JOBSEQ

Occupation Report

Physicists

Sacramento-Roseville-Folsom, CA MSA

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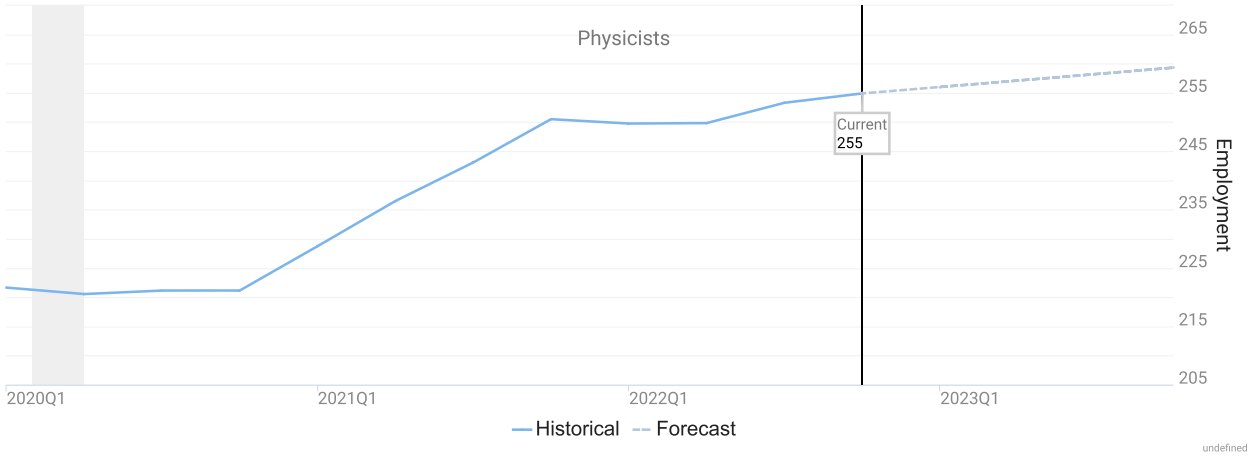
Occupation Snapshot

6-Digit Occupation	Empl	Avg Mean Wages	LQ	3-Year Empl Change	Annual Demand	Forecast Ann Growth
Physicists	**255**	**$154,400**	**1.91**	**33**	**24**	**1.7%**



"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).

Source: JobsEQ®, http://www.chmuraecon.com/jobseq
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Employment by Industry

Industry Title	% of Occ Empl	Empl	10-Year Separations	10-Year Empl Growth	10-Year Total Demand
Scientific Research and Development Services	58.1%	148	119	39	158
Colleges, Universities, and Professional Schools	13.0%	33	25	4	29
General Medical and Surgical Hospitals	5.0%	13	9	1	11
Executive, Legislative, and Other General Government Support	3.0%	8	6	0	5
Employment Services	2.7%	7	5	1	6
Administration of Environmental Quality Programs	2.5%	6	5	0	4
Administration of Economic Programs	2.1%	5	4	0	4
Justice, Public Order, and Safety Activities	2.0%	5	4	0	4
Administration of Human Resource Programs	2.0%	5	4	0	4
Outpatient Care Centers	1.7%	4	3	1	4
Architectural, Engineering, and Related Services	1.7%	4	3	0	3
Management, Scientific, and Technical Consulting Services	1.5%	4	3	1	4
Offices of Physicians	1.5%	4	3	0	3
National Security and International Affairs	0.5%	1	1	0	1
All Others	2.7%	7	5	1	6

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.

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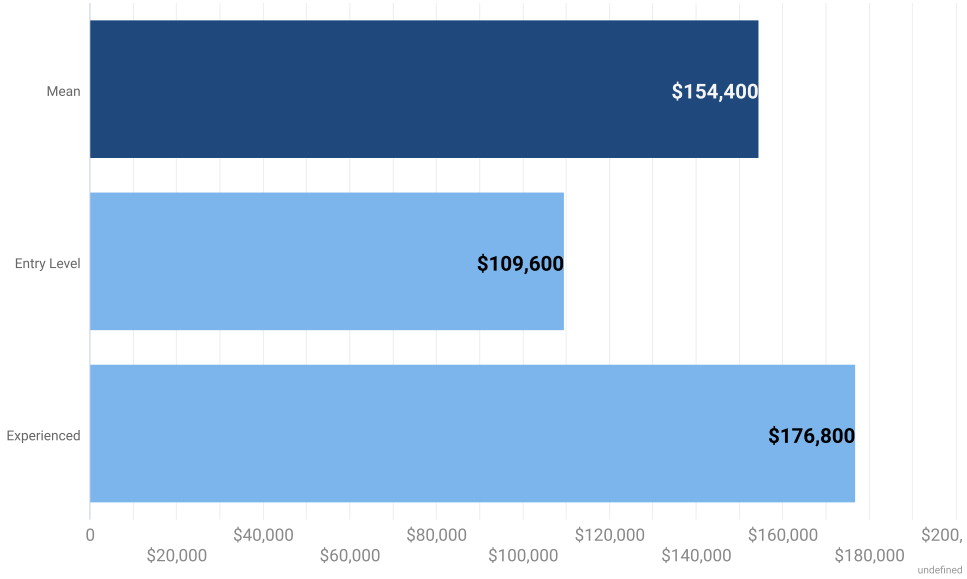
Wages



Occupation	Mean	Median	Entry Level	Experienced
Physicists	$154,400	$150,300	$109,600	$176,800

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.

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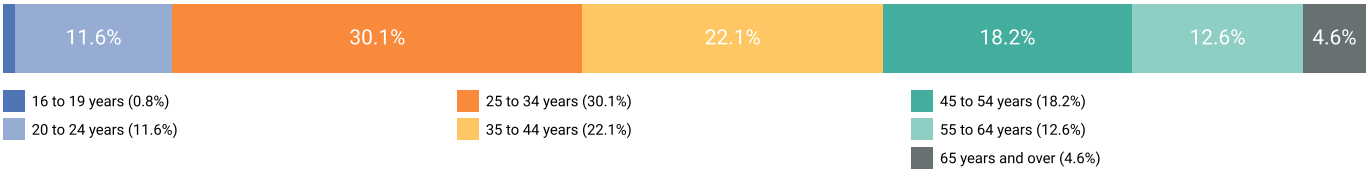
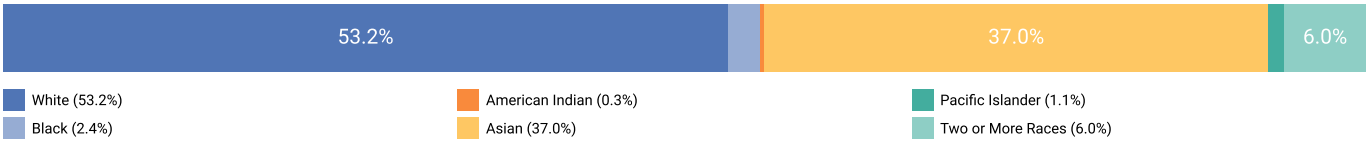
Occupation Demographics

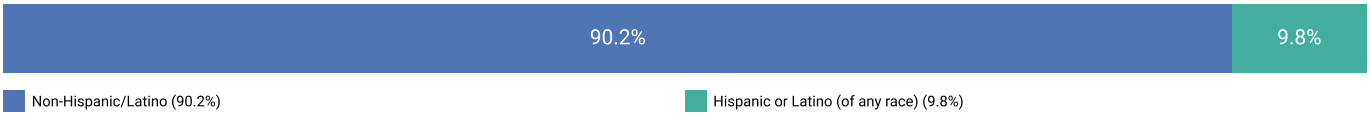
Age



Race

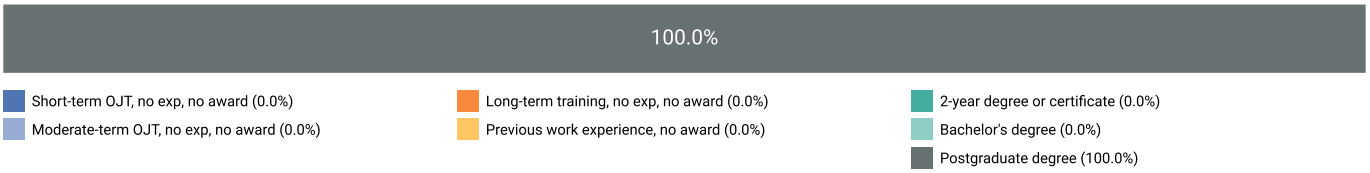


Ethnicity



Gender

Education and Training Requirements



Source: JobsEQ®, http://www.chmuraecon.com/jobseq

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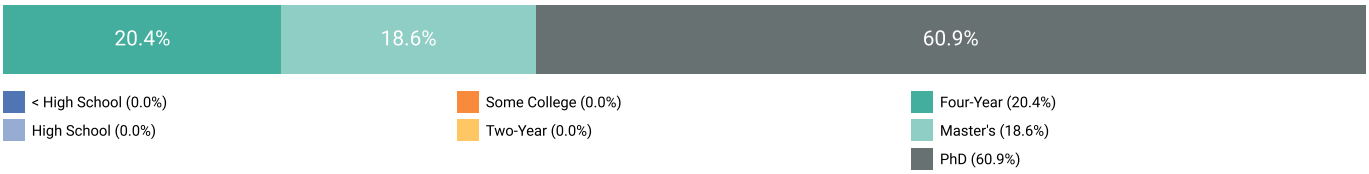
Education Profile

Educational Attainment



Occupation	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Physicists	Doctoral or professional 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.

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Postsecondary Programs Linked to Physicists

Program	Awards
American River College	
Physics, General	16
California State University-Sacramento	
Physics, General	23
Cosumnes River College	
Physics, General	6
Folsom Lake College	
Physics, General	17
Sierra College	
Physics, General	16
University of California-Davis	
Engineering Physics/Applied Physics	0
Optics/Optical Sciences	0
Physics, General	74
Physics, Other	16

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 Physicists. For a complete list see JobsEQ®, http://www.chmuraecon.com/jobseq

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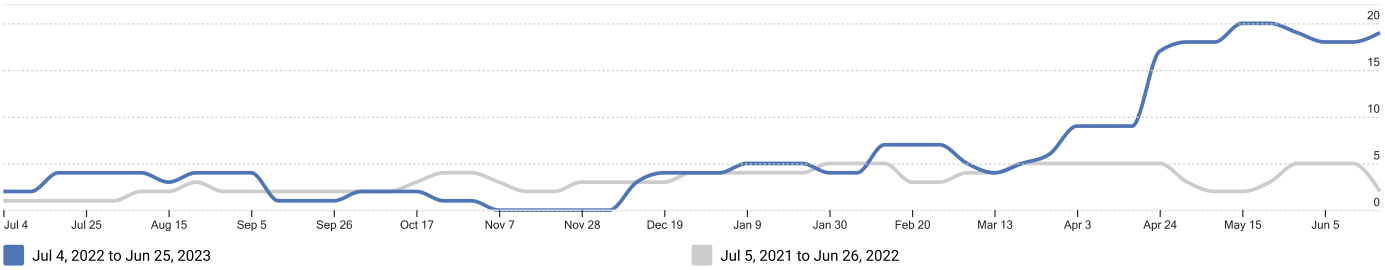
RTI (Job Postings)

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- 2012.00	Physicists	39	

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Locations

Location	Active Job Ads
Sacramento, California	15
University of California Davis	7
Sacramento County, California	6
Mcclellan, California	3
McClellan Park, CA	1
Roseville, California	1
SACRAMENTO, CA 95816-3300	1
Sacramento, CA 95816	1
Sacramento, CA 95817 (Medical Center area)	1
Sacramento, CA, 95827	1

Employers

Employer Name	Active Job Ads
Davis, California	6
State of California Department of Public Health	6
Lawrence Berkeley National Laboratory	5
NORTHROP GRUMMAN	4
LBL	2
Sacramento, California	2
Sutter Health	2
University of California, Davis	2
CommonSpirit Health	1
Dignity Health Medical Group	1

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Hard Skills

Skill Name	Active Job Ads
Teaching/Training, Job	5
Linear Accelerators	4
MATLAB	4
Python	4
Machine Learning	3
Public Health	3
Radio Frequency (RF)	3
Ability to Lift 41-50 lbs.	2
Ability to Lift 51-100 lbs.	2
Computer Programming/Coding	2

Job Titles

Job Title	Active Job Ads
ASSISTANT HEALTH PHYSICIST	5
Medical Physicist	3
Associate Health Physicist	2
Computed Tomography (CT) Physicist	2
Imaging Physicist at the EXPLORER Molecular Imaging Center (EMIC)	2
Physicist	2
Principal Experimental Physicist / Senior Principal Experimental Physicist	2
Senior Physicist - SOM: Public Health Sciences Sacramento Campus	2
Applied Physicist Staff Scientist	1
Assistant Project Scientist- Millimeter Wave Plasma Diagnostics Group	1

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Education Levels

Minimum Education Level	Active Job Ads	
Bachelor's degree	9	
Master's degree	8	
Doctoral or professional degree	4	
Unspecified/other	18	

Programs

Program Name	Active Job Ads	
Physics	4	
Engineering	3	
Electrical Engineering	2	
Chemistry	1	
Technical	1	

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Top Skill and Certification Gaps

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

Name	Candidates	Openings	Gap
Linear Accelerators	0	2	-2
MATLAB	1	2	-1
Laser Systems	0	1	-1
Microsoft Excel	0	1	-1
FORTRAN	0	1	-1
Interface Definition Language (IDL)	0	1	-1
Data Analysis	2	2	-1
National Instruments LabVIEW	0	1	-1
Wolfram Research Mathematica	0	1	-1
C++	1	1	0

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

Name	Candidates	Openings	Gap
Certified Health Physicist (CHP)	2	0	2
Medical Physics	6	3	3

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.

Source: JobsEQ®, http://www.chmuraecon.com/jobseq
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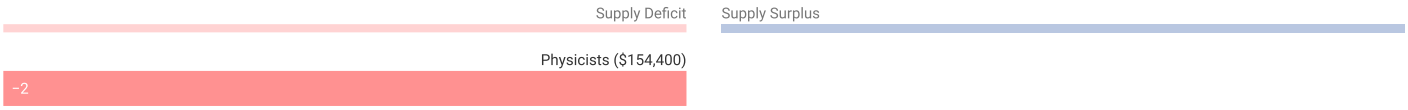
Occupation Gaps



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.

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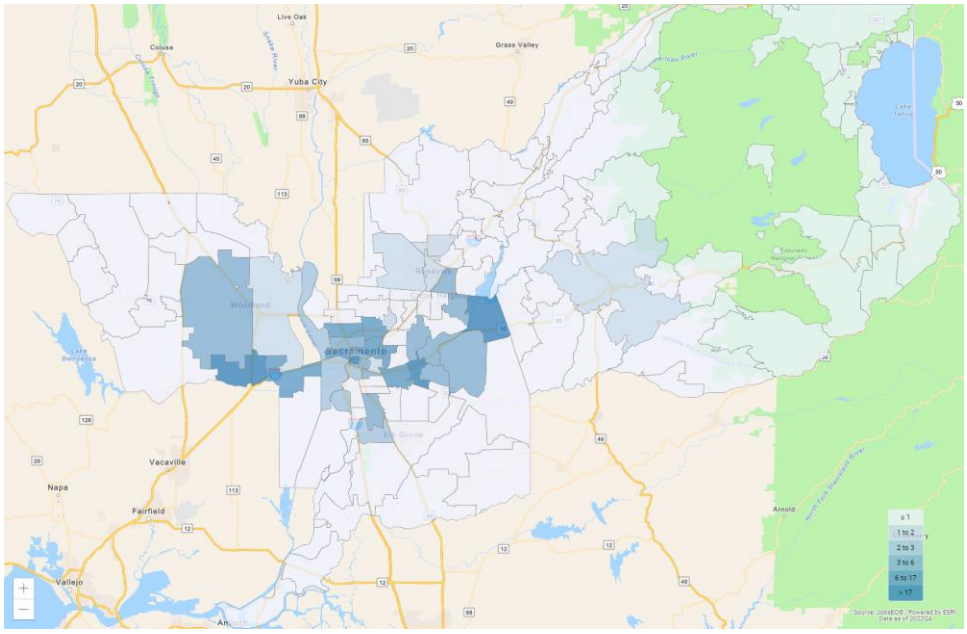
Geographic Distribution



Top ZCTAs by Place of Work for Physicists, 2022Q4

Region	Employment
ZCTA 95827	42
ZCTA 95814	32
ZCTA 95616	23
ZCTA 95630	18
ZCTA 95815	14
ZCTA 95838	12
ZCTA 95825	9
ZCTA 95605	7
ZCTA 95834	7
ZCTA 95826	7

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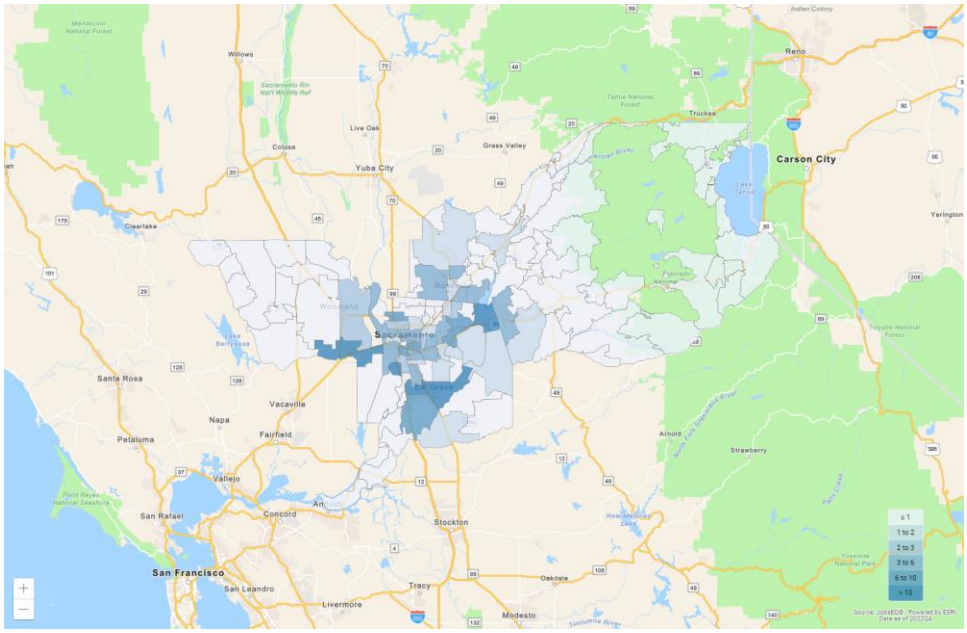

Top ZCTAs by Place of Residence for Physicists, 2022Q4

Region	Employment
ZCTA 95616	30
ZCTA 95630	17
ZCTA 95618 (Yolo County, CA portion)	15
ZCTA 95831	13
ZCTA 95758	12
ZCTA 95624	10
ZCTA 95757	10
ZCTA 95819	9
ZCTA 95818	8
ZCTA 95835	8

"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.

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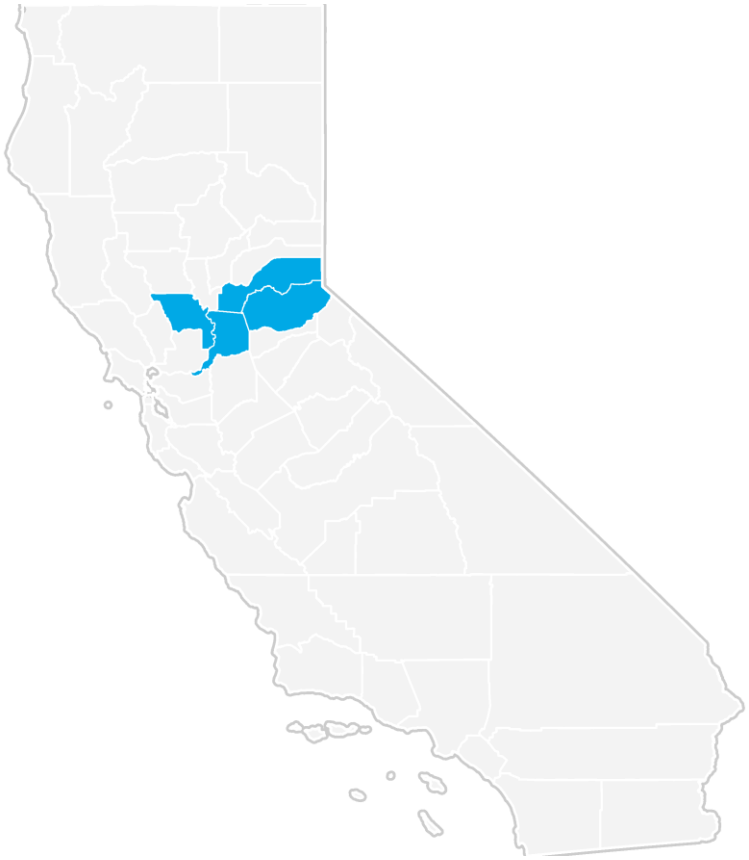
Sacramento-Roseville-Folsom, CA MSA Regional Map



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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 dyanamics, including educational attainment and projected growth.
- Occupation employment by place of residence is as of 2022Q4 and modeled by Chmura based upon occuaption employment by place of work and commuting patterns. Commuting patterns are derived from source data from the Census Bureau, occupation-specific commuting tendancies, and updated to reflect more recent population and employment estimates.
- Figures may not sum due to rounding.

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Region Definition

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

El Dorado County, California	Sacramento County, California
Placer County, California	Yolo County, California

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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.

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