

Labor Market Analysis for Program Recommendation:

Computer Numerical Control (CNC)
Machinists in Greater Sacramento

Prepared by the North Far North Center of Excellence
September 2025



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Summary

The North Far North Center of Excellence for Labor Market Research (NFN COE) prepared this report to provide an analysis of occupational demand and educational supply for computer numerical control (CNC machinist) occupations employed across the 7-county Greater Sacramento subregion. This report aims to determine if demand in the local labor market is unmet by the supply from existing community college programs and other postsecondary training providers, with a primary focus on training that leads to living wage jobs in middle-skilled occupations.¹

Key Findings

- **There is faster growth for CNC machinists in Greater Sacramento than the rest of California.** CNC machinist roles in Greater Sacramento are expected to grow at a rate of 7%, while they are projected to be stagnant across California as a whole.
- **The majority of occupations in the CNC machinist group do not surpass the living wage threshold for entry-level employment.** Machinists and CNC Tool operators comprise 86% of annual openings in the occupation group, but have entry-level wages that are respectively \$3.15 and \$1.66 below the single living wage threshold of \$23.92.
- **The median advertised salary among online job postings does exceed the living wage.** In the last 12 months, the median advertised salary among online job postings was \$29.91.
- **Most employers require at least 2 years of experience, but no postsecondary degree.** Among online job postings, 51% of employers required at least 2 years of experience, but only 4% of employers required degrees beyond a high school diploma.
- **There are more annual job openings than degrees awarded.** The supply-demand gap for Greater Sacramento is roughly 159 workers per year.

Recommendation

Based on the findings, the North Far North COE recommends that community colleges **proceed** with developing new programs and updating programs related to CNC machining. Key considerations include:

- CNC machinist occupations are growing quickly in the region.
- While most entry-level wages as of 2024 for CNC machinists do not meet the living wage threshold, the median advertised salary among online job postings does meet the threshold.
- Educational attainment of CNC machinists is in alignment with community college offerings.
- There is a significant supply-demand gap in Greater Sacramento for CNC machinists.

¹ Pursuant to California Education Code §78015, labor market information (LMI) is required for all new career education certificate and degree program proposals, and the North Far North Regional Consortium (NFNRC) requires LMI to come from the NFN COE. This report should serve to satisfy those requirements.

Introduction

The North Far North Center of Excellence (COE) was asked to provide labor market information for a newly proposed career education program at a regional community college. (See Appendix A for methodology and data sources.)

This report focuses on the following Standard Occupational Classification (SOC) occupations and codes:

- Computer Numerically Controlled Tool Operators (51-9161)
- Computer Numerically Controlled Tool Programmers (51-9162)
- Machinists (51-4041)
- Tool and Die Makers (51-4111)

A review of related programs revealed the following Taxonomy of Programs (TOP) title(s) and code(s) are appropriate for inclusion in this report:

- Machining and Machine Tools (0956.30)

The corresponding Classification of Instructional Program (CIP) title(s) and code(s) are:

- Machine Tool Technology/Machinist (48.0501)
- Machine Shop Technology/Assistant (48.0503)

Occupational Demand

Exhibit 1 summarizes the five-year projected job growth for the targeted occupational groups in the Greater Sacramento subregion, the 22-county North Far North region, and California.²

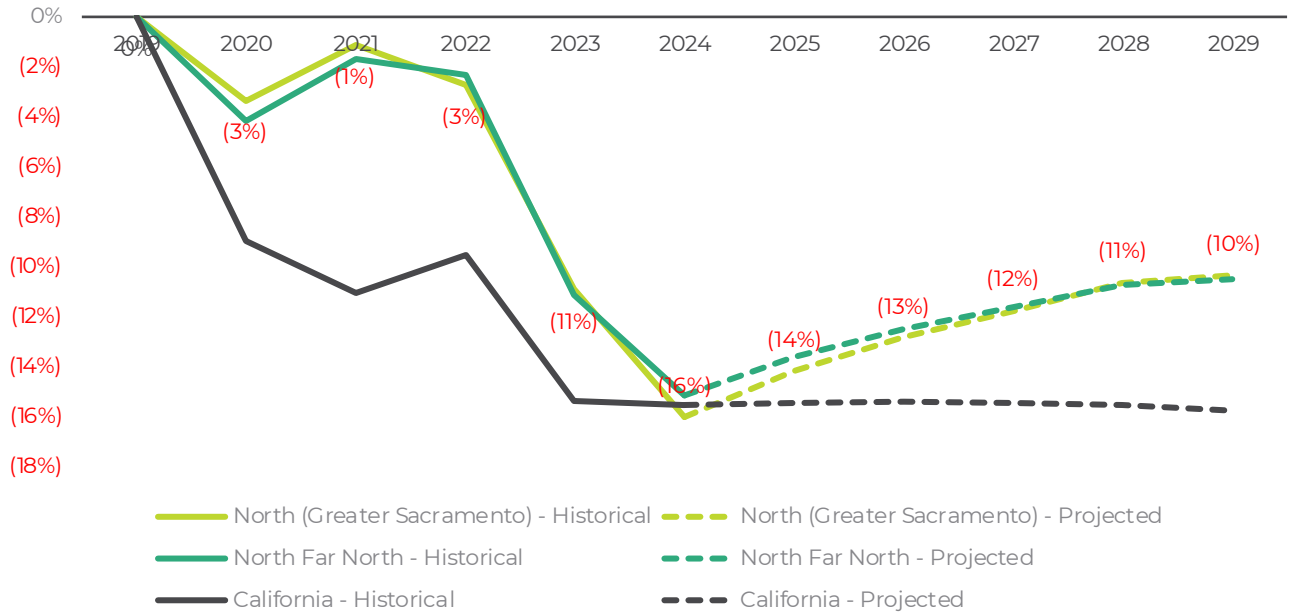
Exhibit 1. Current employment and projected occupational demand, 2024-2029

Occupational Group	2024 Jobs	2024-2029 Change	2024-2029 % Change	2024-2029 Annual Openings
Machinists	795	66	8%	97
Tool and Die Makers	133	5	4%	15
Computer Numerically Controlled Tool Operators	517	19	4%	54
Computer Numerically Controlled Tool Programmers	65	12	18%	9
Greater Sacramento	1,510	102	7%	175
Machinists	1,041	69	7%	125
Tool and Die Makers	150	7	5%	17
Computer Numerically Controlled Tool Operators	642	18	3%	67
Computer Numerically Controlled Tool Programmers	82	11	13%	10
North Far North	1,915	105	5%	219
Machinists	22,893	447	2%	2,417
Tool and Die Makers	1,774	59	3%	201
Computer Numerically Controlled Tool Operators	18,739	(792)	(4%)	1,755
Computer Numerically Controlled Tool Programmers	2,714	164	6%	295
California	46,120	(122)	(0%)	4,668

² The 22-county North Far North is a dual region. It is represented by the North (Greater Sacramento) subregion that covers seven counties, including El Dorado, Nevada, Placer, Sacramento, Sutter, Yolo, and Yuba, and the 15-county Far North subregion which includes Butte, Colusa, Del Norte, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Plumas, Shasta, Sierra, Siskiyou, Tehama, and Trinity.

Exhibit 2 compares historical and projected annual change in employment for the period 2019 to 2029, with the base number of jobs in 2019 for the selected subregion and in the 22-county North Far North region and California.

Exhibit 2. Changes in employment, 2019-2029

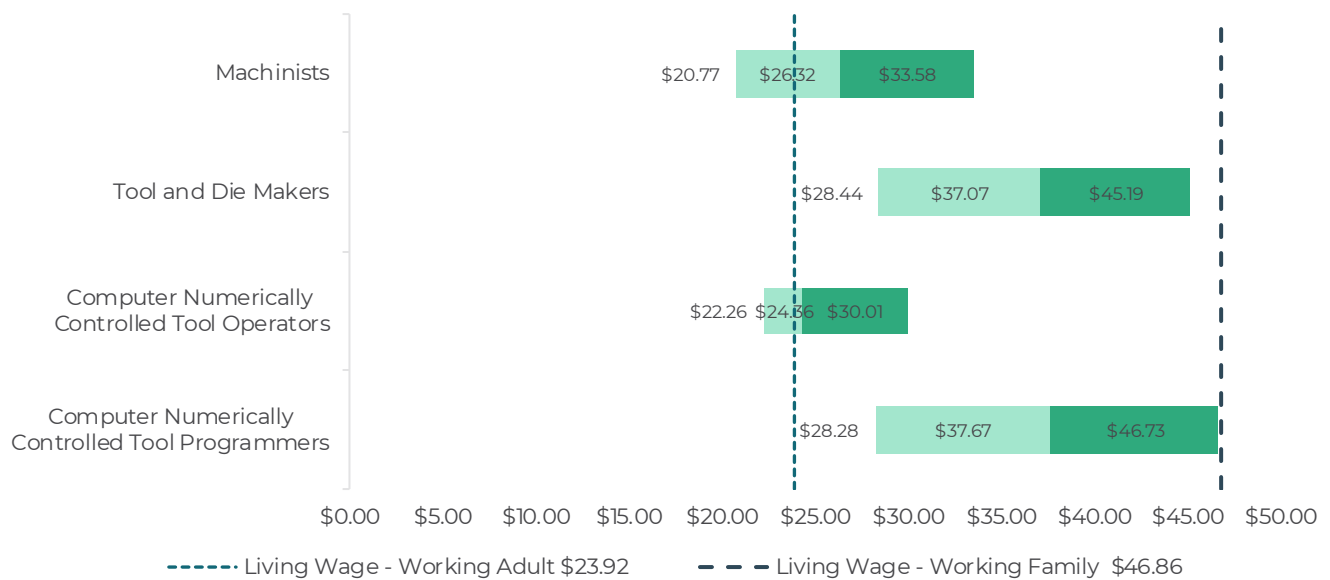


Earnings

Exhibit 3 compares the percentile hourly earnings for the selected occupations to the living wage for a single working adult and a working family residing in the county of the community college district that requested this report.^{3,4} Earnings data include wages from employed and self-employed workers. Also, it's important to note that living wage thresholds vary by county, and in the Greater Sacramento subregion, they range from \$17 to \$24 per hour for a single working adult.

Exhibit 3. Hourly earnings compared to the community college district's living wage

Requesting College	Living Wage – Working Adult	Living Wage – Working Family
Sierra College	\$23.92	\$46.86



³ A “living wage” is defined as the level of income one working adult with no children must earn to meet basic needs, including food, housing, transportation, healthcare, taxes, and other miscellaneous basic needs. Please note that the 25th -percentile and 75th-percentile hourly wages are used as proxies for entry-level and experienced-level wages.

⁴ A “working family” is defined as one working adult and one infant (between the ages of 0 and 2 years).

Job Postings

Analysis of online job postings can offer additional insights into recent labor market changes not reflected in historical trends. However, it is important to note that job postings do not equate to actual labor market demand, which is based on projected annual job openings.

There are several limitations to interpreting online job postings. Employers may repost the same position multiple times to attract more applicants, or job postings may remain active even if the position is no longer being filled. Additionally, a single job posting can be used to hire for multiple openings, and not all job opportunities are advertised online. Despite these limitations, job posting analyses can be valuable for guiding community college curriculum development and identifying potential employers for targeted experiential learning opportunities.

The North Far North COE identified 236 online job postings for the selected occupations across the Greater Sacramento subregion. Job posting data comes from and represents unique advertisements posted online during the last 12 months, from September 2024 to August 2025.

Exhibit 4. Job postings by occupation

Occupation	Number of Job Postings	Share of Postings	Median Advertised Salary
Machinists	140	59.32%	\$33.11
Tool and Die Makers	12	5.08%	\$31.88
Computer and Numerically Controlled Tool Operators	57	24.15%	\$25.48
Computer Numerically Controlled Tool Programmers	27	11.44%	\$33.60
Total	236	100%	\$29.91

Top employers

Exhibit 5 shows the employers with the most job postings for the selected occupations across the studied subregion.

Exhibit 5. Employers with the most job postings

Employer	Number of Job Postings
Crane	15
Kratos Defense & Security Solutions	10
Snowline Engineering	7
Balanced Body	7
Teledyne Technologies/ Teledyne FLIR Defense	7
Harris & Bruno International	6

Employer	Number of Job Postings
Siemens	6
Petersen Precision Engineering	5

Top titles

Exhibit 6 shows the job titles with the most job postings for the selected occupations across the studied subregion.

Exhibit 6. Job titles with the most job postings

Job title	Number of Job Postings
CNC Machinists	61
Machinists	19
CNC Operators	15
CNC Machine Operators	12
Lead CNC Machinists	9
CNC Programmers	9
CNC Mill Machinists	7
CNC Set Up Operators	6
CNC Machinists and Programmers	5
Tool and Die Makers	5

Skills and qualifications

Exhibit 7 shows the most requested skills in job postings by occupation in the studied subregion.⁵

Exhibit 7. Most requested in-demand skills in job postings

Specialized Skills	Common or Employability Skills	Software and Technology Skills
<ul style="list-style-type: none"> • Computer Numerical Control (CNC) • Mills • Tooling • Lathes 	<ul style="list-style-type: none"> • Operations • Mathematics • Detail-Oriented • Troubleshooting (Problem Solving) 	<ul style="list-style-type: none"> • G-Codes • Mastercam • Fusion 360 (CAD) • SolidWorks (CAD) • Spreadsheets

⁵ Specialized skills are those primarily required to perform specific tasks in an occupation. Common skills are typically related to employability; these are skills that are prevalent across many occupations and usually include a mix of interpersonal attributes and soft skills. Software skills are specific to any software tool or programming component used to accomplish tasks in a job.

<ul style="list-style-type: none"> • Micrometer • Calipers • Blueprinting • Process Improvement • Sawing • Grinding Machine 	<ul style="list-style-type: none"> • Communication • Lifting Ability • Strong Work Ethic • Writing • Management • Coordinating 	<ul style="list-style-type: none"> • Microsoft Office • GibbsCAM • Calendaring Software • Vericut • Autodesk
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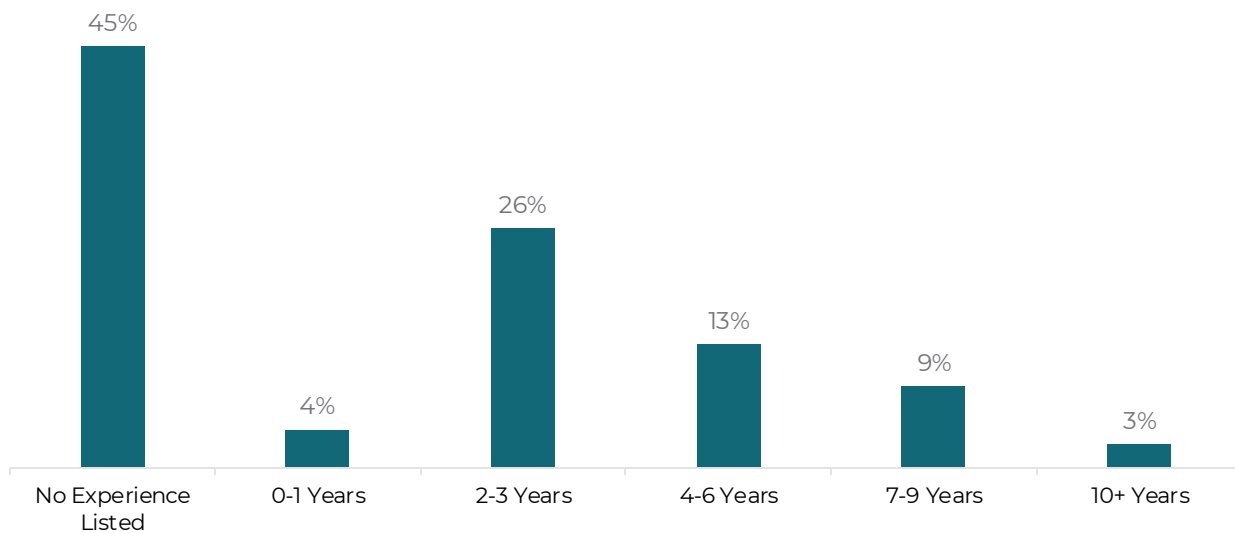
Exhibit 8 shows the employer-preferred minimum level of education in job postings related to the selected occupations in the subregion.

Exhibit 8. Employer-preferred education levels for the studied occupations



Exhibit 9 shows the employer-preferred minimum level of experience in job postings related to the selected occupations in the subregion.

Exhibit 9. Employer-preferred experience levels for the studied occupations



Education and Training Requirements

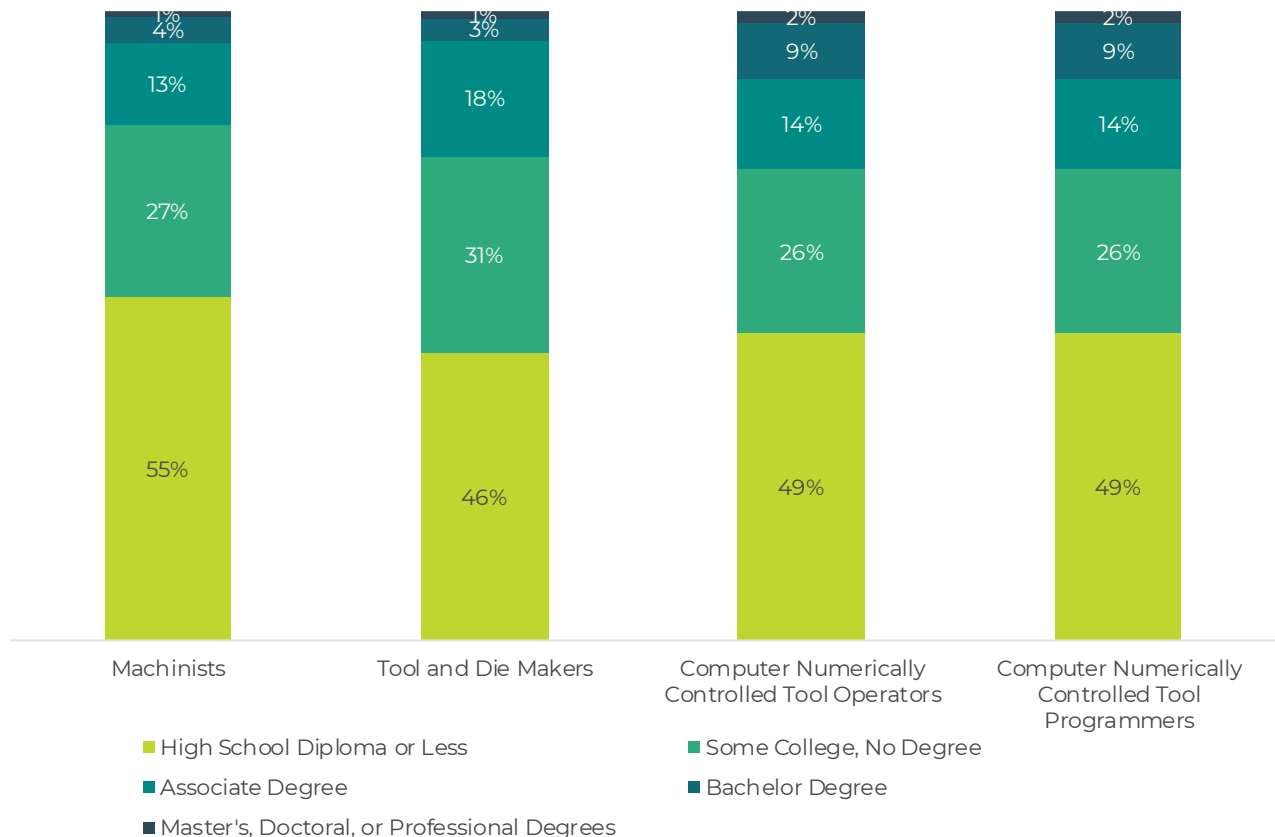
The U.S. Bureau of Labor Statistics (BLS) assigns each occupation a typical entry-level education, related work experience, and on-the-job training category in its projection data. Exhibit 10 summarizes these requirements by occupation.

Exhibit 10. Typical entry-level job requirements for the studied occupations

Occupation	Entry-Level Education	Work Experience	On-The-Job Training
Machinists	High school diploma or equivalent	None	Long-term on-the-job training
Tool and Die Makers	Postsecondary nondegree award	None	Long-term on-the-job training
Computer Numerically Controlled Tool Operators	High school diploma or equivalent	None	Moderate-term on-the-job training
Computer Numerically Controlled Tool Programmers	Postsecondary nondegree award	None	Moderate-term on-the-job training

The U.S. Census Bureau tracks the highest education level attained by workers in all occupations. Exhibit 11 presents this data for the current U.S. workforce in the studied occupations.

Exhibit 11. Educational attainment for workers 25 years and older by occupation, 2021-22



Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of awards issued in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes.

Community college supply

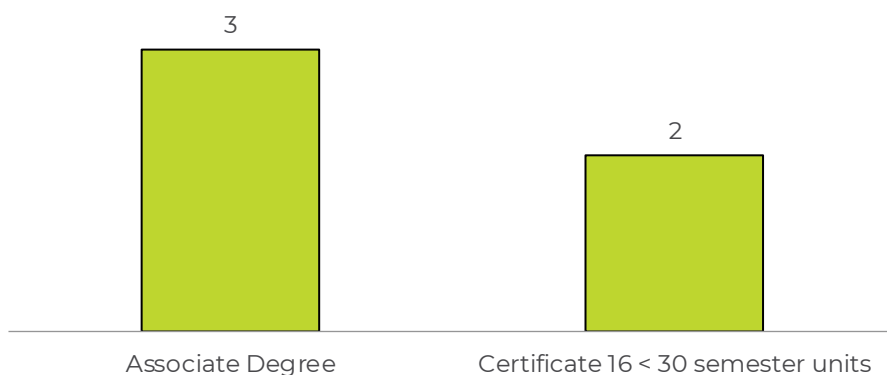
Exhibits 12 and 13 summarize the three-year average of awards (certificates and degrees) conferred by the subregion's community college programs relevant to the occupations studied.

Exhibit 12. Average annual community college awards by TOP program

TOP Program and Code	College	2021-22 Annual Awards	2022-23 Annual Awards	2023-24 Annual Awards	Three-Year Average Awards
Machining and Machine Tools (0956.30)	Sierra	7	3	3	4
Totals		7	3	3	4

Note: Values in the table are rounded to the nearest whole number. However, subtotals and totals are calculated using unrounded values.

Exhibit 13. Average annual community college awards by award type and program area



Other Postsecondary Supply

Exhibits 14 summarize the three-year average of awards conferred by postsecondary institutions outside of the community college system and located in the subregion.

Exhibit 14. Average annual other postsecondary awards by award type and program area

CIP Program and Code	Institution	Award Level	2020-2023 Average Annual Awards
Machine Shop Technology/Assistant (48.0503)	Charles A Jones Career and Education Center	Certificate of less than 1 year	12
Total			12

Conclusion and Recommendations

Data insights

Demand— CNC machinist roles are expected to grow at a rate of 7% in Greater Sacramento and 5% in the North Far North region, while they are projected to decrease by 0.26% across California as a whole.

Living Wage—Only 14% of annual job openings in CNC machining offer entry-level hourly wages that meet or exceed the living wage of \$23.92 for a single working adult in Sierra College’s community college district.

Education—All four CNC machining occupations have educational training requirements that align with community college programs. Typical entry-level education for these occupations is either a high school diploma or a postsecondary nondegree award.

Supply Gap—Among the occupations included in this report, there are 174 projected annual job openings and an average of 16 awards conferred by postsecondary training institutions across Greater Sacramento.

Recommendation

Based on the current analysis, the North Far North COE recommends that community colleges **proceed** with developing new programs and updating ones related to CNC machining to better align with the workforce needs of the subregion.

New Program Recommendation		
Proceed	Use Caution	Do Not Proceed
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Support for Program Modification	
Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>

Appendix A. Methodology and Data Sources

Labor market and educational supply data compiled in this report derive from a variety of sources. Occupations were identified by using the Center of Excellence TOP-to-CIP-to-SOC Crosswalk: <http://coecc.net/>. This report's findings were primarily determined with labor market and educational supply data from the Bureau of Labor Statistics (BLS), the economic modeling firm and job postings aggregator Lightcast, and the California Community Colleges Chancellor's Office.

Data Sources

The following table summarizes the data sources used in this study.

Data Type	Source
Labor Market Information and Job Postings	Traditional labor market information data is sourced from Lightcast, a labor market analytics firm. Lightcast's occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and non-QCEW employee classes of worker) and the American Community Survey (self-employed and extended proprietors). For more information, see https://lightcast.io/ .
Living Wage	The living wage is derived from the Insight Center's California Family Needs Calculator, which measures the income necessary for an individual or family to afford basic expenses. The data assesses the cost of housing, food, childcare, health care, transportation, and taxes. The Chancellor's Office uses wage data to calculate the percentage of students who attained a regional living wage. For more information, visit https://selfsufficiencystandard.org/California/ .
Typical Education Level, On-the-job Training, and Educational Attainment	The Bureau of Labor Statistics (BLS) provides information about education and training requirements for hundreds of occupations. BLS uses a system to assign categories for entry-level education, work experience in a related occupation, and typical on-the-job training to each occupation for which BLS publishes projections data. For more information, visit https://www.bls.gov/emp/documentation/education/tech.htm .
Emerging Occupation Descriptions, Additional Education Requirements, and Employer Preferences	The O*NET database includes information on skills, abilities, knowledge areas, work activities, and interests associated with occupations. For more information, visit https://www.onetonline.org/help/online/ .
Labor Force, Employment and Unemployment Estimates	The California Employment Development Department's Labor Market Information Division is a source of labor market and workforce data. For more information, visit labormarketinfo.edd.ca.gov .
Educational Supply	<p>The CCCCO Management Information Systems (MIS) Data Mart provides information about students, courses, student services, outcomes, and faculty and staff. For more information, visit https://datamart.cccco.edu.</p> <p>The Chancellor's Office Curriculum Inventory System (COCI) collects data on courses and programs offered by the California Community Colleges. For more information, visit https://coci2.ccctechcenter.org/.</p> <p>The National Center for Education Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS) collects data from providers of postsecondary education, including the number of postsecondary awards earned (completions). For more information, visit https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions.</p>

Living Wage

Beginning in October 2024, to determine if an occupation meets the living wage threshold, the NFN COE compared the 25th percentile hourly wage of an occupation in the subregion to the living wage for a single adult (no dependents) living in the county where the requesting community college district was located.

This change aligned with the Chancellor's Office methodology for calculating the share of students earning a living wage after leaving the California Community College system, as reported in the Data Vista living wage metric (802S). For details, see the *DataVista Metric Definition Dictionary*.

The NFN COE updated this practice as needed to remain consistent with the Chancellor's Office. The table below summarizes hourly living wages by community college district and county.

2024 Single Adult Living Wage			
Community College District	County	Hourly	Annual
Butte-Glenn	Butte	\$16.77	\$35,416
Feather River	Plumas	\$15.11	\$31,909
Lake Tahoe	El Dorado	\$22.11	\$46,703
Lassen	Lassen	\$14.81	\$31,274
Los Rios	Sacramento	\$21.17	\$44,709
Mendocino-Lake	Mendocino	\$17.06	\$36,039
Redwoods	Humboldt	\$16.59	\$35,046
Shasta-Tehama-Trinity Joint	Shasta	\$16.99	\$35,874
Sierra Joint	Placer	\$23.92	\$50,519
Siskiyou Joint	Siskiyou	\$14.51	\$30,639
Yuba	Sutter	\$17.08	\$36,074
California Minimum Wages			
All industries, except fast food and healthcare (Effective January 2025)		\$16.00	\$33,280
Fast food (Effective April 2024)		\$20.00	\$41,600
Healthcare (Effective October 2024)		\$18.00-\$23.00, depending on facility type	\$37,440-\$47,840

Sources: University of Washington Self Sufficiency Standard and State of California Department of Industrial Relations, "Minimum Wage," https://www.dir.ca.gov/dlse/minimum_wage.htm

For more information, contact:

The North Far North Center of
Excellence for Labor Market Research

Anna Hoehenrieder, Research Analyst
anna.hoehenrieder@losrios.edu

Ebony J. Benzing, Co-Director
ebony.benzing@losrios.edu



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