



Occupation Report

Software Developers

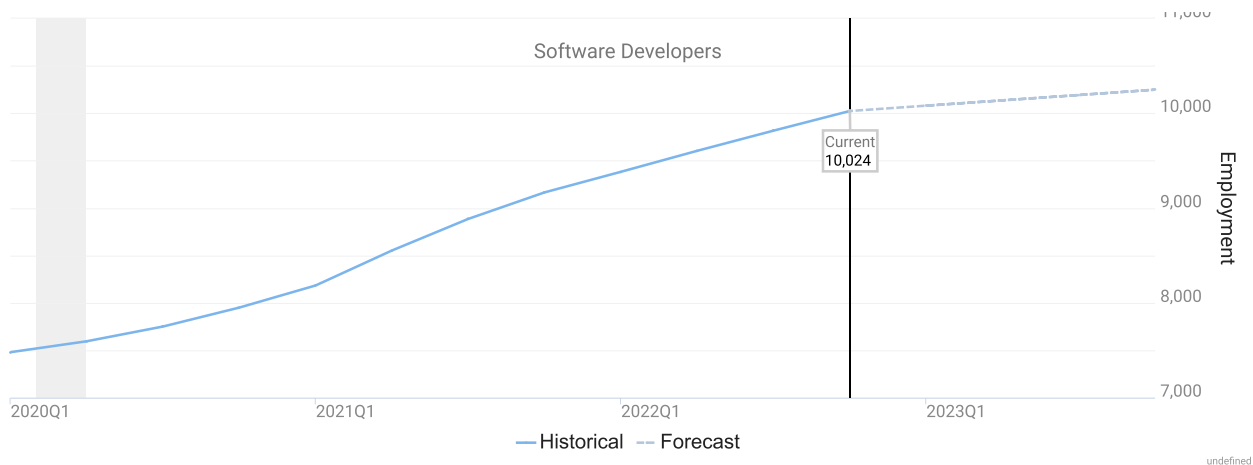
Sacramento-Roseville-Folsom, CA MSA



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Occupation Snapshot



6-Digit Occupation	Empl	Avg Mean Wages	LQ	3-Year Empl Change	Annual Demand	Forecast Ann Growth
Software Developers	10,024	\$138,600	0.79	2,754	939	2.2%



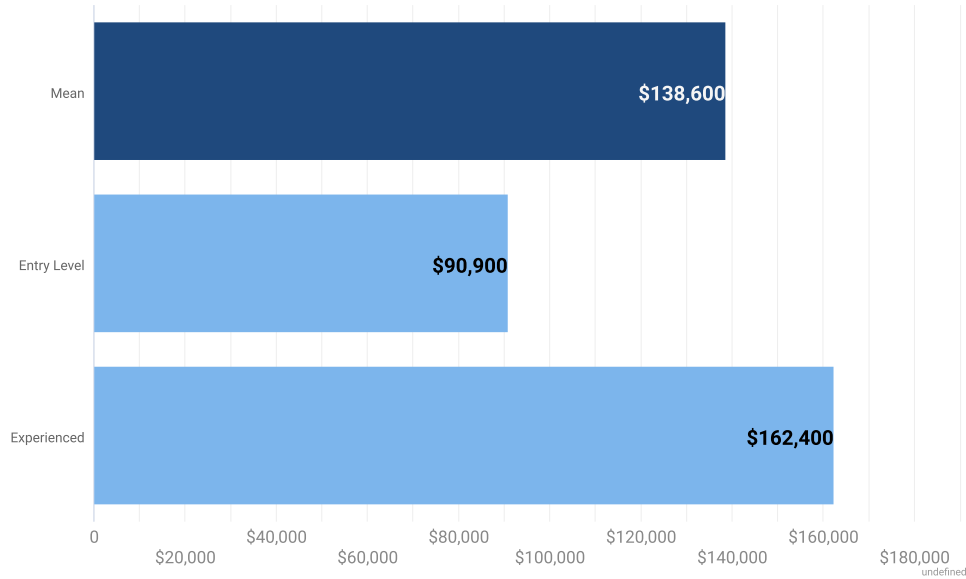
- 💡 “Annual Demand” is the projected need for new entrants into an occupation. New entrants are needed due to expected growth and to replace workers who left the occupation due to factors such as retirement or switching careers.
- 💡 “Forecast Ann Growth” is the expected change in jobs due to national, 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
Computer Systems Design and Related Services	29.2%	2,927	2,199	933	3,132
Other Professional, Scientific, and Technical Services	7.4%	747	506	55	561
Management, Scientific, and Technical Consulting Services	4.8%	476	343	103	446
Software Publishers	4.6%	463	337	111	448
Scientific Research and Development Services	4.4%	438	325	128	453
Management of Companies and Enterprises	3.7%	374	273	93	366
Architectural, Engineering, and Related Services	3.6%	363	257	63	320
Computer and Peripheral Equipment Manufacturing	3.5%	351	257	88	345
Insurance Carriers	2.9%	294	210	57	267
Computing Infrastructure Providers, Data Processing, Web Hosting, and Related Services	2.8%	279	208	83	291
Employment Services	2.5%	251	183	64	247
Web Search Portals, Libraries, Archives, and Other Information Services	2.0%	202	155	75	230
Media Streaming Distribution Services, Social Networks, and Other Media Networks and Content Providers	1.7%	173	127	45	172
Executive, Legislative, and Other General Government Support	1.6%	163	114	25	140
Agencies, Brokerages, and Other Insurance Related Activities	1.6%	159	117	41	158
Professional and Commercial Equipment and Supplies Merchant Wholesalers	1.3%	130	96	35	130
Depository Credit Intermediation	1.3%	128	96	41	137
Office Administrative Services	1.0%	103	76	30	106
Administration of Human Resource Programs	0.9%	93	65	14	79
Colleges, Universities, and Professional Schools	0.8%	79	59	23	82
All Others	18.3%	1,833	1,317	385	1,703

-  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

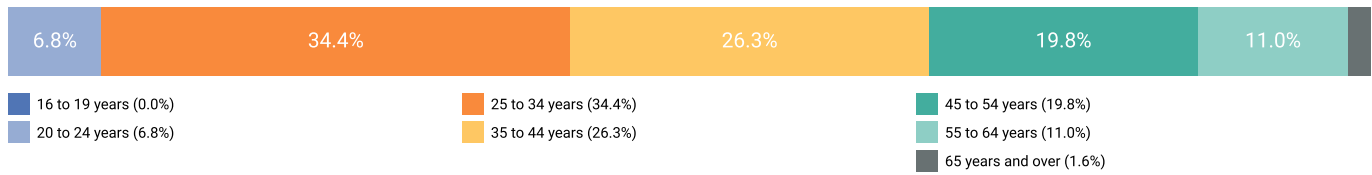


Occupation	Mean	Median	Entry Level	Experienced
Software Developers	\$138,600	\$135,400	\$90,900	\$162,400

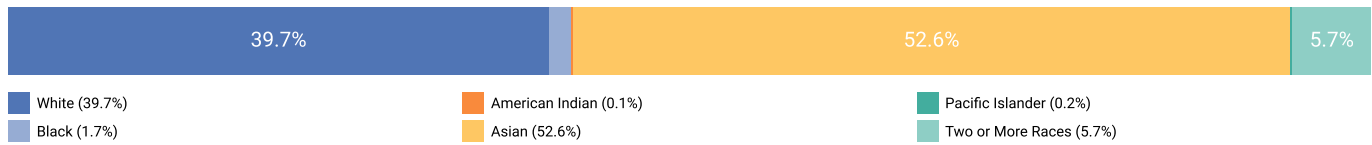
- 💡 Occupation wages here utilize BLS OEWS data, imputed and brought forward by Chmura.
- 💡 When this report is run for an occupation group, the table above displays up to the top ten detailed occupations which have the highest average wages within the occupation group.

Occupation Demographics

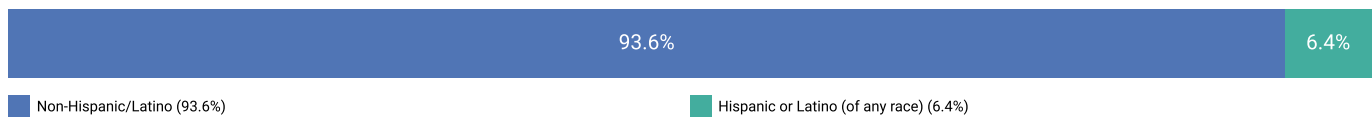
Age



Race



Ethnicity



Gender

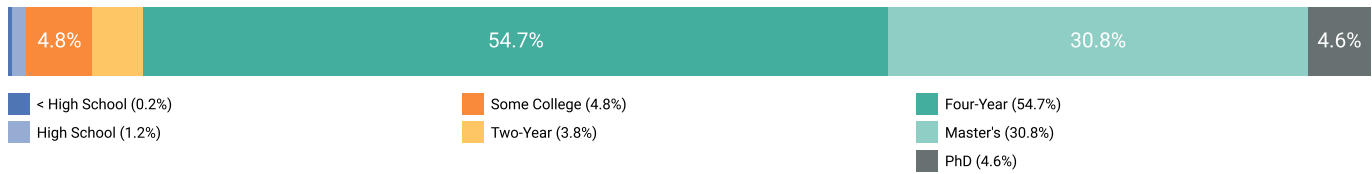


Education and Training Requirements



Education Profile

Educational Attainment



Occupation	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Software Developers	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 Software Developers

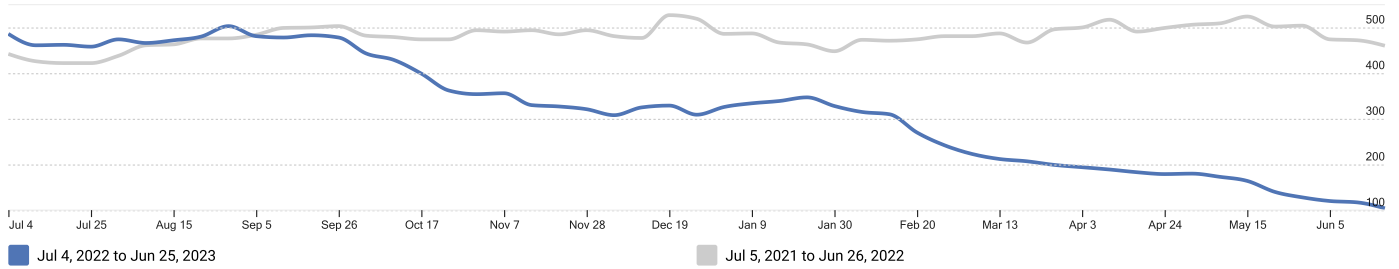
Program	Awards
American River College	
Computer Programming/Programmer, General	27
Computer Science	43
California State University-Sacramento	
Computer Engineering, General	74
Computer Science	310
Cosumnes River College	
Computer Programming/Programmer, General	17
MTI College	
Cloud Computing	17
Sacramento City College	
Computer Programming/Programmer, General	38
Sierra College	
Computer Programming/Programmer, General	32
University of California-Davis	
Computer Engineering, General	100
Computer Science	444

 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 Software Developers. 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
15-1252.00	Software Developers	1,927

Locations

Location	Active Job Ads	
Sacramento, California	499	
Folsom, California	251	
Sacramento, CA 94203	101	
Rancho Cordova, California	54	
Roseville, California	48	
Davis, California	39	
Folsom, CA 95630	36	
University of California Davis	36	
Sacramento, CA 94278	27	
Sacramento, CA 95828	21	

Employers

Employer Name	Active Job Ads	
eBay Inc.	111	
Intel Corporation	97	
Intel	67	
Deloitte	57	
Cynet Systems	44	
First American Financial Corporation	38	
Experis	35	
Davis, California	30	
Diverse Lynx	28	
University of California, Davis	28	

Hard Skills

Skill Name	Active Job Ads	
Computer Programming/Coding	839	
Java	682	
Structured Query Language (SQL)	682	
Agile	606	
JavaScript	566	
Python	541	
Git	340	
Amazon Web Services (AWS)	324	
Linux	279	
Scrum	270	

Job Titles

Job Title	Active Job Ads	
Software Engineer	82	
Senior Software Engineer	34	
Software Developer	28	
Remote Senior Software Support Engineer	27	
Software Engineer 2	21	
.Net Developer	17	
Java Developer	15	
MTS 1, Software Engineer	15	
Staff Software Engineer, Cloud Infra	15	
Media Platform Software Engineer	12	

Education Levels

Minimum Education Level	Active Job Ads	
Bachelor's degree	995	
Master's degree	83	
Associate's degree	26	
High school diploma or equivalent	17	
Doctoral or professional degree	12	
Unspecified/other	794	

Programs

Program Name	Active Job Ads	
Computer Science	747	
Computer Engineering	230	
Engineering	161	
Electrical Engineering	122	
Information Systems	65	
Software Engineering	65	
Information Technology	60	
Mathematics	55	
Technical	44	
Management Information Systems	43	

Top Skill and Certification Gaps

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

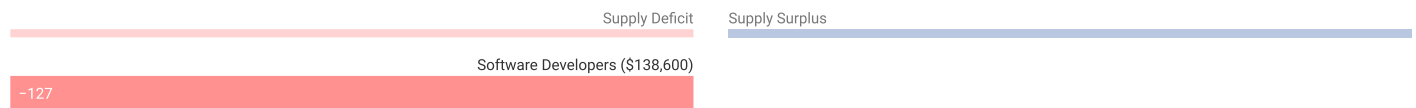
Name	Candidates	Openings	Gap
Field Programmable Gate Array (FPGA)	11	126	-115
Information Security	24	130	-106
Graphics Software	37	122	-84
Linux	179	224	-45
Perl	41	70	-30
Graphics Processing Unit (GPU)	17	46	-30
Ruby on Rails	32	61	-29
Python	250	273	-23
Personal Computers (PC)	10	31	-20
Microsoft Excel	19	36	-17

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

Name	Candidates	Openings	Gap
Cisco Certified Network Professional (CCNP)	0	1	-1
Master ACE (Advanced Certified Engineer) (Master ACE)	0	1	0
Cisco Certified Network Associate (CCNA)	1	1	0
Microsoft Certified Solution Developer (MCSO)	1	1	0
Certified Security Software Lifecycle Professional (CSSLP)	1	0	1
Project Management Professional (PMP)	1	1	1
GIAC Certified Incident Handler (GCIH)	1	0	1
GIAC Security Essentials Certification (GSEC)	1	0	1
Amazon Web Services Certification (AWS Certification)	2	0	2
Certified ScrumMaster (CSM)	2	0	2

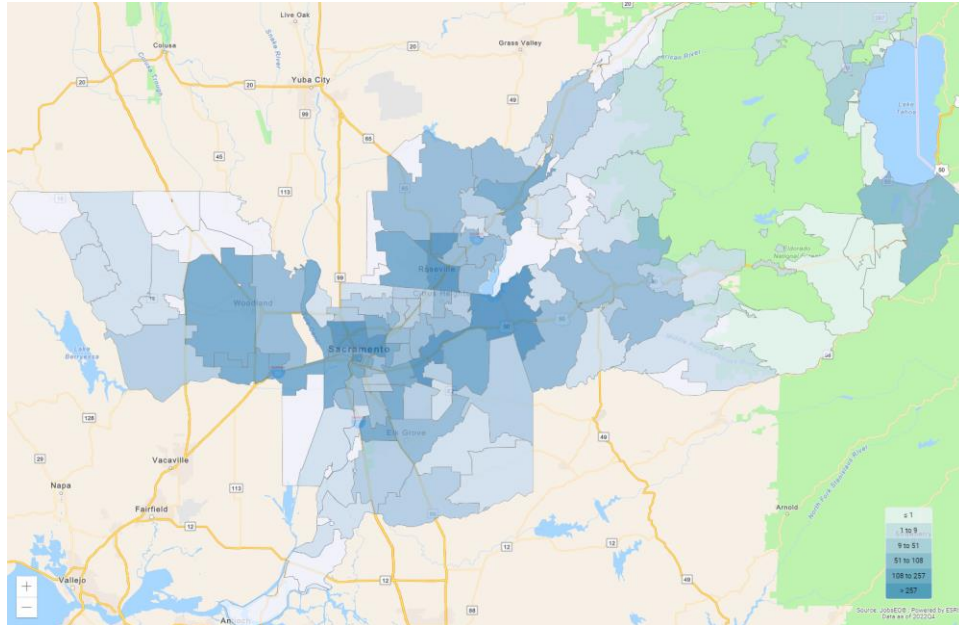
 Skill and certifications gaps can help inform employee development programs, as well as provide a comparison of the needs of regional employers to the supply.

Occupation Gaps



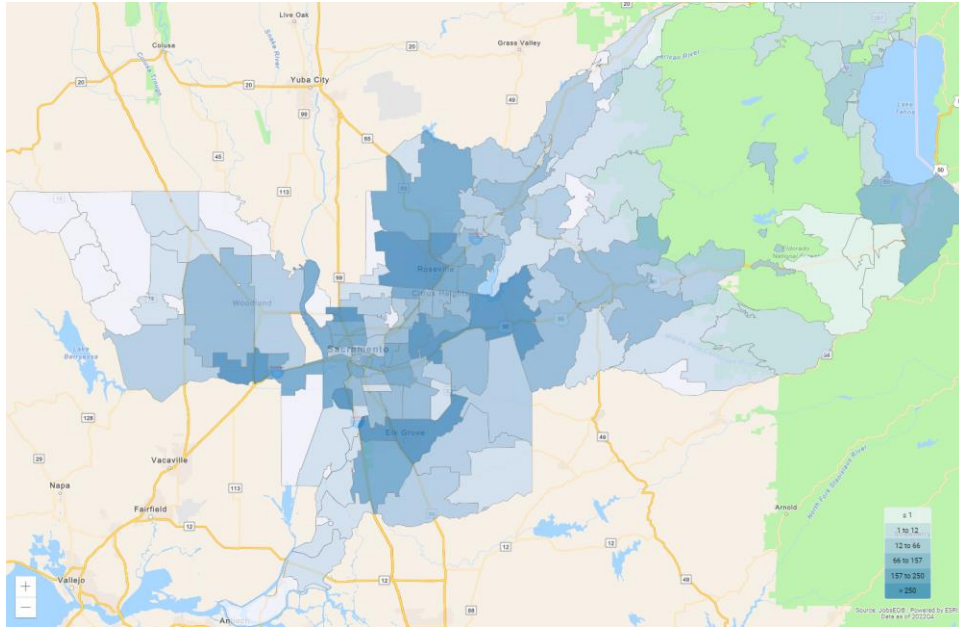
-  The above are the potential average annual gaps over 10 years. Many variables go into this analysis, but at its core it is based on a forecast comparing occupation demand growth to the local population growth and the projected educational attainment of those residents. When an area, for example, has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

Region	Employment
ZCTA 95630	1,102
ZCTA 95814	975
ZCTA 95670	709
ZCTA 95678	379
ZCTA 95661	352
ZCTA 95834	328
ZCTA 95765	324
ZCTA 95762	316
ZCTA 95827	289
ZCTA 95833	273



Top ZCTAs by Place of Residence for Software Developers, 2022Q4

Region	Employment
ZCTA 95630	698
ZCTA 95747	448
ZCTA 95616	396
ZCTA 95762	347
ZCTA 95765	310
ZCTA 95670	292
ZCTA 95758	289
ZCTA 95835	284
ZCTA 95608	272
ZCTA 95678	270

💡 “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

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.