



Occupation Report

Production Occupations

Portland-Vancouver-Hillsboro, OR-WA MSA

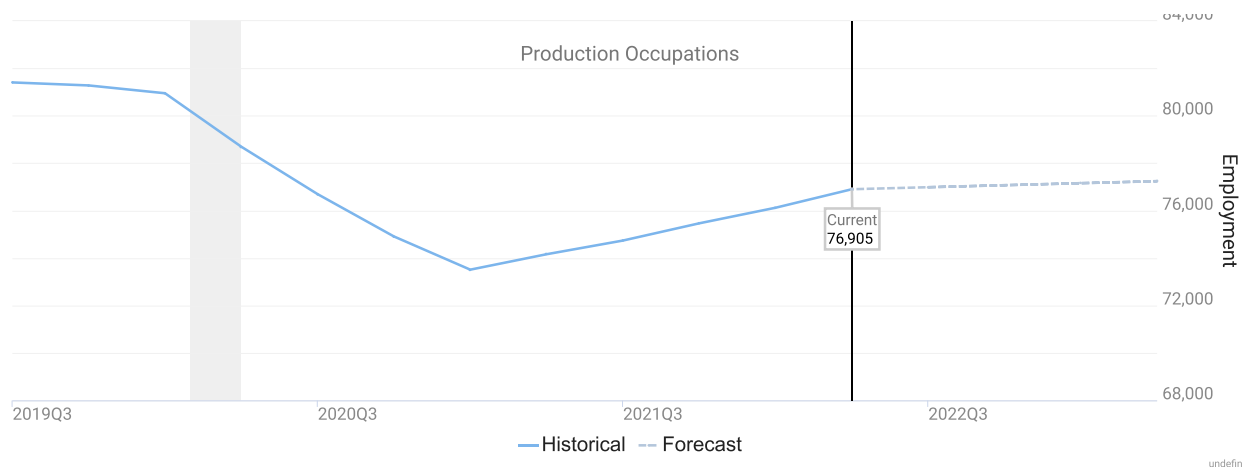


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Occupation Snapshot

6-Digit Occupation	Empl	Avg Mean Wages	LQ	3-Year Empl Change	Annual Demand	Forecast Ann Growth
Team Assemblers	9,138	\$39,600	0.98	-302	1,014	-0.5%
Inspectors, Testers, Sorters, Samplers, and Weighers	5,127	\$52,300	1.11	62	533	-0.9%
First-Line Supervisors of Production and Operating Workers	4,973	\$66,800	0.94	-226	539	0.8%
Semiconductor Processing Technicians	4,445	\$51,200	18.99	144	510	0.5%
Electrical, Electronic, and Electromechanical Equipment Assemblers, Except Coil Winders, Tapers, and Finishers	4,152	\$39,300	1.88	180	475	0.8%
Welders, Cutters, Solderers, and Brazers	3,263	\$52,200	0.94	-124	399	1.3%
Packaging and Filling Machine Operators and Tenders	3,201	\$36,900	1.07	-97	392	1.1%
Machinists	2,753	\$53,900	0.98	-242	326	1.3%
Production Workers, All Other	2,373	\$40,400	1.35	-163	294	1.1%
Bakers	2,149	\$34,600	1.28	155	325	1.4%
Remaining Component Occupations	35,327	\$44,700	1.07	-3,915	4,115	0.4%
Production Occupations	76,905	\$46,000	1.08	-4,528	8,945	0.4%





💡 “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.

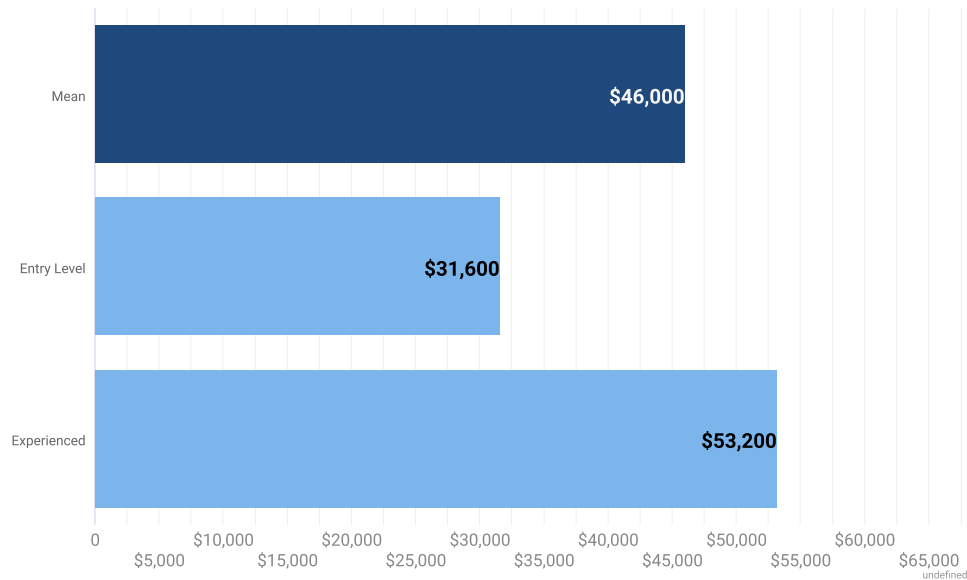
💡 “Forecast Ann Growth” is the expected change in jobs due to national, long-term trend projections (per the BLS) as well as local factors such as industry mix and population growth (as computed and modeled by Chmura).

Employment by Industry

Industry Title	% of Occ Empl	Empl	10-Year Separations	10-Year Empl Growth	10-Year Total Demand
Semiconductor and Other Electronic Component Manufacturing	15.4%	11,869	12,782	60	12,842
Employment Services	6.5%	5,037	6,140	766	6,905
Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	3.1%	2,372	2,636	269	2,904
Industrial Machinery Manufacturing	3.1%	2,357	2,612	109	2,722
Plastics Product Manufacturing	3.0%	2,320	2,454	-67	2,387
Bakeries and Tortilla Manufacturing	3.0%	2,297	2,996	291	3,287
Foundries	2.7%	2,094	2,221	23	2,244
Medical Equipment and Supplies Manufacturing	2.7%	2,045	2,432	104	2,536
Household and Institutional Furniture and Kitchen Cabinet Manufacturing	2.1%	1,626	1,746	178	1,924
Architectural and Structural Metals Manufacturing	2.0%	1,545	1,713	120	1,832
Grocery and Convenience Retailers	2.0%	1,536	1,784	-39	1,745
Printing and Related Support Activities	1.9%	1,499	1,540	-250	1,290
Other Food Manufacturing	1.9%	1,468	1,804	257	2,061
Other Miscellaneous Manufacturing	1.9%	1,466	1,664	82	1,747
Fruit and Vegetable Preserving and Specialty Food Manufacturing	1.8%	1,382	1,612	36	1,649
Cutlery and Handtool Manufacturing	1.6%	1,196	1,308	46	1,353
Converted Paper Product Manufacturing	1.4%	1,109	1,221	-63	1,158
Other General Purpose Machinery Manufacturing	1.4%	1,085	1,195	37	1,232
Other Wood Product Manufacturing	1.3%	1,037	1,149	59	1,208
Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	1.2%	896	984	36	1,019
All Others	39.9%	30,669	34,410	1,417	35,828

-  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



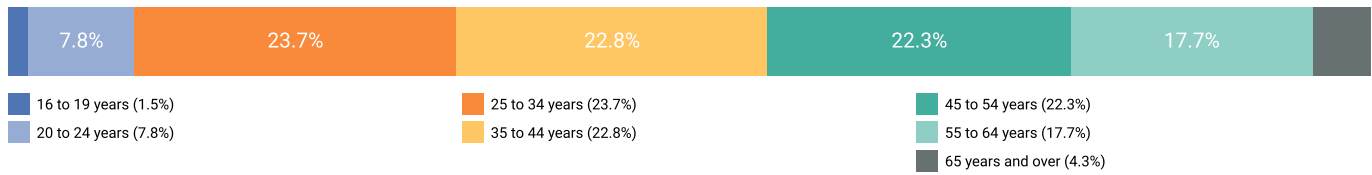
Occupation	Mean	Median	Entry Level	Experienced
Power Distributors and Dispatchers	\$129,500	\$130,300	\$110,700	\$138,900
Nuclear Power Reactor Operators	\$120,000	\$113,500	\$93,000	\$133,500
Power Plant Operators	\$99,800	\$103,400	\$64,300	\$117,600
Gas Plant Operators	\$83,100	\$83,600	\$56,000	\$96,700
Petroleum Pump System Operators, Refinery Operators, and Gaugers	\$78,800	\$79,900	\$56,600	\$89,900
Stationary Engineers and Boiler Operators	\$71,700	\$74,700	\$49,300	\$82,900
Fabric and Apparel Patternmakers	\$69,300	\$63,000	\$35,400	\$86,200
Water and Wastewater Treatment Plant and System Operators	\$69,200	\$65,400	\$53,700	\$77,000
Computer Numerically Controlled Tool Programmers	\$68,300	\$62,700	\$42,400	\$81,200
First-Line Supervisors of Production and Operating Workers	\$66,800	\$62,600	\$43,100	\$78,700

💡 Occupation wages here are based on data from the Bureau of Labor Statistics, OES program, and imputed by Chmura where necessary.

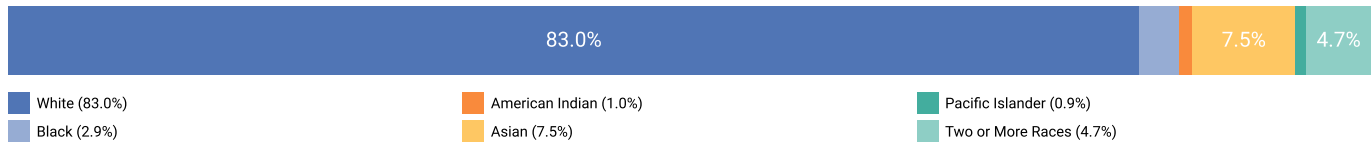
💡 When this report is run for an occupation group, the table above displays up to the top ten detailed occupations which have the highest average wages within the occupation group.

Occupation Demographics

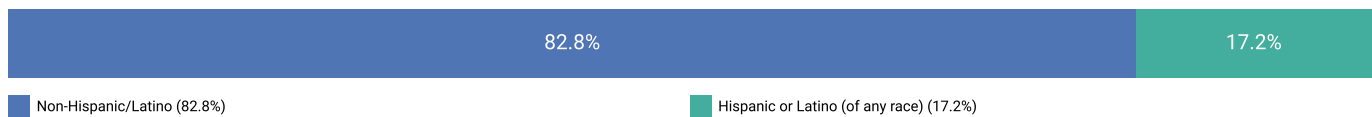
Age



Race



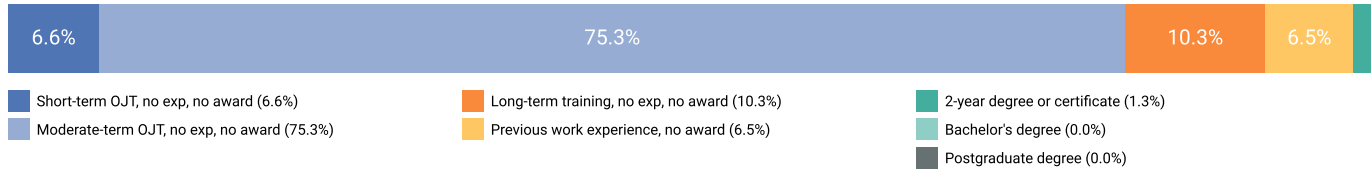
Ethnicity



Gender

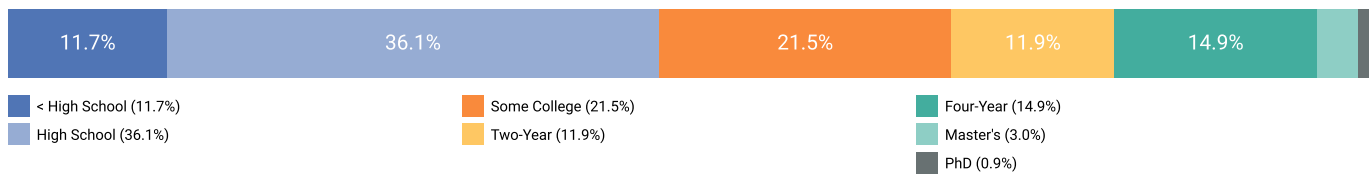


Education and Training Requirements



Education Profile

Educational Attainment




Occupation	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Team Assemblers	High school diploma or equivalent	None	Moderate-term on-the-job training
Inspectors, Testers, Sorters, Samplers, and Weighers	High school diploma or equivalent	None	Moderate-term on-the-job training
First-Line Supervisors of Production and Operating Workers	High school diploma or equivalent	Less than 5 years	None
Semiconductor Processing Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training
Electrical, Electronic, and Electromechanical Equipment Assemblers, Except Coil Winders, Tapers, and Finishers	High school diploma or equivalent	None	Moderate-term on-the-job training
Welders, Cutters, Solderers, and Brazers	High school diploma or equivalent	None	Moderate-term on-the-job training
Packaging and Filling Machine Operators and Tenders	High school diploma or equivalent	None	Moderate-term on-the-job training
Machinists	High school diploma or equivalent	None	Long-term on-the-job training
Production Workers, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training
Bakers	None	None	Long-term on-the-job training


 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 Production Occupations

Program	Awards
Charter College	
Welding Technology/Welder	54
Clackamas Community College	
Water Quality and Wastewater Treatment Management and Recycling Technology/Technician	24
Welding Technology/Welder	18
Clark College	
Baking and Pastry Arts/Baker/Pastry Chef	20
Welding Technology/Welder	26
Mt Hood Community College	
Computer Numerically Controlled (CNC) Machinist Technology/CNC Machinist	36
Machine Shop Technology/Assistant	28
Machine Tool Technology/Machinist	54
Welding Technology/Welder	20
Portland Community College	
Dental Laboratory Technology/Technician	19

 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 Portland-Vancouver-Hillsboro, OR-WA MSA, the sampling above identifies those most linked to Production Occupations. For a complete list see JobsEQ®, <http://www.chmuraecon.com/jobseq>

Top Skill and Certification Gaps

Top 10 Skill Gaps in Portland-Vancouver-Hillsboro, OR-WA MSA

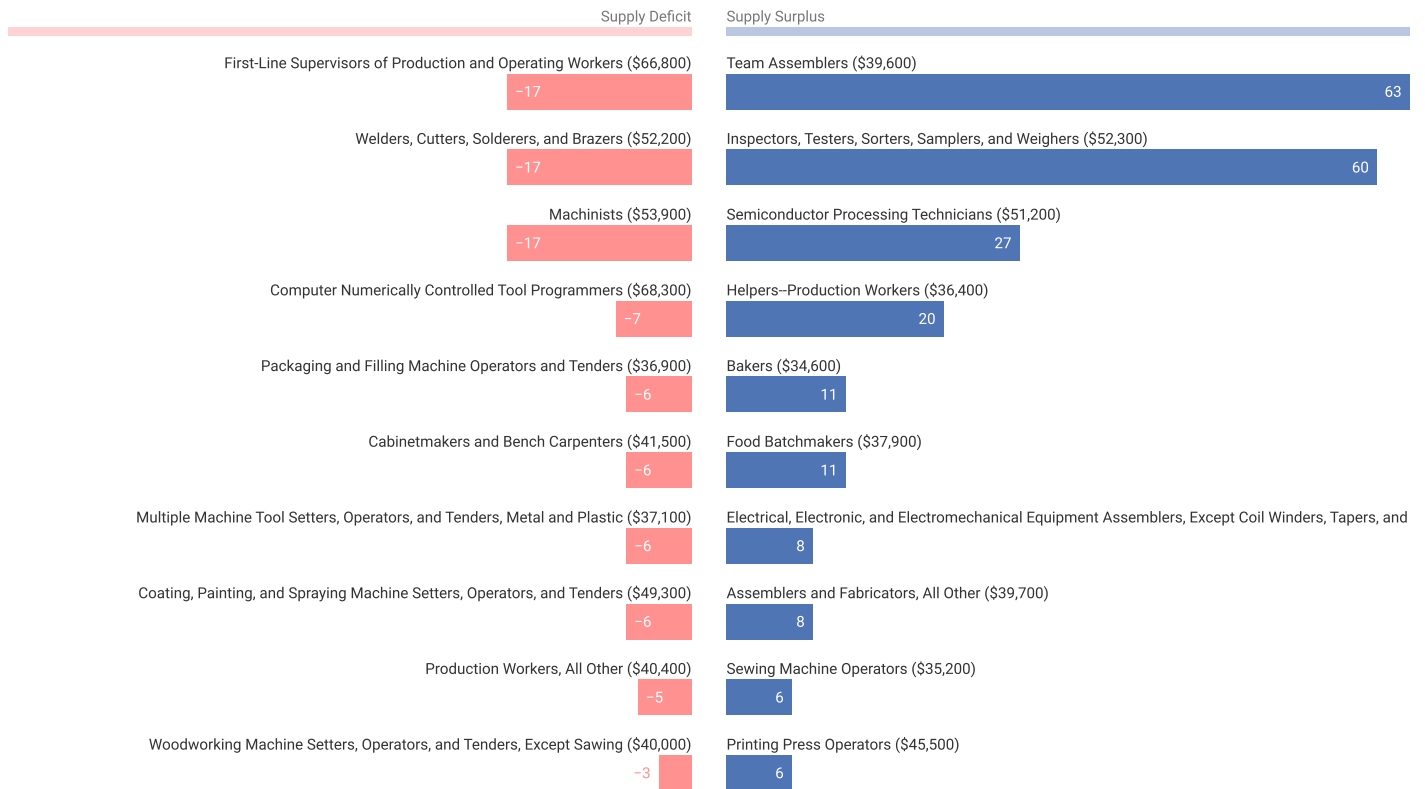
Name	Candidates	Openings	Gap
Blueprint Reading	124	234	-110
Lean Manufacturing	141	229	-88
Packaging	78	165	-87
Power Tools	163	228	-65
Gauges	232	293	-61
Micrometers	207	267	-60
Lathes	253	308	-55
Microscopes	122	170	-47
Data Entry	22	63	-41
Hand Tools	404	445	-41

Top 10 Certification Gaps in Portland-Vancouver-Hillsboro, OR-WA MSA

Name	Candidates	Openings	Gap
Certification in Cardiopulmonary Resuscitation (CPR)	2	6	-4
Forklift Certified	11	14	-4
First Aid Certification	2	5	-3
Certified Welding Inspector (CWI)	3	5	-2
Basic Life Support (BLS)	0	1	-1
Society for Protective Coatings Certification (SSPC)	0	1	-1
Certified Supply Chain Professional (CSCP)	0	1	-1
40 hour HAZWOPER	0	1	-1
Class B Commercial Driver's License (CDL-B)	1	1	-1
HAZMAT	1	2	-1

 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.

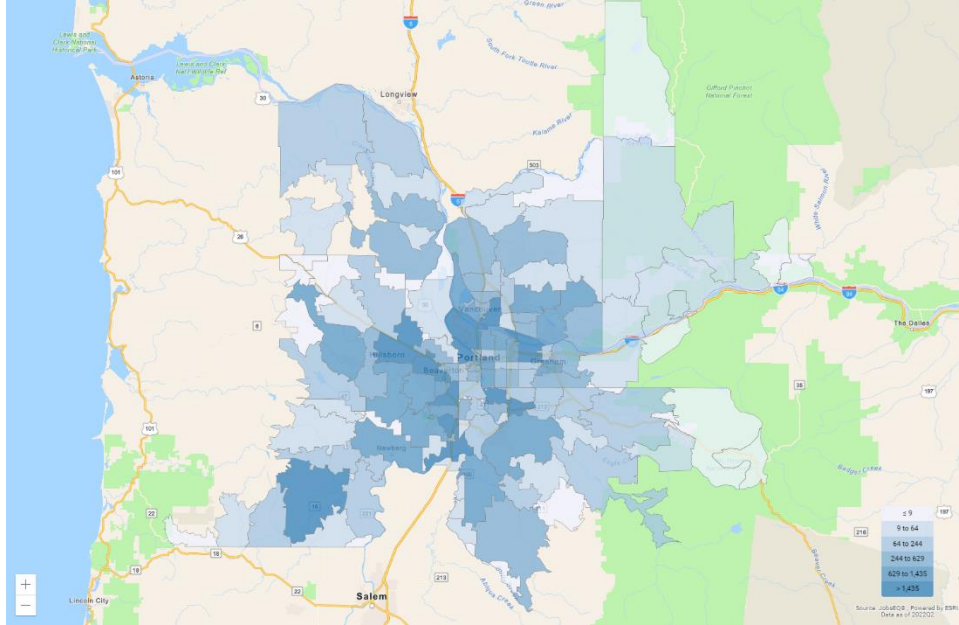
Occupation Gaps



💡 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.

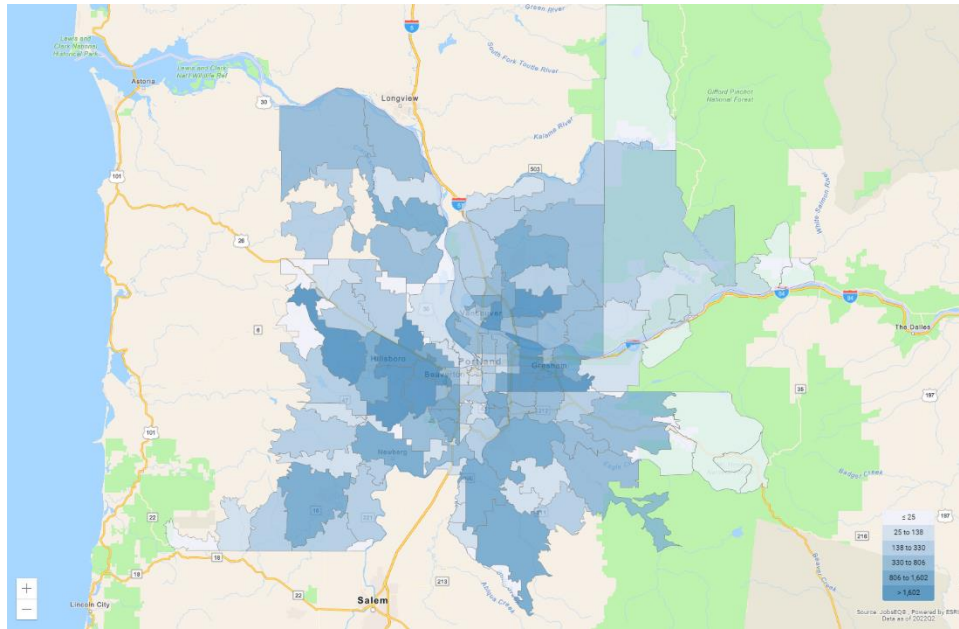
💡 The potential supply shortfall is an underlying force that the market needs to resolve one way or another, such as by employers recruiting from further distances for these occupations, wages going up to attract more candidates, and/or increased demand and wages enticing more local residents to get 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 Production Occupations, 2022Q2

Region	Employment
ZCTA 97124	10,191
ZCTA 97062 (Washington County, OR portion)	4,893
ZCTA 97230	3,197
ZCTA 97015	2,924
ZCTA 97217	2,585
ZCTA 97210 (Multnomah County, OR portion)	2,559
ZCTA 97222 (Clackamas County, OR portion)	2,520
ZCTA 97005	2,467
ZCTA 97006	1,821
ZCTA 98661	1,775

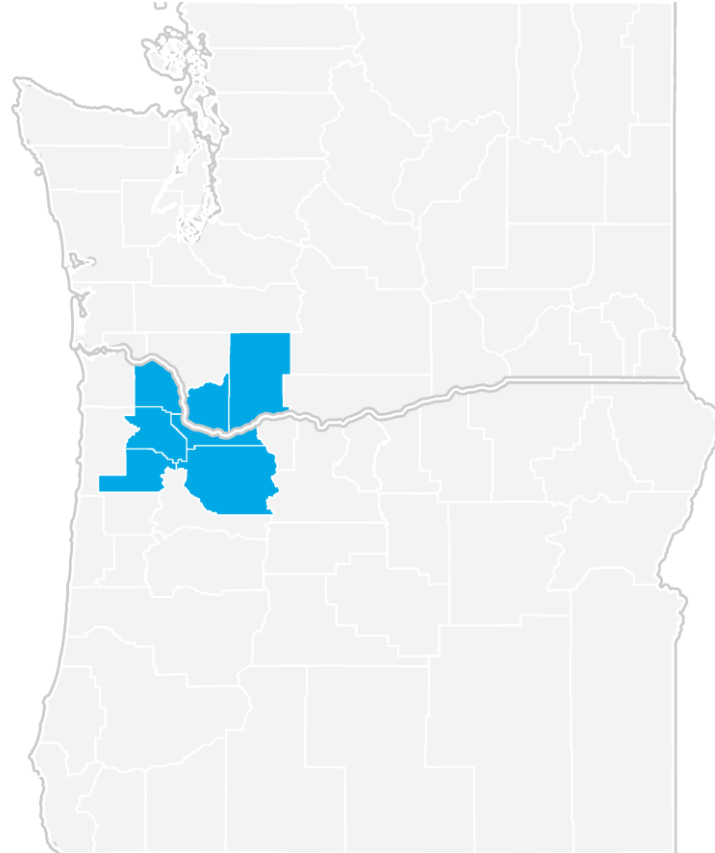


Top ZCTAs by Place of Residence for Production Occupations, 2022Q2

Region	Employment
ZCTA 97123 (Washington County, OR portion)	3,076
ZCTA 97124	2,693
ZCTA 97006	2,446
ZCTA 98661	2,363
ZCTA 98682	2,229
ZCTA 97007	2,145
ZCTA 97233	2,101
ZCTA 97266	1,916
ZCTA 97236	1,895
ZCTA 97080 (Multnomah County, OR portion)	1,799

💡 “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.

Portland-Vancouver-Hillsboro, OR-WA MSA Regional Map



Region Definition

Portland-Vancouver-Hillsboro, OR-WA MSA is defined as the following counties:

Clackamas County, Oregon

Columbia County, Oregon

Multnomah County, Oregon

Washington County, Oregon

Yamhill County, Oregon

Clark County, Washington

Skamania County, Washington

Data Notes

- Occupation employment by default indicates employment by place of work. Occupation employment is as of 2022Q2 and is based on industry employment and local staffing patterns calculated by Chmura and utilizing BLS OES data. Employment forecasts are modeled by Chmura and are consistent with BLS national-level 10-year forecasts. Occupation wages (mean, median, and percentiles) are derived from BLS OES data and are as of 2021 and represent the average for all Covered Employment. Entry-level and experienced wages are derived from these source data, computed by Chmura.
- Industry employment is as of 2022Q2 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 2022Q2 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 01/03/2023 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 2022Q2 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.

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.