



# Occupation Report

## Mechanical Engineers

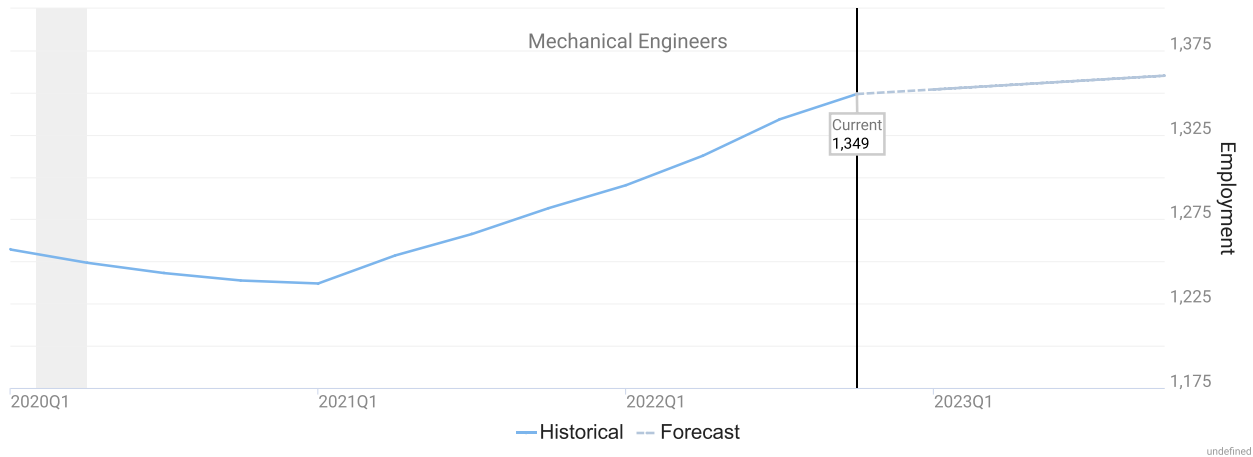
Sacramento-Roseville-Folsom, CA MSA



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# Occupation Snapshot

6-Digit Occupation	Empl	Avg Mean Wages	LQ	3-Year Empl Change	Annual Demand	Forecast Ann Growth
Mechanical Engineers	1,349	\$109,800	0.64	100	93	0.8%
<b>Mechanical Engineers</b>	<b>1,349</b>	<b>\$109,800</b>	<b>0.64</b>	<b>100</b>	<b>93</b>	<b>0.8%</b>



- 💡 “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).

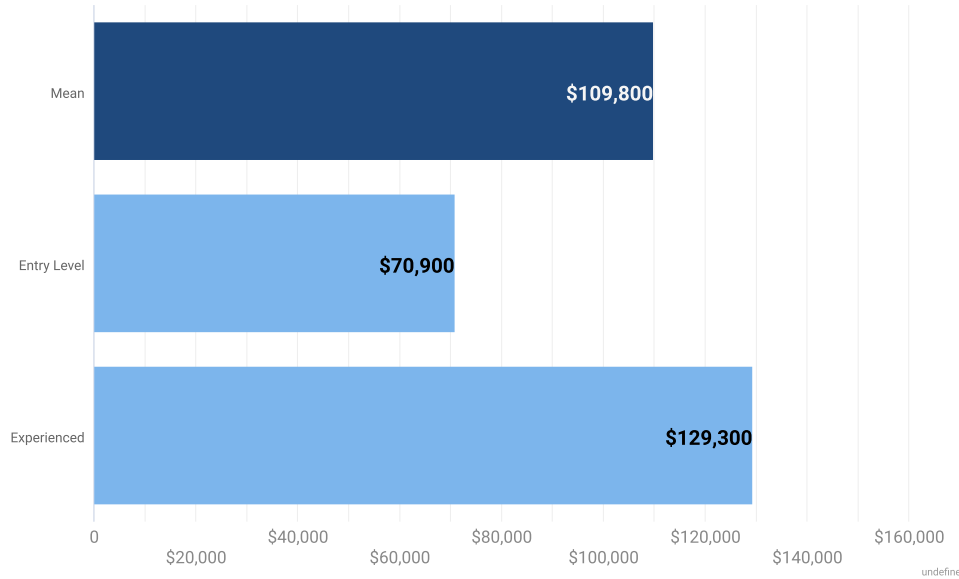
# Employment by Industry

Industry Title	% of Occ Empl	Empl	10-Year Separations	10-Year Empl Growth	10-Year Total Demand
Architectural, Engineering, and Related Services	33.4%	451	272	21	293
Scientific Research and Development Services	9.2%	124	78	18	96
Railroad Rolling Stock Manufacturing	5.5%	74	45	7	52
Employment Services	4.0%	54	33	5	38
Management of Companies and Enterprises	3.1%	41	25	4	29
Building Equipment Contractors	2.6%	35	22	3	24
Medical Equipment and Supplies Manufacturing	2.0%	27	17	4	22
Machinery, Equipment, and Supplies Merchant Wholesalers	1.9%	26	16	2	18
Metalworking Machinery Manufacturing	1.7%	23	15	4	19
Aerospace Product and Parts Manufacturing	1.6%	22	13	2	15
Other General Purpose Machinery Manufacturing	1.6%	22	13	0	12
Computer and Peripheral Equipment Manufacturing	1.6%	21	13	2	15
Computer Systems Design and Related Services	1.4%	19	12	4	16
Natural Gas Distribution	1.3%	17	10	1	11
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	1.2%	17	10	1	11
Architectural and Structural Metals Manufacturing	1.2%	16	10	2	12
Agriculture, Construction, and Mining Machinery Manufacturing	1.2%	16	9	0	9
Colleges, Universities, and Professional Schools	1.0%	14	9	2	10
Industrial Machinery Manufacturing	1.0%	14	8	0	8
Semiconductor and Other Electronic Component Manufacturing	1.0%	13	8	1	9
All Others	22.6%	304	188	32	220

 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

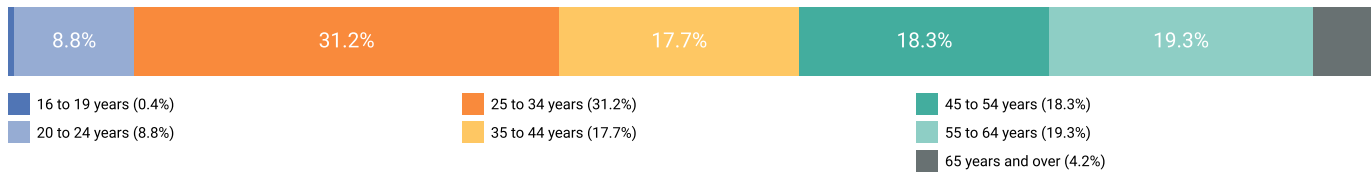


Occupation	Mean	Median	Entry Level	Experienced
Mechanical Engineers	\$109,800	\$105,200	\$70,900	\$129,300

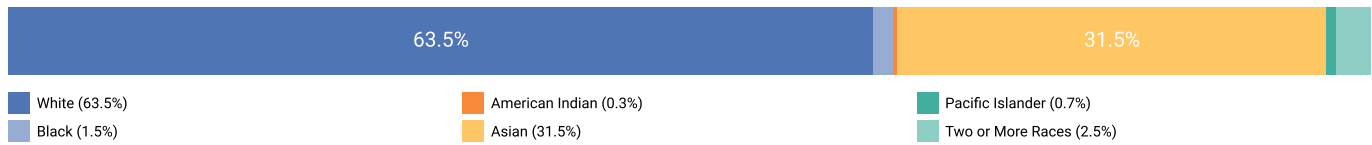
- 💡 Occupation wages here utilize BLS OEWS data, imputed and brought forward by Chmura.
- 💡 When this report is run for an occupation group, the table above displays up to the top ten detailed occupations which have the highest average wages within the occupation group.

# Occupation Demographics

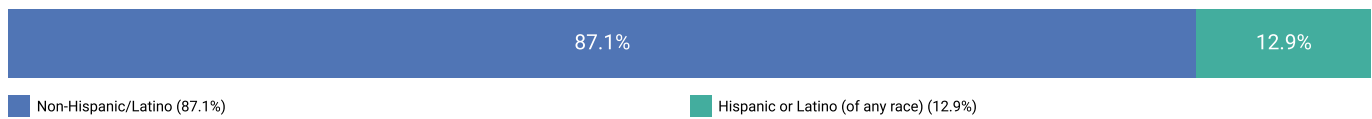
## Age



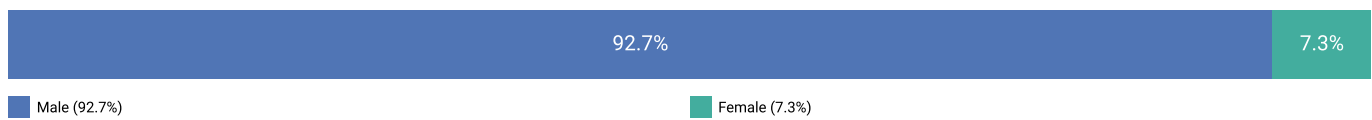
## Race



## Ethnicity



## Gender

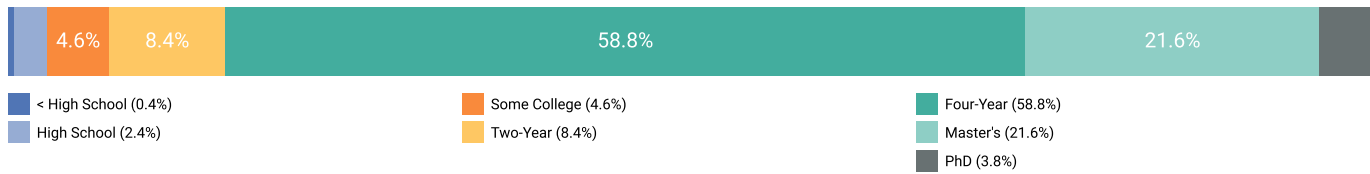


## Education and Training Requirements



# Education Profile

## Educational Attainment




Occupation	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Mechanical Engineers	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 Mechanical Engineers

Program	Awards
<b>California State University-Sacramento</b>	
Mechanical Engineering	229
<b>University of California-Davis</b>	
Mechanical Engineering	274

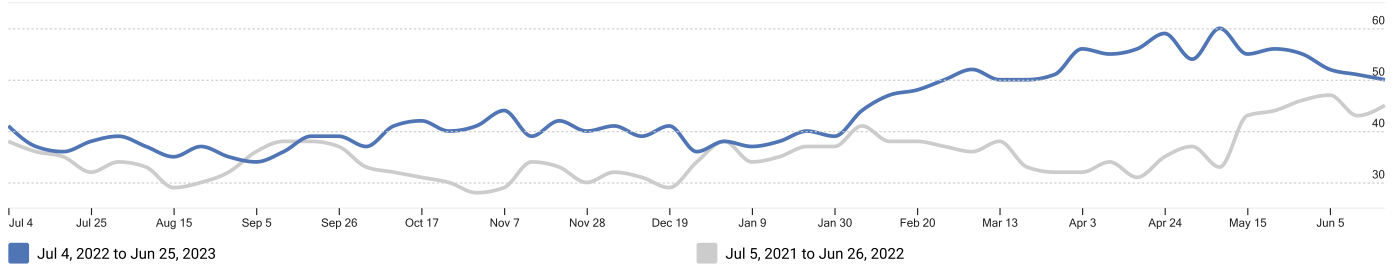
 The number of graduates from postsecondary programs in the region identifies the pipeline of future workers as well as the training capacity to support industry demand.


 Among postsecondary programs at schools located in the Sacramento-Roseville-Folsom, CA MSA, the sampling above identifies those most linked to Mechanical Engineers. 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
17- 2141.00	Mechanical Engineers	240
17- 2141.01	Fuel Cell Engineers	9

### Locations

Location	Active Job Ads	
Sacramento, California	89	
Sacramento County, California	20	
Roseville, California	13	
Folsom, California	9	
United States-California-West Sacramento-US, CA, West Sacramento, NPBU Office	7	
Sacramento, CA 94203	6	
Sacramento, CA 95828	6	
Sacramento, California 94203	6	
CA105: Golden Foothills Sacramento 5180 Golden Foothills Parkway Suite 200, El Dorado Hills, CA, 95762 USA	5	
Davis, California	5	

### Employers

Employer Name	Active Job Ads	
Jobot	12	
Actalent	10	
Flatiron Construction Corp	9	
Cummins Inc.	7	
HDR	6	
Hewlett Packard Enterprise	6	
Raytheon Technologies	6	
Intel Corporation	5	
Jacobs	5	
Siemens	5	

### Hard Skills

Skill Name	Active Job Ads	
Autodesk AutoCAD	53	
Mechanical Design	53	
Plumbing	51	
Computer Aided Design Software (CAD Software)	46	
Autodesk Revit	34	
Microsoft Office	34	
Mechanical Engineering	32	
Dassault Systemes SolidWorks Software	30	
Microsoft Excel	30	
Manufacturing	17	

### Job Titles

Job Title	Active Job Ads	
Mechanical Engineer	37	
Senior Mechanical Engineer	17	
Field Engineer	9	
Mechanical Design Engineer	8	
NAND Product Quality and Reliability Engineer (SK)	5	
Field Engineer - New College Graduate	4	
Field Engineer Intern	4	
Mechanical Design Engineer PE	4	
Mechanical Engineering Intern	4	
Design Engineer	3	

### Education Levels

Minimum Education Level	Active Job Ads	
Bachelor's degree	154	
Associate's degree	8	
Master's degree	7	
Doctoral or professional degree	2	
Unspecified/other	78	

### Programs

Program Name	Active Job Ads	
Mechanical Engineering	105	
Engineering	54	
Civil Engineering	13	
Construction Management	9	
Electrical	8	
Aerospace Engineering	7	
Physics	7	
Computer Engineering	6	
Science	6	
Architectural Engineering	5	

# Top Skill and Certification Gaps

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

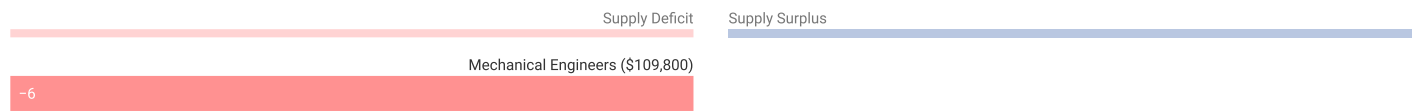
Name	Candidates	Openings	Gap
SAP	3	7	-4
Autodesk Revit	8	11	-4
Microsoft Word	3	6	-4
Personal Computers (PC)	0	2	-2
Occupational Safety and Health Administration Regulations (OSHA Regulations)	0	2	-2
Root Cause Analysis	0	3	-2
Equipment Selection	2	4	-2
Computer Networking	1	3	-2
Fabrication	2	4	-2
Performance Management	0	2	-2



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

Name	Candidates	Openings	Gap
Project Management Professional (PMP)	0	1	-1
Certified Energy Manager (CEM)	0	1	-1
LEED Accredited Professional (not specified)	0	1	0
Engineer in Training (EIT)	6	7	0
Secret Clearance	3	0	2

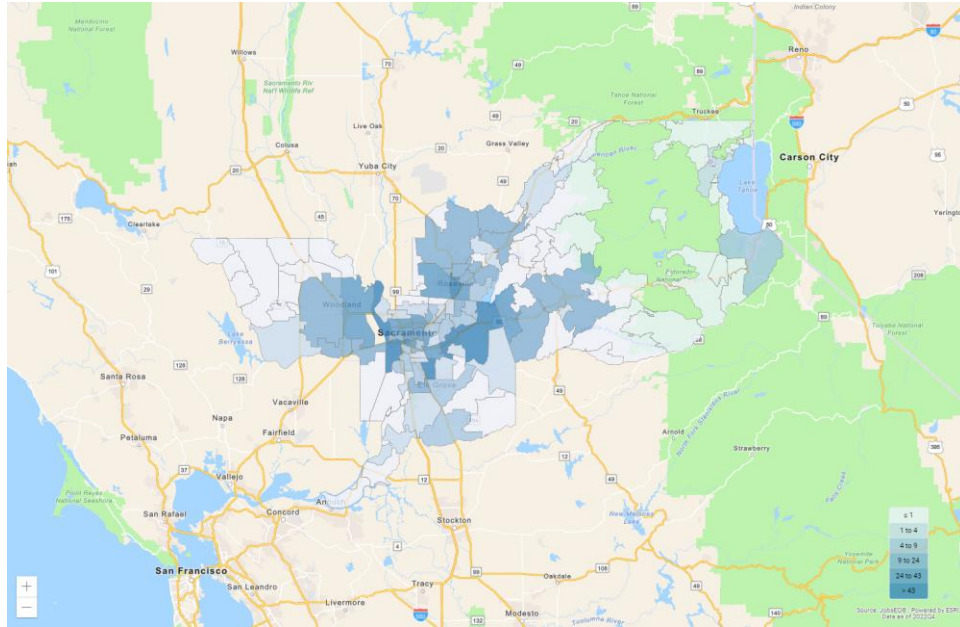
 Skill and certifications gaps can help inform employee development programs, as well as provide a comparison of the needs of regional employers to the supply.

# Occupation Gaps



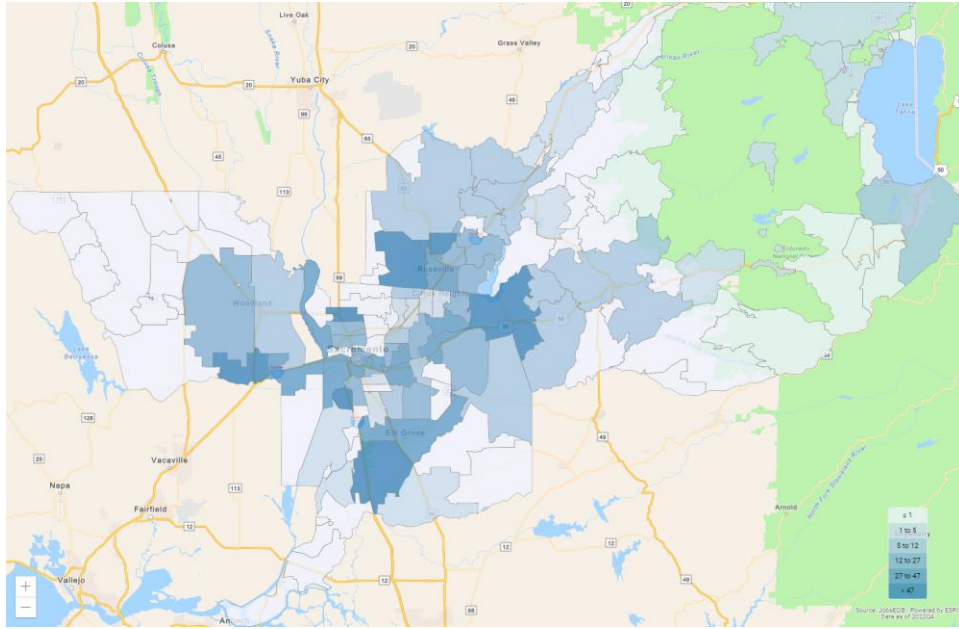
-  The above are the potential average annual gaps over 10 years. Many variables go into this analysis, but at its core it is based on a forecast comparing occupation demand growth to the local population growth and the projected educational attainment of those residents. When an area, for example, has 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 Mechanical Engineers, 2022Q4**

Region	Employment
ZCTA 95814	113
ZCTA 95630	109
ZCTA 95828	97
ZCTA 95742	65
ZCTA 95670	64
ZCTA 95827	52
ZCTA 95691	49
ZCTA 95678	43
ZCTA 95826	42
ZCTA 95833	36



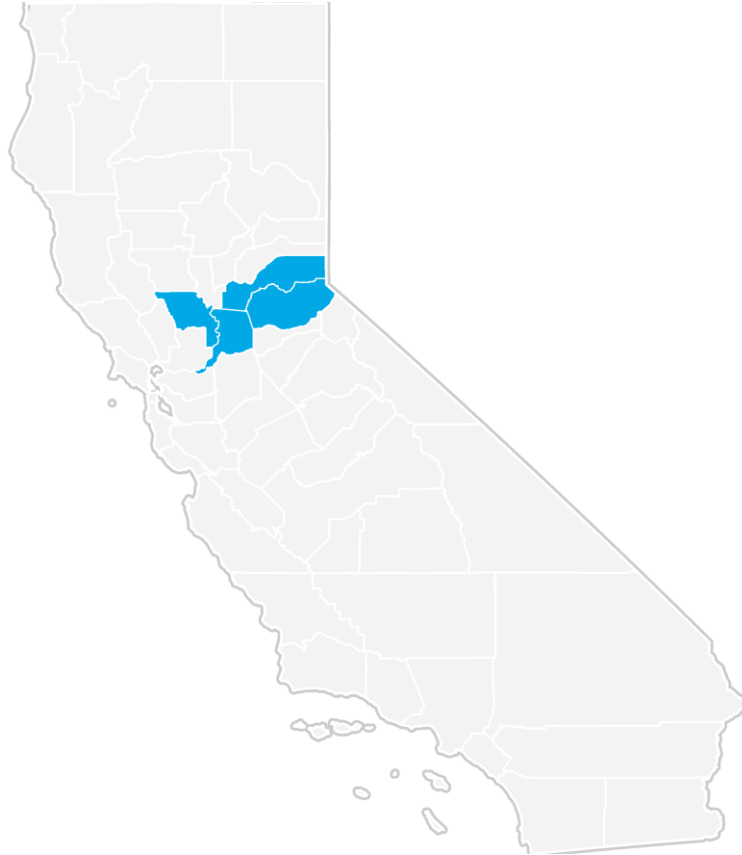
**Top ZCTAs by Place of Residence for Mechanical Engineers, 2022Q4**

Region	Employment
ZCTA 95630	110
ZCTA 95747	88
ZCTA 95616	67
ZCTA 95831	60
ZCTA 95762	57
ZCTA 95757	52
ZCTA 95765	51
ZCTA 95835	48
ZCTA 95678	46
ZCTA 95758	45

💡 “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 06/29/2023 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

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Placer County, California

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Sacramento County, California

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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.