

Labor Market Analysis for Program Review:

Firefighting and Emergency Response Occupations in the Far North

Prepared by the North Far North Center of Excellence
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NORTH FAR NORTH

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 selected occupations employed across the 22-county North Far North region. 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

- **Demand:** The Far North subregion held 1,754 firefighting and emergency response jobs in 2024. Between 2024 and 2029, firefighting and emergency response jobs are projected to show moderate demand, with 157 annual openings across the Far North subregion. Demand is strongest for firefighters, with 111 projected annual openings.
- **Living Wage:** Three occupations met the living wage criteria, and data was unavailable for forest fire inspectors and prevention specialists. Wage data shows that firefighting and emergency response occupations earn \$5 to \$21 above the single adult living wage of \$14.51 per hour, suggesting economic stability for workers. Although wage data was unavailable for forest fire inspectors and prevention specialists in the Far North, median hourly wages in job postings met the living wage.
- **Education:** Three firefighting and emergency response occupations require a postsecondary nondegree award for entry and no work experience, except fire inspectors and investigators which require five years or more of work experience. Forest fire inspectors and prevention specialists require a high school diploma or equivalent. However, 47% to 59% of incumbent workers in these occupations have educational attainment levels consistent with community college offerings (some college or associate degrees).
- **Supply Gap:** Six Far North community colleges offer degrees and certificates in programs related to firefighting and emergency response occupations. Together, these programs conferred an average of 80 awards (certificates and associate degrees) in community college programs over the last three academic years (2022-23 through 2024-25). No awards were conferred in CIP programs. A comparison of occupational demand (157 annual openings) and educational supply (80 awards) suggests there is a supply gap across the Far North.

Recommendation

Based on the findings, the North Far North COE recommends that community colleges **proceed with developing a new program and supports colleges modifying existing programs**. Key considerations include:

- Projected demand over the next five years is moderate, with 157 annual job openings in the Far North subregion. Current program completions do not currently meet this demand (80

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.

awards), which signals a supply gap. Additionally, all occupations with available data met the living wage criteria.

Introduction

The North Far North Center of Excellence (COE) was asked to provide labor market data to support a proposed new career education program or modifications to existing programs 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:

- Emergency Medical Technicians (29-2042)
- Firefighters (33-2011)
- Fire Inspectors and Investigators (33-2021)
- Forest Fire Inspectors and Prevention Specialists (33-2022)

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

- Emergency Medical Services (1250.00)
- Fire Technology (2133.00)

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

- Fire Prevention and Safety Technology/Technician (43.0201)
- Fire Science/Fire-fighting (43.0203)
- Wildland/Forest Firefighting and Investigation (43.0206)
- Emergency Medical Technology/Technician (EMT Paramedic) (51.0904)

Occupational Demand

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

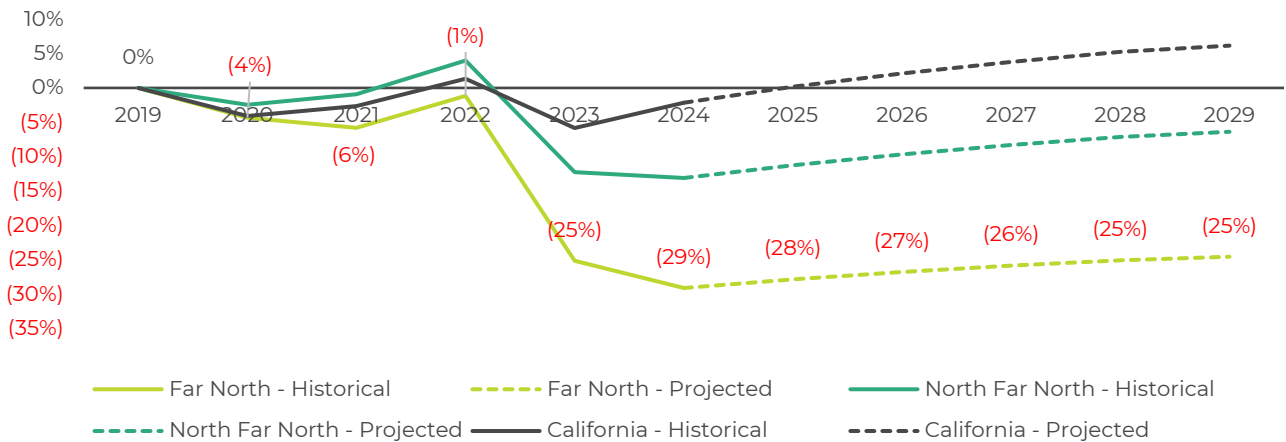
Exhibit 1. Current employment and projected occupational demand, 2024-2029

Occupational Group	2024 Jobs	2024-2029 Change	2024-2029 % Change	2024-2029 Annual Openings
Emergency Medical Technicians	480	31	6%	45
Firefighters	1,253	81	6%	111
Fire Inspectors and Investigators	21	1	4%	2
Forest Fire Inspectors and Prevention Specialists	0	0	0	0
Far North	1,754	113	6%	157
Emergency Medical Technicians	1,768	119	7%	163
Firefighters	3,795	306	8%	349
Fire Inspectors and Investigators	101	9	9%	10
Forest Fire Inspectors and Prevention Specialists	35	6	19%	4
North Far North	5,698	441	8%	527
Emergency Medical Technicians	19,365	1,868	10%	1,900
Firefighters	29,037	2,255	8%	2,653
Fire Inspectors and Investigators	1,315	95	7%	128
Forest Fire Inspectors and Prevention Specialists	319	31	10%	33
California	50,037	4,248	8%	4,714

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 Far North subregion, the 22-county North Far North region, and California.

Exhibit 2. Changes in employment, 2019-2029

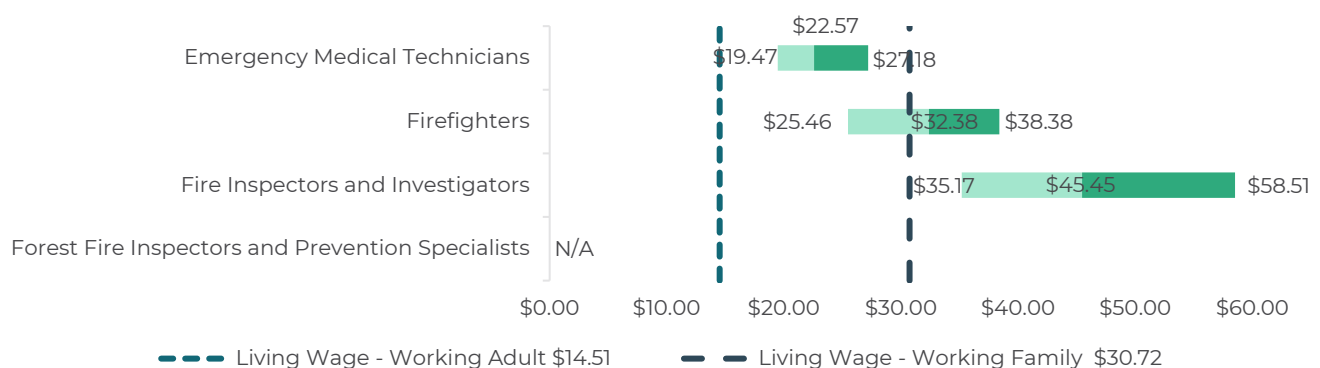


Earnings

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 includes wages from employed and self-employed workers. Also, it's important to note that living wage thresholds vary by county, and in the Far North subregion, range from \$14 to \$17 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
College of the Siskiyous	\$14.51	\$30.72



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 108 online job postings for the selected occupations across the Far North subregion. Job posting data comes from and represents unique advertisements posted online during the last 12 months, from November 2024 to October 2025.

Exhibit 4. Job postings by occupation

Occupation	Number of Job Postings	Share of Postings	Median Advertised Salary
Forest Fire Inspectors and Prevention Specialists	46	43%	\$34.34
Emergency Medical Technicians	44	41%	\$27.32
Firefighters	16	15%	Insufficient data
Fire Inspectors and Investigators	2	2%	Insufficient data
Total	108	100%	\$32.62

Top employers

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

Exhibit 5. Employers with the most job postings

Employer	Number of Job Postings
United States Department of the Interior	17
United States Forest Service	10
CommonSpirit Health	9
Lincare	6
Prime Healthcare Services	4
National Park Service	4

Employer	Number of Job Postings
State of California	4
Global Medical Response	4
United States Department of Agriculture	3
Thompson Land Management	3

Top titles

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

Exhibit 6. Job titles with the most job postings

Job title	Number of Job Postings
Wildland Firefighters	44
Emergency Medical Technicians	22
Emergency Medical Technicians - Basic	7
Firefighters	6
Medical Equipment Delivery Drivers	6
Healthcare Managers	2
Heavy Equipment Operators	2
Fire Prevention Specialists	2
Forestry Workers	1
Training Center Managers	1

Skills and qualifications

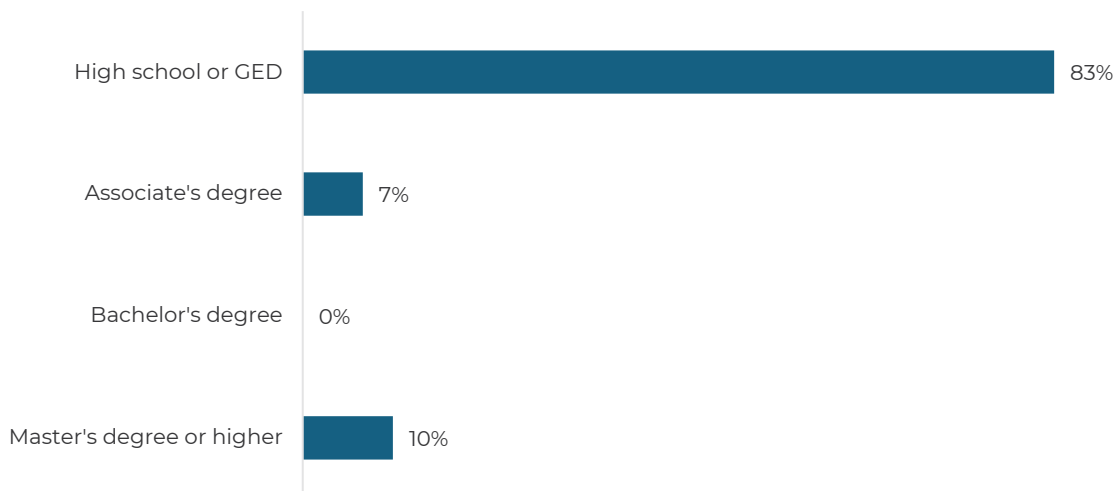
Exhibit 7 shows the most requested skills in job postings by occupation in the Far North subregion.⁵

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"> Wildfire Suppression Fire Management Fire Suppression Systems Emergency Medical Services Firefighting Ambulances Fire Prevention Fire Behavior Incident Command Systems Personal Protective Equipment 	<ul style="list-style-type: none"> Management Operations Communication Physical Fitness Preparedness Program Management Planning Accountability Leadership Confidentiality 	<ul style="list-style-type: none"> Microsoft Office

Exhibit 8 shows the employer-preferred minimum level of education in job postings related to the selected occupations in the Far North.

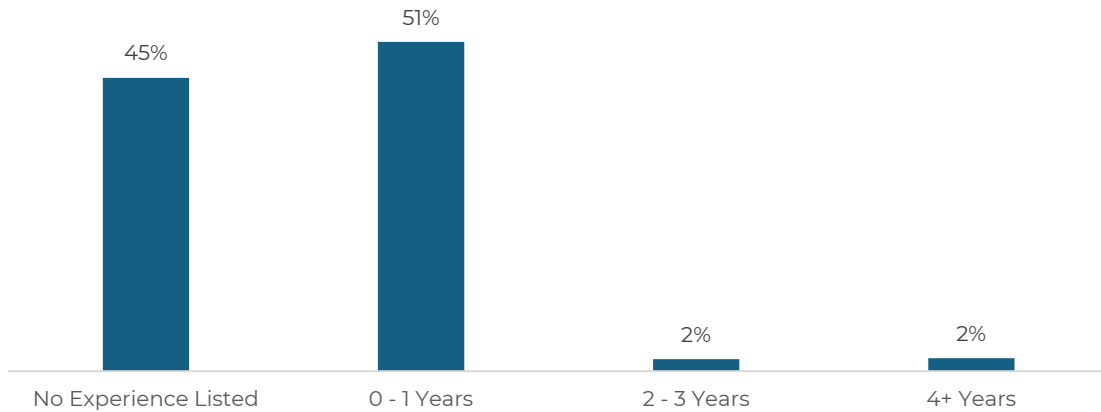
Exhibit 8. Employer-preferred education levels for the studied occupations



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.

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

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



Education and Training Requirements

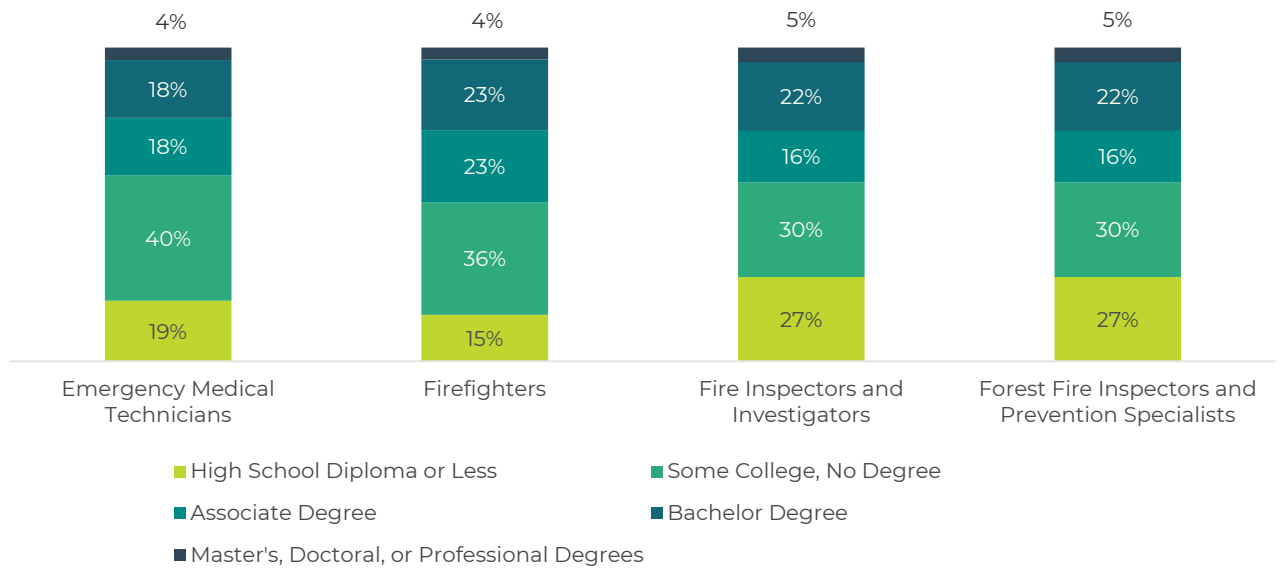
The U.S. Bureau of Labor Statistics (BLS) assigns each occupation a typical entry-level education, related work experience, and on-the-job training category in its projection data. Exhibit 10 summarizes these requirements by occupation.

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

Occupation	Entry-Level Education	Work Experience	On-The-Job Training
Emergency Medical Technicians	Postsecondary nondegree award	None	None
Firefighters	Postsecondary nondegree award	None	Long-term on-the-job training
Fire Inspectors and Investigators	Postsecondary nondegree award	5 years or more	Moderate-term on-the-job training
Forest Fire Inspectors and Prevention Specialists	High school diploma or equivalent	Less than 5 years	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 Far North community college programs relevant to the occupations studied.

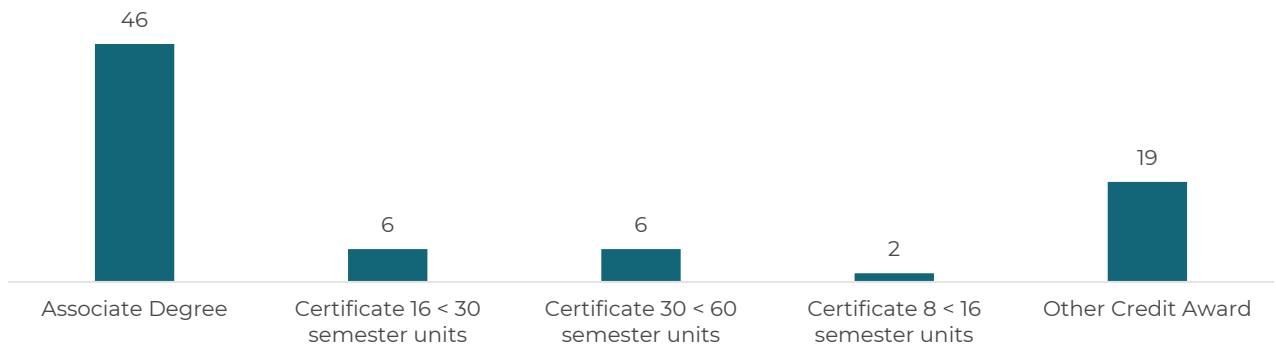
Exhibit 12. Average annual community college awards by TOP program

TOP Program and Code	College	2022-23 Annual Awards	2023-24 Annual Awards	2024-25 Annual Awards	Three-Year Average Awards
Emergency Medical Services (1250.00)	Butte	58	0	0	19
	Shasta	2	4	8	5
Subtotal		60	4	8	24
Fire Technology (2133.00)	Butte	30	23	22	25
	Lassen	--	--	5	5
	Mendocino	13	14	24	17
	Shasta	0	3	4	2

TOP Program and Code	College	2022-23 Annual Awards	2023-24 Annual Awards	2024-25 Annual Awards	Three-Year Average Awards
	Siskiyou	1	3	2	2
Subtotal		49	53	65	56
Totals		109	57	73	80

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



Other postsecondary supply

No awards were conferred in CIP programs related to firefighting and emergency response.

Conclusion and Recommendations

Data insights

Demand— Employment demand for firefighting and emergency response occupations in the Far North subregion is high. The Far North subregion held 1,754 firefighting and emergency response jobs in 2024. These jobs are projected to increase by 6% over the next five years, adding 113 new jobs to the subregion by 2029. Jobs for firefighting and emergency response are projected to grow slower in the Far North subregion than in California. Over the next five years, firefighting and emergency response jobs are projected to have 157 annual openings across the Far North.

Living Wage— Wage data shows that firefighting and emergency response occupations earn \$5 to \$21 above College of the Siskiyous district's single adult living wage of \$14.51 per hour. Median earnings are between \$8 below and \$15 above the living wage for a small family (\$30.72). Although wage data is unavailable for forest fire inspectors and prevention specialists, median hourly wages advertised in online job postings are above the living wage for a small family.

Education— Three firefighting and emergency response occupations require a postsecondary nondegree award for entry and no work experience, except fire inspectors and investigators which require five years or more of work experience. Forest fire inspectors and prevention specialists require a high school diploma or equivalent. However, 47% to 59% of incumbent workers in these occupations have educational attainment levels consistent with community college offerings (some college or associate degrees).

Supply Gap— Six Far North community colleges offer degrees and certificates in programs related to firefighting and emergency response occupations. Together, these programs conferred an average of 80 awards (certificates and associate degrees) in community college programs over the last three academic years (2022-23 through 2024-25). No awards were conferred in CIP programs. A comparison of occupational demand (157 annual openings) and educational supply (80 awards) suggests that there is a supply gap across the Far North subregion.

Recommendation

Based on the current analysis, the North Far North COE recommends that community colleges proceed with creating new programs related to firefighting and emergency response and supports a program modification.

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). Dataset 2025.4. 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 that attained a regional living wage. For more information, https://selfsufficiencystandard.org/California/ .
Typical Education Level and 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, 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, 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, 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, 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, https://coci2.ccctechcenter.org/.</p> <p>The National Center for Education Statistics (NCES) Integrated Postsecondary Integrated Data System (IPEDS) collects data from providers of postsecondary education, including the number of postsecondary awards earned (completions). For more information, https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions.</p>
Student Metrics and Demographics	DataVista, a statewide data system supported by the Chancellor's Office and hosted by Cal-PASS Plus, provides data on progress, success, employment, and earnings outcomes for California community college students. For more information, https://datavista.cccco.edu/ .

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 Washing Self Sufficiency Standard and State of California Department of Industrial Relations, “Minimum Wage,” https://www.dir.ca.gov/dlse/minimum_wage.htm

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