

Labor Market Analysis for Program Recommendation: 2133.10/Wildland Fire Technology (Wildland Fire Academy)

South Central Coast Center of Excellence, February 2025



FOR LABOR MARKET RESEARCH
SOUTH CENTRAL COAST

Summary

| | | | |
|-------------------------|---|---|---|
| Program LMI Endorsement | Endorsed: All LMI Criteria Met <input type="checkbox"/> | Endorsed: Some LMI Criteria Met <input checked="" type="checkbox"/> | Not LMI Endorsed <input type="checkbox"/> |
|-------------------------|---|---|---|

Program LMI Endorsement Criteria

| | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
|--|---|--|
| Supply Gap: | Comments: there is projected to be 163 annual job openings in the South Central Coast (SCC) region for these firefighter occupations, which is less than the 319 awards conferred by educational institutions . | Though supply is greater than demand, firefighting is an essential public safety job and agencies throughout the state and nation have reported ongoing shortages. Additionally, measuring demand for firefighting presents unique challenges that are further explained throughout this report. |
| Self-Sufficiency Standard Living Wage ¹ : | Comments: All (100%) annual job openings for these firefighter occupations have entry-level hourly wages significantly above the Ventura County living wage of \$24.53 . | |
| Education: | Comments: nearly all (99%) annual job openings for these firefighter occupations typically require a postsecondary nondegree award . Additionally, between 47% and 60% of workers in the field have completed some college or an associate degree as their highest level of education . | |

Additional Considerations

| | | | |
|-------------------------|------------------------------|-------------------------------|--|
| Emerging Occupation(s): | Yes <input type="checkbox"/> | Some <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| <i>Comments:</i> N/A | | | |

The South Central Coast Center of Excellence for Labor Market Research (SCC COE) prepared this report to determine whether there is a supply gap in the SCC regional labor market related to two middle-skill occupations:

- *Firefighters (33-2011)*
- *Forest Fire Inspectors and Prevention Specialists (33-2022)*

¹ At the direction of the California Community College Chancellor's Office, the living wage endorsement criteria in this report uses the University of Washington's Center for Women's Welfare Self-Sufficiency Standard, which the COE refers to as a living wage, to determine the living wage for Los Angeles, San Luis Obispo, Santa Barbara, and Ventura counties, last updated in March 2024.

Wildfires across the U.S. and California have strained limited resources to calm and contain their spread. Nationwide, there have been reports of an alarming shortage of firefighters. Within the past four decades, emergency calls have tripled, and the amount of available personnel has waned with the number of volunteer firefighters having dropped by 25% (200,000 volunteers).² Just within the past few months, firefighters were stretched thin as wildfires burned homes and engulfed hundreds of thousands of acres across Southern California – including within Ventura County³, as well as the devastating fires in Altadena and Pacific Palisades.⁴ Staffing shortages across California firefighting units, “create punishing shifts, forced overtime and long deployments.”⁵

Labor market demand for these fire technology occupations is likely understated since firefighter/paramedic/EMT jobs may be classified as either *Firefighters* (33-2011), *Paramedics* (29-2043), or *Emergency Medical Technicians* (29-2042). Additionally, though fire departments generally prefer to hire candidates trained as both firefighters and EMTs/paramedics, many agencies are waiving EMT/paramedic requirements due to the lack of qualified candidates.⁶

Furthermore, hiring practices for firefighters vary at the federal, state, and local level. In the western U.S., the application period for federal wildland firefighters is usually mid-October, with selection completed by mid-February. At the state level, Cal Fire accepts applications for seasonal firefighting positions during November, while city and county governments typically announce openings as they are needed.⁷

Based on the available data there does not appear to be a supply gap for these fire technology occupations, but there are several challenges to quantifying the labor gap for these occupations, as noted above. Firefighting is an essential public safety job, particularly with the increased severity of wildfires throughout the state. Typical education requirements for these occupations align with a community college education and entry-level wages are above the Self-Sufficiency Standard living wage. **Therefore, due to some of the regional labor market criteria being met, the COE endorses this proposed program.**

² Mark Hyman and Larry Deal, "Alarming Shortage: the nation is facing an alarming shortage of firefighters," ABC 33/40 News, last modified March 7, 2024, <https://abc3340.com/news/inside-your-world/alarming-shortage-the-nation-is-facing-an-alarming-shortage-of-firefighters>.

³ "Governor Newsom Proclaims State of Emergency in Ventura County Due to Mountain Fire, Meets with First Responders," Governor of California, last modified November 8, 2024, <https://www.gov.ca.gov/2024/11/07/governor-newsom-proclaims-state-of-emergency-in-ventura-county-due-to-mountain-fire-meets-with-first-responders/>.

⁴ Natalia Osuna, "Here is a Timeline of the Eaton and Palisades Fires in LA County," NBC Los Angeles, last modified January 24, 2025, <https://www.nbclosangeles.com/news/california-wildfires/timeline-eaton-palisades-fires-la-county/3614940/>.

⁵ Julie Cart, "Overworked California firefighters struggle with PTSD, suicide, fatigue, intensifying wildfires," *CalMatters*, June 13, 2022, xx, <https://calmatters.org/environment/2022/06/california-firefighter-trauma-ptsd/?series=california-firefighters-trauma-wildfires>.

⁶ "Entry-Level Firefighting Careers," Centers of Excellence for Labor Market Research, last modified June 14, 2023, <https://coecc.net/california/2023/03/entry-level-firefighting-careers/>.

⁷ *Ibid.*

Exhibit 1 lists the occupational demand, supply, typical entry-level education, and educational attainment for the occupations included in this report.

Exhibit 1: Labor Market Endorsement Summary

| Occupation (SOC) | Demand (Annual Openings) | Supply (CC and Non-CC) | Entry-Level Hourly Earnings (25 th Percentile) | Typical Entry-Level Education | Community College Educational Attainment |
|---|--------------------------|------------------------|---|-----------------------------------|--|
| Forest Fire Inspectors and Prevention Specialists (33-2022) | 1 | Accounted for below | Ventura: Insufficient data | High school diploma or equivalent | 47% |
| Firefighters (33-2011) | 162 | 319 | Ventura: \$32.26 | Postsecondary nondegree award | 60% |
| Total | 163 | 319 | N/A | N/A | N/A |

Demand:

- The number of jobs related to these firefighter occupations is projected to increase 5% through 2028 in the SCC region. There are projected to be 163 annual job openings due to new job creation and replacements.
- Hourly entry-level wages for *Firefighters (33-2011)* are \$32.26, which is above the Self-Sufficiency Standard living wage (\$24.53 for Ventura County). There was insufficient wage data for *Forest Fire Inspectors and Prevention Specialists (33-2022)* due to a small number of jobs.
- There were 38 online job postings for these firefighter occupations over the past 12 months. The highest number of postings were for firefighters.
 - It is important to note the number of job postings for firefighters appears low because agencies typically use a single job posting to create a pool of qualified applicants and fill positions as needed.
- The typical entry-level education for these firefighter occupations ranges from a high school diploma to a postsecondary nondegree award.
- Between 47% and 60% of workers in the field have completed some college or an associate degree as their highest level of education.

Supply:

- There was an average of 319 awards conferred by four community colleges in the SCC Region from 2020 to 2023.
- Non-community college institutions did not confer any related awards from 2019 to 2022.
- SCC community college students that exited firefighter programs in the 2021-22 academic year had a median annual wage of \$46,764 (\$22.48 per hour) after exiting the program and 61% attained the regional living wage (Self-Sufficiency Standard).
- Throughout the SCC Region, there is insufficient data to determine the percentage of students that are working in a job closely related to their field of study.

Demand

Occupational Projections:

Exhibit 2 compares historical and projected changes in employment for these occupations compared to the number of jobs in 2018. Notably, employment for these firefighter occupations in Ventura County declined 2% from 2018-2023, which is a smaller decline when compared to all other counties in the SCC region. From 2023-2028, employment for these firefighter occupations in all SCC counties is expected to steadily grow.

Exhibit 2: Historical and Projected Employment for Firefighter Occupations in the SCC Region, 2018-2028

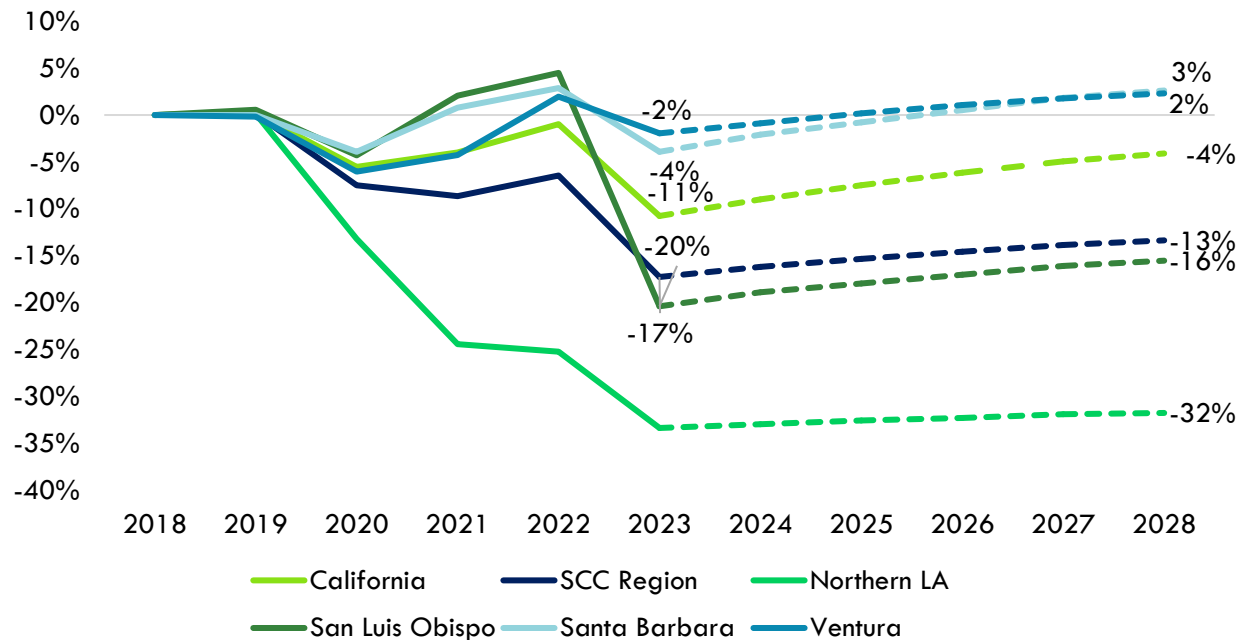


Exhibit 3 shows the five-year occupational demand projections for these firefighter occupations. In the SCC Region, the number of jobs related to these firefighter occupations is projected to increase 5% through 2028. There is projected to be 163 jobs available annually. Specifically in Ventura County, employment is projected to increase 4% through 2028 and there is projected to be 47 annual job openings.

Exhibit 3: Occupational Demand in SCC Region⁸

| Geography | 2023 Jobs | 2028 Jobs | 2023-2028 Change | 2023-2028 % Change | Annual Openings |
|-------------------|--------------|--------------|------------------|--------------------|-----------------|
| Northern LA | 506 | 519 | 13 | 3% | 42 |
| San Luis Obispo | 428 | 454 | 27 | 6% | 38 |
| Santa Barbara | 368 | 393 | 24 | 7% | 33 |
| Ventura | 553 | 577 | 24 | 4% | 47 |
| SCC Region | 1,855 | 1,943 | 88 | 5% | 163 |

⁸ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Wages:

The labor market endorsement in this report considers the entry-level hourly wages for these real estate occupations in relation to the living wage of the county where the requesting community college is located. This report was requested by Oxnard College, which is in Ventura County. Wages for other counties are included below to provide a complete analysis of the SCC Region.

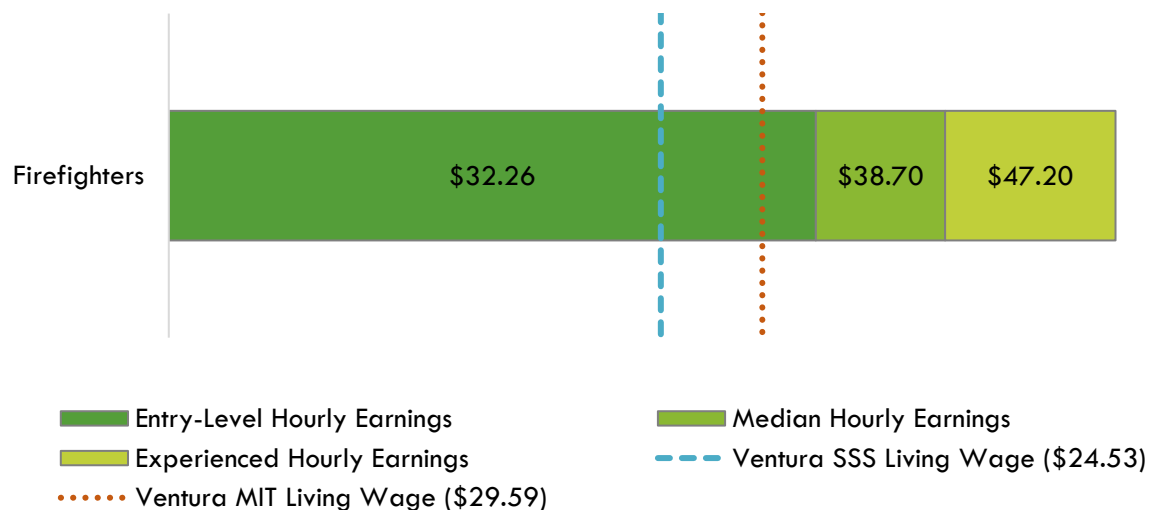
At the direction of the California Community College Chancellor's Office, the living wage endorsement criteria in this report uses the University of Washington's Center for Women's Welfare Self-Sufficiency Standard which the COE refers to as a living wage, to determine each county's living wage (last updated in March 2024). Additionally, data for the MIT Living Wage, updated on February 10, 2025, is provided as a reference. Both figures, which account for geographic-specific costs of necessities such as housing, food, health care, and transportation to assess the cost of living, are included in the exhibits below.

Ventura

Due to a low number of reported jobs for *Forest Fire Inspectors and Prevention Specialists (33-2022)*, wage data is unavailable for this occupation in Ventura County. Therefore, the wage data in this section is only for *Firefighters (33-2011)*.

Typical entry-level hourly wages for *Firefighters (33-2011)* are \$32.26, which is significantly above the Self-Sufficiency Standard living wage for one adult (\$24.53 in Ventura County). Exhibit 4 shows the wage range for *Firefighters (33-2011)* in Ventura County and how it compares to the regional living wage.

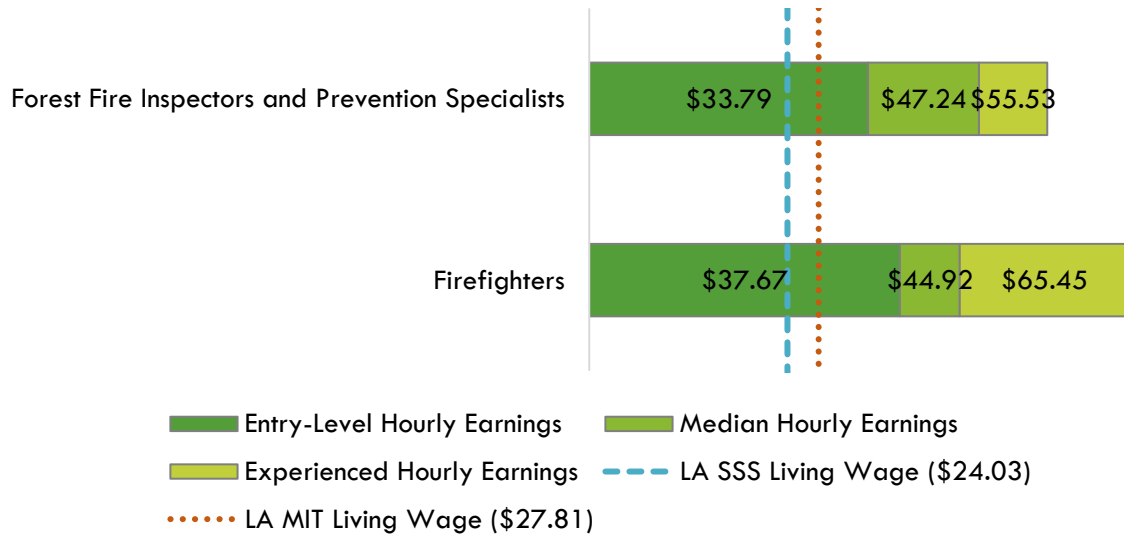
Exhibit 4: Wages by Occupation in Ventura County



Northern Los Angeles

All (100%) annual openings for these firefighter occupations have entry-level wages above the Self-Sufficiency Standard living wage for one adult (\$24.03 in Los Angeles County). Entry-level wages for these occupations range from \$33.79 to \$37.67. Exhibit 5 shows the wage range for each of these firefighting occupations in Northern Los Angeles and how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

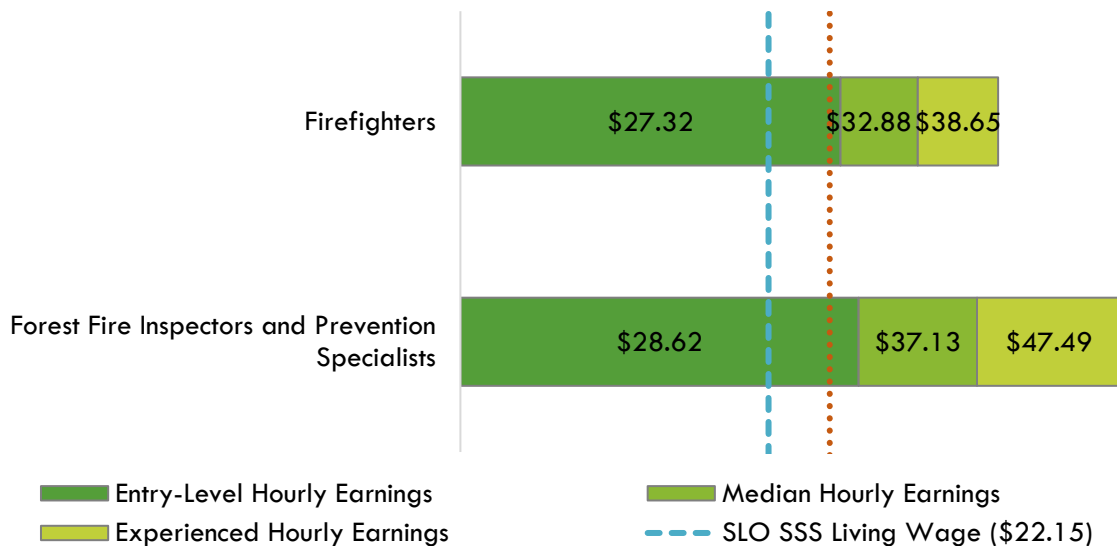
Exhibit 5: Wages by Occupation in Northern Los Angeles County



San Luis Obispo

All (100%) annual openings for these firefighter occupations have entry-level wages above the Self-Sufficiency Standard living wage for one adult (\$22.15 in San Luis Obispo County). Entry-level hourly wages range from \$27.32 to \$28.62. Exhibit 6 shows the wage range for each of these firefighter occupations and how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

Exhibit 6: Wages by Occupation in San Luis Obispo County

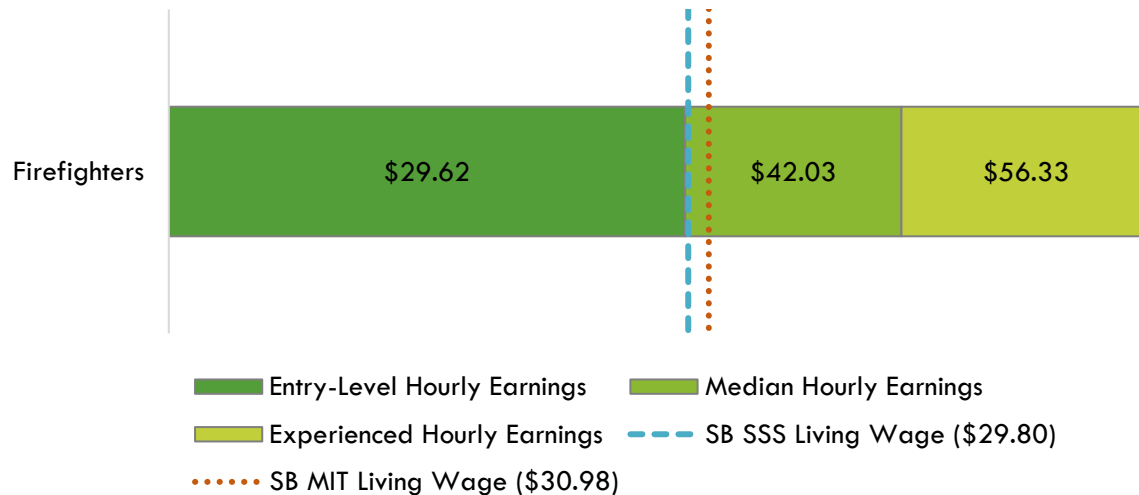


Santa Barbara

Due to a low number of reported jobs for *Forest Fire Inspectors and Prevention Specialists (33-2022)*, wage data is unavailable for this occupation in Santa Barbara County. Therefore, the wage data in this section is only for *Firefighters (33-2011)*.

Typical entry-level hourly wages for *Firefighters (33-2011)* are \$29.62, which is just below the Self-Sufficiency Standard living wage for one adult (\$29.80 in Santa Barbara County). The median hourly earnings for *Firefighters (33-2011)* are \$42.03, which is above the living wage. Exhibit 7 wage range for *Firefighters (33-2011)* in Santa Barbara County and how it compares to the regional living wage.

Exhibit 7: Wages by Occupation in Santa Barbara County



Job Postings:

There were 38 online job postings related to *Firefighters (33-2011)* listed in the past 12 months in the SCC region. Additionally, there were no online job postings for *Forest Fire Inspectors and Prevention Specialists (33-2022)* during the same period. As a result, Exhibit 8 shows the number of job postings only for *Firefighters (33-2011)*. Over half (58%) of job postings were in Ventura (29%) and Santa Barbara (29%) counties.

It is important to note the number of job postings for firefighters appears low because agencies typically use a single job posting to create a pool of qualified applicants and fill positions as needed. Additionally, federal and state agencies have specific periods when applications are accepted.

Exhibit 8: Number of Job Postings by Sub-Region (n=38)

| Occupation | Job Postings | Percentage of Job Postings |
|-----------------------|--------------|----------------------------|
| Ventura | 11 | 29% |
| Santa Barbara | 11 | 29% |
| Northern Los Angeles | 8 | 21% |
| San Luis Obispo | 8 | 21% |
| Total Postings | 38 | 100% |

All online job postings in the past 12 months were for *Firefighters (33-2011)*; there were no job postings for *Forest Fire Inspectors and Prevention Specialists (33-2022)*, as noted in Exhibit 9.

Exhibit 9: Number of Job Postings by Occupation (n=38)

| Occupation | Job Postings | Percentage of Job Postings |
|---|--------------|----------------------------|
| Firefighters | 38 | 100% |
| Forest Fire Inspectors and Prevention Specialists | 0 | 0% |

The top employers in the region, by number of job postings, are shown in Exhibit 10.

Exhibit 10: Top Employers by Number of Job Postings (n=38)

| Company | Job Postings | Percentage of Job Postings |
|-----------------------------|--------------|----------------------------|
| Northrop Grumman | 6 | 16% |
| Allied Universal | 4 | 11% |
| Chumash Casino Resort | 3 | 8% |
| City Of San Luis Obispo | 3 | 8% |
| County Santa Barbara Health | 3 | 8% |
| American Climate Corps | 2 | 5% |
| American Security Programs | 1 | 3% |
| City Of Guadalupe | 1 | 3% |
| City Of Lompoc | 1 | 3% |
| City Of Morro Bay | 1 | 3% |

The top specialized and soft skills, listed by those most frequently mentioned in job postings (denoted in parentheses), are shown in Exhibit 11. Due to a low number of postings, there was insufficient data to display the top software skills in online job postings.

Exhibit 11: Top Skills by Number of Job Postings (n=38)

| Top Specialized Skills | Top Soft Skills | Top Software Skills |
|--|----------------------------------|---------------------|
| Firefighting (34) | Operations (24) | Insufficient data |
| Emergency Response (16) | Good Driving Record (14) | |
| Fire Prevention (15) | Communication (12) | |
| Fire Suppression Systems (12) | First Aid (10) | |
| Occupational Safety and Health Administration (OSHA) (9) | Innovation (10) | |
| Cardiopulmonary Resuscitation (CPR) (8) | Physical Fitness (10) | |
| Chainsaws (8) | Management (9) | |
| Emergency Medical Services (8) | Customer Service (8) | |
| Fire Behavior (8) | Interpersonal Communications (8) | |
| Fire Service (8) | Planning (8) | |

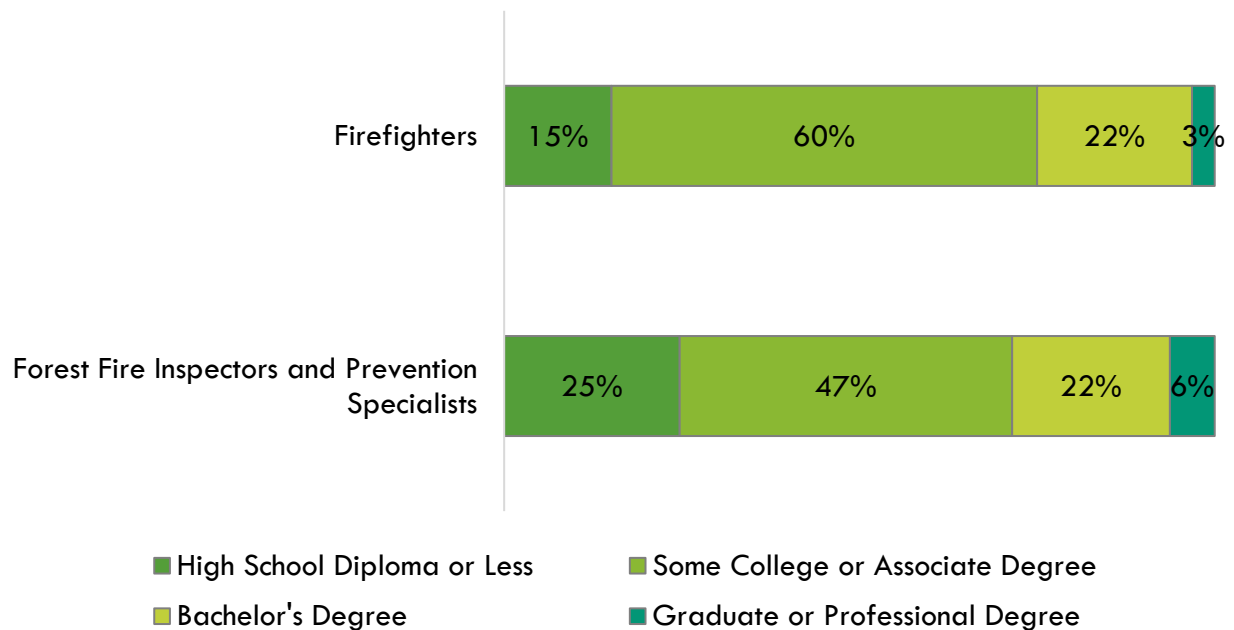
Educational Attainment:

The Bureau of Labor Statistics (BLS) lists the following as the typical entry-level education for these firefighting occupations:

- High School Diploma or Equivalent
 - *Forest Fire Inspectors and Prevention Specialists (33-2022)*
- Postsecondary nondegree award
 - *Firefighters (33-2011)*

The national-level educational attainment data indicates between 47% and 60% of workers in the field have completed some college or an associate degree as their highest level of education. Exhibit 12 shows the educational attainment for each occupation, sorted by highest community college educational attainment to lowest.

Exhibit 12: National-level Educational Attainment for Occupations



Of the 66% of the cumulative job postings for these firefighter occupations that listed a minimum education requirement in the SCC Region, 100% (25) requested a high school diploma or an associate degree.

Educational Supply

Community College Supply:

Exhibit 13 shows the three-year average number of awards conferred by community colleges in the related TOP codes:

- Fire Technology (2133.00)
- Wildland Fire Technology (2133.10)
- Fire Academy (2133.50)

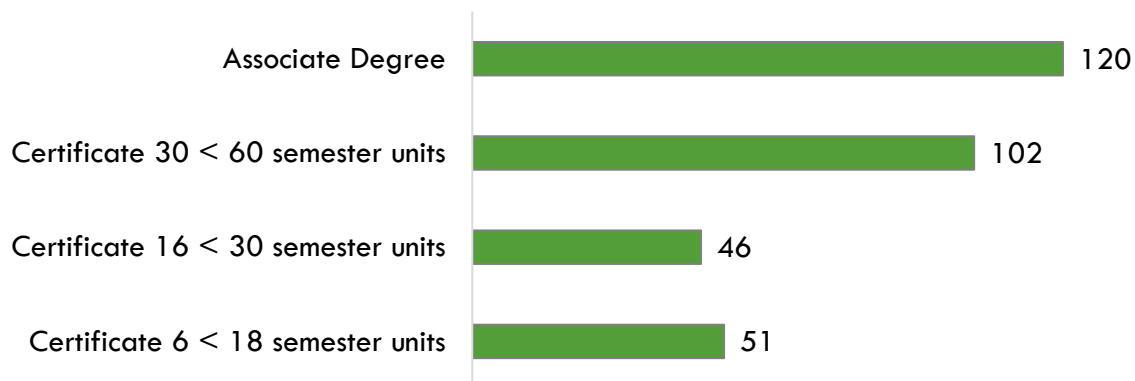
The college with the most completions in the region is Oxnard (141), followed by Allan Hancock (109), College of the Canyons (49), and Antelope Valley (21).

Exhibit 13: Regional Community College Awards (Certificates and Degrees), 2020-2023

| TOP Code | Program | College | 2020-2021 Awards | 2021-2022 Awards | 2022-2023 Awards | 3-Year Award Average |
|--------------------------------|--------------------------|-----------------|------------------|------------------|------------------|----------------------|
| 2133.00 | Fire Technology | Allan Hancock | 72 | 53 | 42 | 56 |
| | | Antelope Valley | 25 | 12 | 17 | 18 |
| | | Canyons | 47 | 46 | 54 | 49 |
| | | Oxnard | 91 | 112 | 79 | 94 |
| Supply Subtotal/Average | | | 235 | 223 | 192 | 217 |
| 2133.10 | Wildland Fire Technology | Allan Hancock | 0 | 3 | 3 | 2 |
| | | Antelope Valley | 1 | 1 | 6 | 3 |
| Supply Subtotal/Average | | | 1 | 4 | 9 | 5 |
| 2133.50 | Fire Academy | Allan Hancock | 63 | 43 | 47 | 51 |
| | | Oxnard | 50 | 46 | 44 | 47 |
| Supply Subtotal/Average | | | 113 | 89 | 91 | 98 |
| Supply Total/Average | | | 349 | 316 | 292 | 319 |

Exhibit 14 shows the annual average community college awards by type from 2020-21 to 2022-23. The plurality of the awards are for associate degrees, followed by certificates between 30 and less than 60 semester units and certificates between 6 and less than 18 semester units.

Exhibit 14: Annual Average Community College Awards by Type, 2020-2023



Community College Student Outcomes:

Exhibit 15 shows the Strong Workforce Program (SWP) metrics for Wildland Fire Technology programs in the SCC Region and California. Notably, there is no data for Ventura County Community College District (VCCCD) district for the Wildland Fire Technology (2133.10) TOP code. A review of programs in the Chancellor’s Office Curriculum Inventory (COCI) shows that no programs under this TOP code are currently offered at VCCCD. Additionally, there is insufficient data to calculate multiple metrics in the SCC Region due to a low number of students.

Out of the 1,921 Wildland Fire Technology students throughout California in the 2022-23 academic year, 14% (267) attended a SCC Region college. Students in California that exited Wildland Fire Technology programs in the 2021-22 academic year had lower annual earnings (\$46,764 or \$22.48 per hour), compared to the Wildland Fire Technology Students statewide (\$59,002, \$28.37 per hour).

A lower percentage of SCC Wildland Fire Technology students (61%) attained the living wage when compared to all Wildland Fire Technology students in the state (72%). Additionally, SCC Region students that exited Wildland Fire Technology programs had a 260% median change in earnings. However, this data reflects outcomes for only 22 students.

Exhibit 15: Wildland Fire Technology (2133.10) Strong Workforce Program Metrics, 2022-23⁹

| SWP Metric | VCCCD | SCC Region | California |
|---|-------|--------------------|--------------------|
| SWP Students | N/A | 267 | 1,921 |
| SWP Students Who Earned 9 or More Career Education Units in the District in a Single Year | N/A | 58% | 31% |
| SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course | N/A | Insufficient Data | 67% |
| SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status | N/A | Insufficient Data | 1% |
| SWP Students Who Transferred to a Four-Year Postsecondary Institution (2021-22) | N/A | Insufficient Data | 1% |
| SWP Students with a Job Closely Related to Their Field of Study (2020-21) | N/A | Insufficient Data | 74% |
| Median Annual Earnings for SWP Exiting Students (2021-22) | N/A | \$46,764 (\$22.48) | \$59,002 (\$28.37) |
| Median Change in Earnings for SWP Exiting Students (2021-22) | N/A | 260% | 53% |
| SWP Exiting Students Who Attained the Living Wage (2021-22) | N/A | 61% | 72% |

⁹ All SWP metrics are for 2022-23 unless otherwise noted.

Non-Community College Supply:

To comprehensively analyze the regional supply, it is crucial to include data from other institutions offering real estate training programs. Over the past three years (2019-2022), there were no awards conferred by non-community college institutions under the related Classification of Instructional Programs (CIP) codes:

- Fire Prevention and Safety Technology/Technician (43.0201)
- Fire Science/Fire-fighting (42.0203)
- Wildland/Forest Firefighting and Investigation (43.0206)

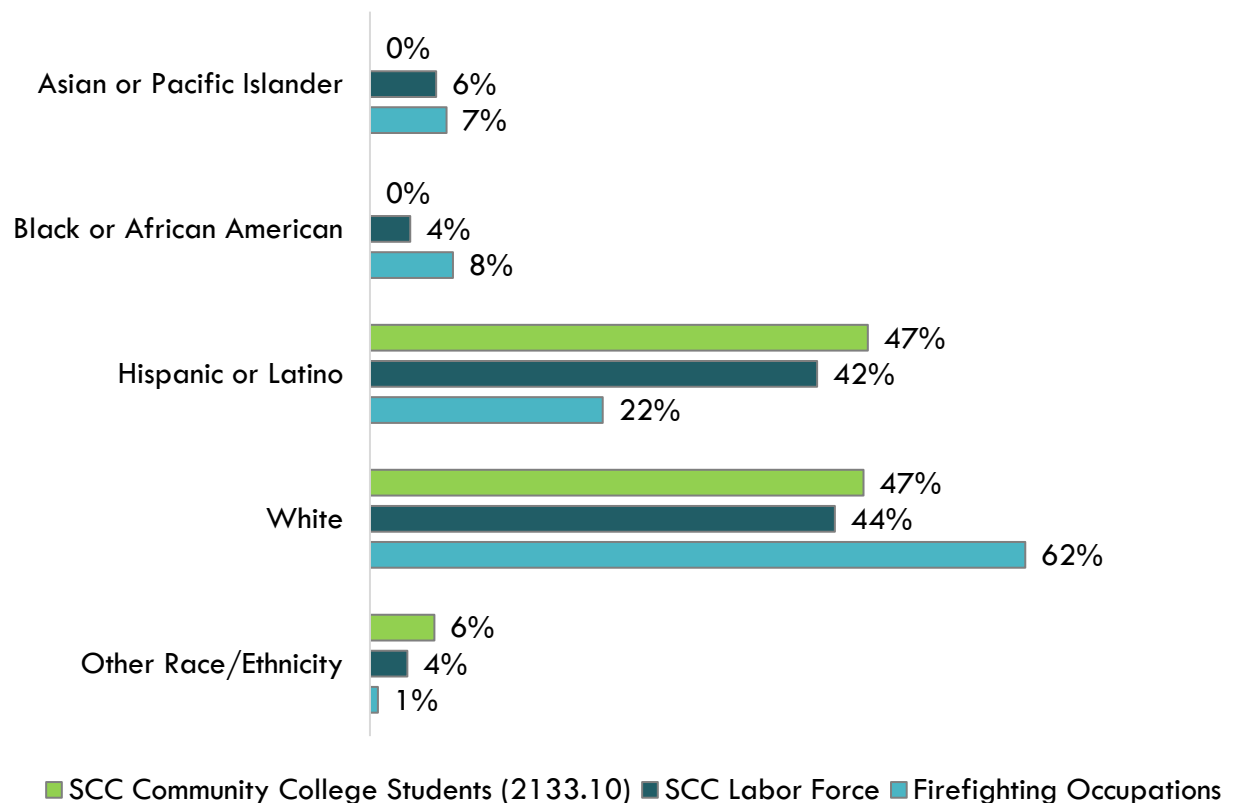
Regional Demographics

This section examines demographic data for SCC community college students in Wildland Fire Technology programs compared to the SCC labor force, along with occupational data, to identify potential diversity and equity issues addressable by community college programs.

Ethnicity:

Exhibit 16 compares the ethnicity of SCC community college students enrolled in Wildland Fire Technology programs, the overall SCC labor force, and occupation-specific data for the two firefighting occupations. Notably, 62% of workers employed in these firefighting occupations are white, which is higher than the labor force (44%), and community college students (47%). Additionally, 47% of community college Wildland Fire Technology students are Hispanic or Latino, which is similar to the labor force (42%), but almost double these firefighting occupations (22%).

Exhibit 16: Program and County Demographics by Ethnicity

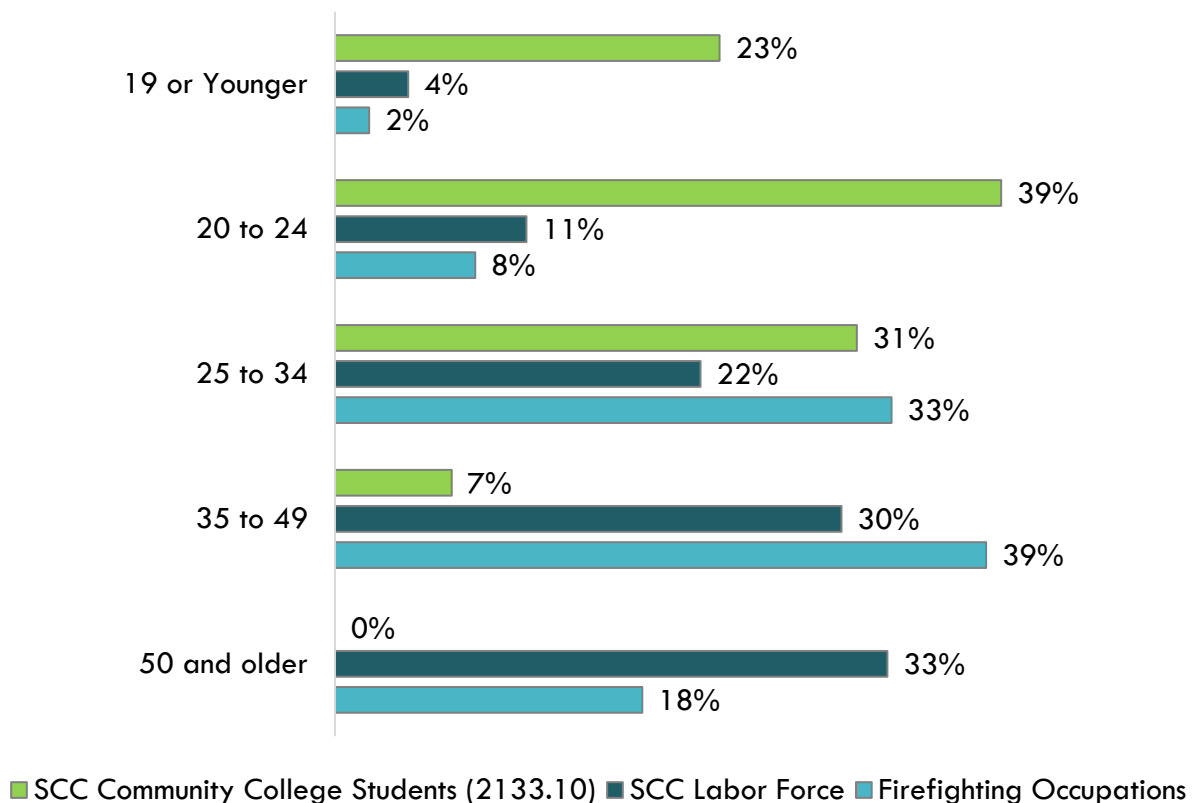


Age:

Exhibit 17 compares the age of SCC community college students enrolled in Wildland Fire Technology programs, the overall labor force, and occupation-specific data for the two firefighting occupations included in this report. Notably, 39% of workers in these firefighting occupations are between the ages of 35 to 49, which is higher than the SCC Labor Force (30%) and significantly higher than Wildland Fire Technology students (7%).

In contrast, 39% of Wildland Fire Technology students are age 20 to 24, which is significantly higher than the SCC Labor Force (4%), and these firefighting occupations (2%). Similarly, 39% of Wildland Fire Technology students are age 20 to 24, which is significantly higher than the SCC Labor Force (11%) and these firefighting occupations (8%).

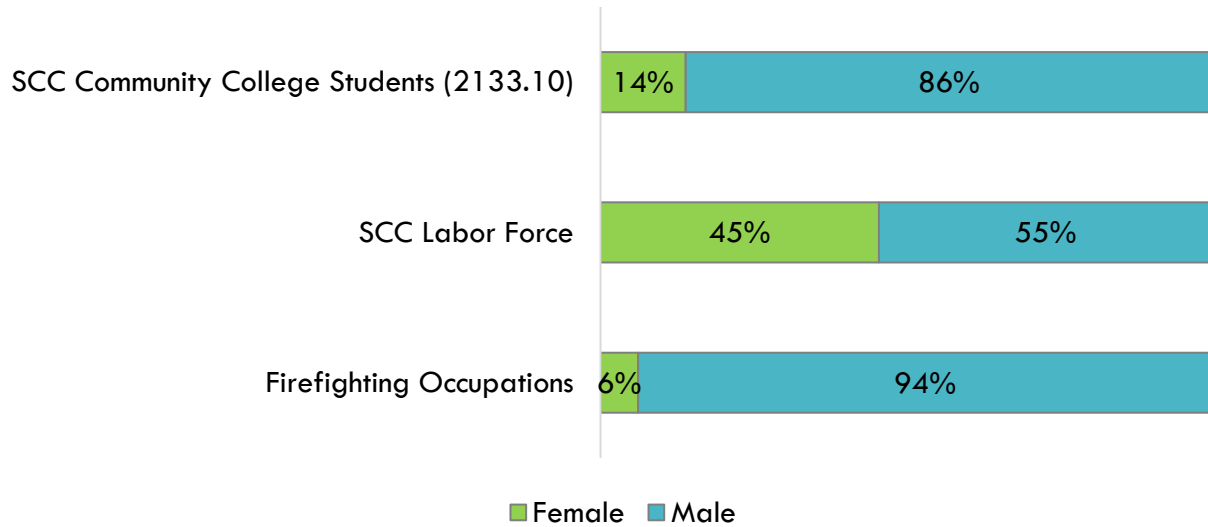
Exhibit 17: Program and County Demographics by Age



Sex:

Exhibit 18 compares the sex of SCC community college students enrolled in Wildland Fire Technology programs, the overall SCC labor force, and occupation-specific data for these firefighting occupations. The overwhelming majority of students (86%) and workers in these firefighting occupations (94%) are men, which significantly contrasts with the SCC labor force (55% men).

Exhibit 18: Program and County Demographics by Sex



Appendix A: Methodology

Traditional Labor Market Data

The SCC COE prepared this report by analyzing data from occupations and education programs. Occupational data is derived from Lightcast, a labor market analytics firm that consolidates data from the California Employment Development Department (EDD), U.S. Bureau of Labor Statistics (BLS) and other government agencies.

Data included in this analysis represents the labor market demand for relevant positions most closely related to the proposed program as expressed by the requesting college in consultation with the SCC COE. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges.

Program supply data is drawn from two systems: Taxonomy of Programs (TOP) and Classification of Instructional Programs (CIP).

Using a TOP-SOC crosswalk, the SCC COE identified middle-skill jobs for which programs within these TOP codes train. Middle-skill jobs include:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

The SCC COE determined labor market supply for an occupation or SOC code by analyzing the number of program completers or awards in a related TOP or CIP code. The COE developed a “supply table” with this information, which is the source of the program supply data for this report. TOP code data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP code data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data), also known as IPEDS.

TOP is a system of numerical codes used at the state level to collect and report information on California community college programs and courses throughout the state that have similar outcomes. CIP codes are a taxonomy of academic disciplines at institutions of higher education in the United States and Canada. Institutions outside of the California Community College system do not use TOP codes in their reporting systems.

Online Job Postings Data

Online job postings data, also known as real-time labor market information, captures job post advertisements for occupations relevant to the field of study which can signal demand and show what employers are looking for in potential employees but is not a perfect measure of the quantity of open positions. Online job postings data is sourced from Lightcast, a labor market analytics firm that scrapes, collects, and organizes data from online job boards such as LinkedIn, Indeed, Glassdoor, Monster, GovernmentJobs.com, and thousands more.

There are several limitations when analyzing job postings. A single job posting may not represent a single job opening, as employers may be creating a pool of candidates for future openings or hiring for multiple positions with a single posting. Additionally, not all jobs are posted online, and jobs may be filled through other methods such as internal promotion, word-of-mouth advertising, physical job boards, or a variety of other channels.

Additionally, Lightcast uses natural language processing (NLP) to determine the related company, industry, occupation, and other information for each job posting. However, NLP has limitations that include understanding contextual words or phrases; determining differences in words that can be used as nouns, verbs, and/or adjectives; and misspellings or grammatical errors.¹⁰ For these reasons, job postings could be assigned to the wrong employer, industry, or occupation within Lightcast’s database.

Geography

The South Central Coast region encompasses San Luis Obispo, Santa Barbara, and Ventura counties, as well as parts of Northern Los Angeles County. The 34 ZIP codes listed in Exhibit 19 are used to define Northern Los Angeles County:

Exhibit 19: Northern Los Angeles ZIP Codes

| ZIP Code | Primary City | ZIP Code | Primary City |
|----------|-----------------|----------|--------------|
| 91310 | Castaic | 93532 | Lake Hughes |
| 91321 | Newhall | 93534 | Lancaster |
| 91322 | Newhall | 93535 | Lancaster |
| 91350 | Santa Clarita | 93536 | Lancaster |
| 91351 | Canyon Country | 93539 | Lancaster |
| 91354 | Valencia | 93543 | Little Rock |
| 91355 | Valencia | 93544 | Llano |
| 91380 | Santa Clarita | 93550 | Palmdale |
| 91381 | Stevenson Ranch | 93551 | Palmdale |
| 91382 | Santa Clarita | 93552 | Palmdale |
| 91383 | Santa Clarita | 93553 | Pearblossom |
| 91384 | Castaic | 93563 | Valyermo |
| 91385 | Valencia | 93584 | Lancaster |
| 91386 | Canyon Country | 93586 | Lancaster |
| 91387 | Canyon Country | 93590 | Palmdale |
| 91390 | Santa Clarita | 93591 | Palmdale |
| 93510 | Acton | 93599 | Palmdale |

Though traditional labor market information is available at the ZIP code level, job postings data is available only at the city or county level. To analyze job postings for the entire SCC region, the SCC COE developed a list of cities available in Lightcast for analysis. Additionally, demographic data is not available at the ZIP code level but is available at the Census Bureau’s Public Use Microdata Area (PUMA) level. Demographic data was sourced via IPUMS and analyzed by the SCC COE.

¹⁰ K. R. Chowdhary, *Fundamentals of Artificial Intelligence* (Basingstoke: Springer Nature, 2020), <https://link.springer.com/book/10.1007/978-81-322-3972-7>.

Appendix B: Data Sources

| Data Type | Source |
|---|--|
| Occupational Projections, Wages, and Job Postings | <p>Traditional labor market information data is sourced from Lightcast, a labor market analytics firm. Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics and the American Community Survey.</p> <p>For more information, see https://lightcast.io/</p> |
| Living Wage | <p>“Living Wage” measures the income necessary for an individual or family to afford basic expenses by assessing the costs such as housing, food, childcare, health care, transportation, and taxes. Per the CCCCO, this report’s endorsement criteria uses the University of Washington’s Center for Women’s Welfare Self-Sufficiency Standard for a single adult last updated in March 2024.</p> <p>For more information, see: http://www.selfsufficiencystandard.org/California</p> <p>The MIT Living Wage, updated on February 10, 2025, is a nationally recognized living wage metric and is provided for reference. For more information, see: https://livingwage.mit.edu/states/06/locations</p> |
| Typical Education and Training Requirements, and Educational Attainment | <p>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.</p> <p>For more information, see https://www.bls.gov/emp/documentation/education/tech.htm</p> |
| Emerging Occupation Descriptions, Additional Education Requirements, and Employer Preferences | <p>The O*NET database includes information on skills, abilities, knowledges, work activities, and interests associated with occupations. For more information, see https://www.onetonline.org/help/online/</p> |
| Educational Supply | <p>The CCCCO Data Mart provides information about students, courses, student services, outcomes and faculty and staff. For more information, see: https://datamart.cccco.edu</p> <p>The National Center for Education Statistics (NCES) Integrated Postsecondary Integrated Data System (IPEDS) collects data on the number of postsecondary awards earned (completions). For more information, see https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions</p> |
| Student Metrics and Demographics | <p>DataVista, a statewide data system supported by the California Community Colleges Chancellor's Office, provides data on progress, success, employment, and earnings outcomes for California community college students. For more information, see: https://datavista.cccco.edu/</p> |

| Data Type | Source |
|--|--|
| Population and Occupation Demographics | <p>The Census Bureau’s American Community Survey (ACS) is the premier source for detailed population and housing information. For more information, see: https://www.census.gov/programs-surveys/acs</p> <p>Data is sourced from IPUMS USA, a database providing access to ACS and other Census Bureau data products. For more information, see: https://usa.ipums.org/usa/about.shtml</p> |

All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor’s Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

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