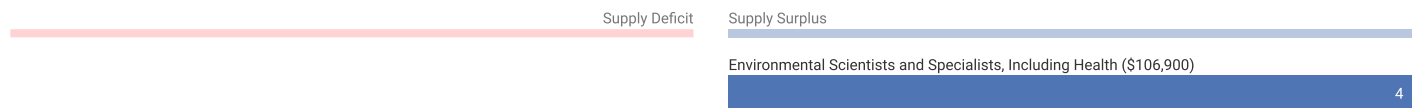
Name	Candidates	Openings	Gap
Business Development	3	10	-7
Hazardous Waste Operations and Emergency Response Standard (HAZWOPER)	8	12	-4
Adobe Acrobat	0	3	-3
Report Writing/Report Preparation	16	18	-2
Personal Computers (PC)	0	2	-2
Teaching/Training, Job	7	9	-2
Change Management	0	2	-2
R	2	3	-2
Telecommunications	1	2	-2
Microsoft Office	30	32	-1

Top 10 Certification Gaps in Sacramento-Roseville-Folsom, CA MSA

Name	Candidates	Openings	Gap
Project Management Professional (PMP)	0	2	-2
Commercial Driver's License (CDL)	0	1	-1
Certified Erosion, Sediment and Storm Water Inspector (CESSWI)	0	1	-1
Engineer in Training (EIT)	1	2	-1
Certified Hazardous Materials Manager (CHMM)	1	1	-1
Certified Environmental Professional (CEP)	0	1	-1
Certified Professional in Erosion and Sediment Control (CPESC)	1	1	0
Certification in Cardiopulmonary Resuscitation (CPR)	1	1	0
First Aid Certification	1	1	1
40 hour HAZWOPER	2	1	2

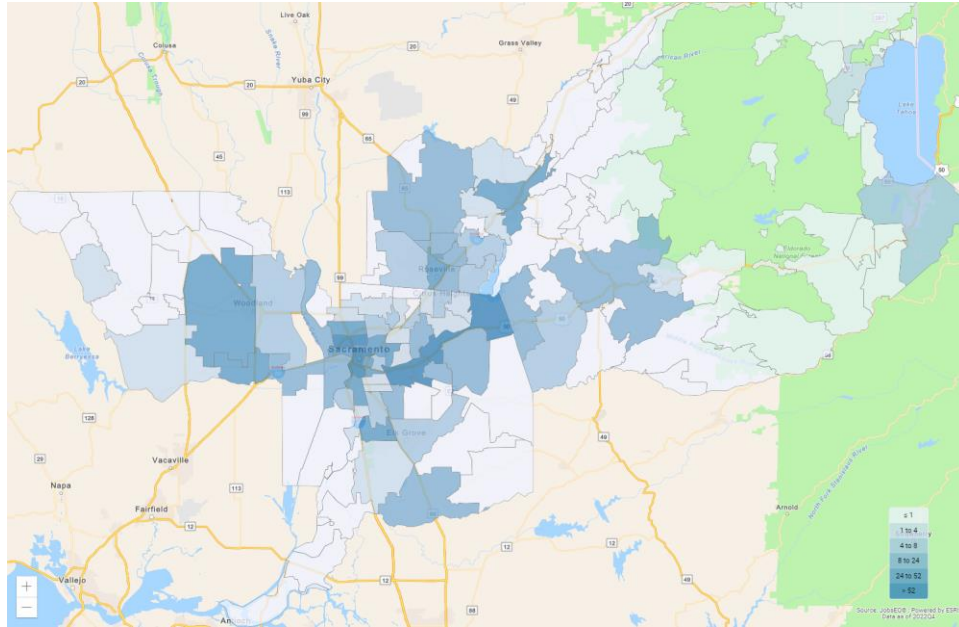
 Skill and certifications gaps can help inform employee development programs, as well as provide a comparison of the needs of regional employers to the supply.

Occupation Gaps



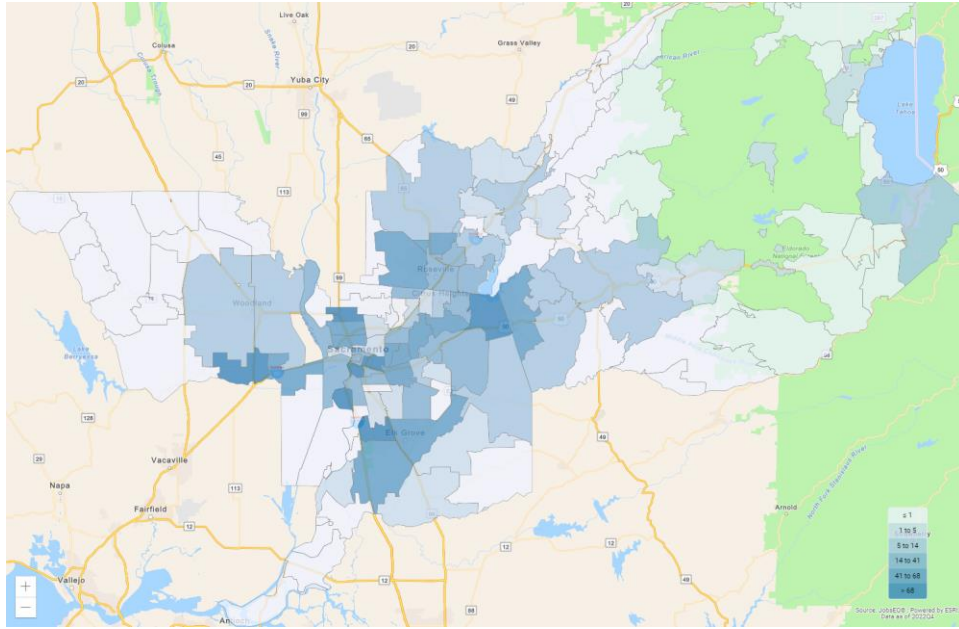
- 💡 The above are the potential average annual gaps over 10 years. Many variables go into this analysis, but at its core it is based on a forecast comparing occupation demand growth to the local population growth and the projected educational attainment of those residents. When an area, for example, has an occupation expected to grow quickly but the educational requirement for the occupation does not match well with the educational attainment of its residents, there is a high potential for an occupation shortfall in the region. Alternatively, slow-growing or contracting occupations often represent potential supply surpluses.
- 💡 The potential supply shortfall is an underlying force that the market needs to resolve one way or another, such as by employers recruiting from further distances for these occupations, wages going up to attract more candidates, and/or increased demand and wages enticing more local residents to get training for these occupations. While this an important analysis for determining local occupation needs, the occupation gap should be considered along with other regional data including growth and separation forecasts, unemployment rates, wage trends, and award and skill gap analyses.

Geographic Distribution



Top ZCTAs by Place of Work for Environmental Scientists and Geoscientists, 2022Q4

Region	Employment
ZCTA 95814	740
ZCTA 95811	132
ZCTA 95827	111
ZCTA 95630	109
ZCTA 95670	68
ZCTA 95818	66
ZCTA 95826	55
ZCTA 95833	53
ZCTA 95815	40
ZCTA 95834	38

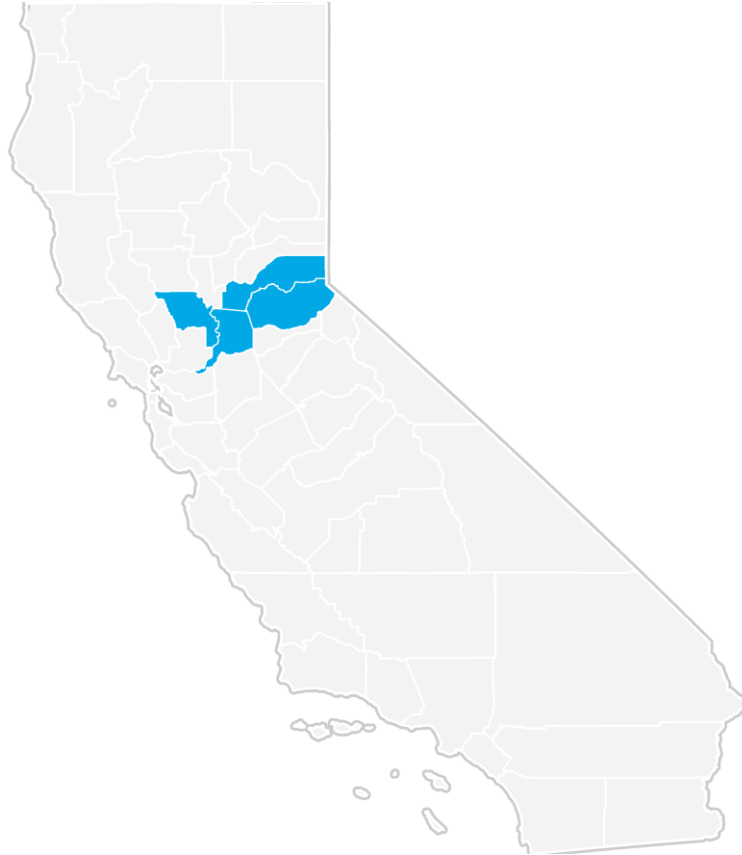


Top ZCTAs by Place of Residence for Environmental Scientists and Geoscientists, 2022Q4

Region	Employment
ZCTA 95630	162
ZCTA 95835	107
ZCTA 95616	107
ZCTA 95818	96
ZCTA 95816	91
ZCTA 95819	85
ZCTA 95831	81
ZCTA 95758	69
ZCTA 95618 (Yolo County, CA portion)	67
ZCTA 95864	67

💡 “Place of work” employment is based upon the location of employers for these workers. “Place of residence” data refers to the home locations of the workforce, which is typically the preferred data set to use when calculating labor availability within a drive-time or radius of a potential worksite.

Sacramento-Roseville-Folsom, CA MSA Regional Map



Data Notes

- Occupation employment by default indicates employment by place of work. Occupation employment is as of 2022Q4 and is based on industry employment and local staffing patterns calculated by Chmura and utilizing BLS OEWS data. Employment forecasts are modeled by Chmura and are consistent with BLS national-level 10-year forecasts. Wages by occupation are as of 2022Q4, utilizing BLS OEWS data, imputed and brought forward by Chmura. Entry-level and experienced wages are derived from these source data, computed by Chmura.
- Industry employment is as of 2022Q4 and is based upon BLS QCEW data, imputed by Chmura where necessary, and supplemented by additional sources including Census ZBP data.
- Education and training requirements are from the BLS. Educational attainment mix and other occupation demographics data are modeled by Chmura for 2022Q4 using regional occupation employment from JobsEQ, ZCTA-level demographics data from the Census Bureau, and national occupation-demographics patterns from the BLS.
- Postsecondary awards are per the NCES and are for the 2020-2021 academic year. Any programs shown are linked with the occupation(s) being analyzed via the program-occupation crosswalk, which may not be comprehensive. Any programs shown reflect only data reported to the NCES; reporting is required of all Title IV schools. Training providers that do not report data to the NCES are not reflected.
- Job ads data are online job posts from the Real-Time Intelligence (RTI) data set, produced wholly by Chmura and gleaned from over 40,000 websites. Data reflect ads active during the last twelve month period ending 07/05/2023 and advertised for any Zip Code Tabulation Area in or intersecting with the region for which this report was produced. Historical ad volume is revised as additional data are made available and processed. Since many extraneous factors can affect short-term volume of online job postings, time-series data can be volatile and should be used with caution. All ad counts represent deduplicated figures.
- For skill and certification gaps, openings and candidates are based upon regional occupation demand (growth plus separations) and the percent of skill demand and supply. Skill demand mix data are per a one-year sample of RTI data; skill supply data are estimated using a five-year sample of resumes data; both data sets compiled as of August 2021. Data may be based, at least in part, on data from broader geographies; see the Skill Gaps analytic export for more details.
- Occupation gaps are modeled by Chmura, indicating long-term potential supply and demand mismatches in a region due, in part, to job demand and labor pool dynamics, including educational attainment and projected growth.
- Occupation employment by place of residence is as of 2022Q4 and modeled by Chmura based upon occupation employment by place of work and commuting patterns. Commuting patterns are derived from source data from the Census Bureau, occupation-specific commuting tendencies, and updated to reflect more recent population and employment estimates.
- Figures may not sum due to rounding.

Region Definition

Sacramento-Roseville-Folsom, CA MSA is defined as the following counties:

El Dorado County, California

Placer County, California

Sacramento County, California

Yolo County, California

FAQ

What is (LQ) location quotient?

Location quotient is a measurement of concentration in comparison to the nation. An LQ of 1.00 indicates a region has the same concentration of an industry (or occupation) as the nation. An LQ of 2.00 would mean the region has twice the expected employment compared to the nation and an LQ of 0.50 would mean the region has half the expected employment in comparison to the nation.

What is annual demand?

Annual demand is a of the sum of the annual projected growth demand and separation demand. Separation demand is the number of jobs required due to separations—labor force exits (including retirements) and turnover resulting from workers moving from one occupation into another. Note that separation demand does not include all turnover—it does not include when workers stay in the same occupation but switch employers. Growth demand is the increase or decrease of jobs expected due to expansion or contraction of the overall number of jobs.