



Labor Market Analysis for Program Recommendation

Fire Technology Occupations

Cabrillo College

Prepared by the San Francisco Bay Center of Excellence for Labor Market Research

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Recommendation

Based on all available data, there appears to be an “undersupply” of Fire Technology workers compared to the demand for this cluster of occupations in the Bay region and in the SC-Monterey sub-region (Monterey, San Benito, Santa Cruz counties). There is a projected annual gap of about 459 students in the Bay region and 82 students in the SC-Monterey Sub-Region.

Introduction

This report provides student outcomes data on employment and earnings for TOP 2133.00 - Fire Technology programs in the state and region. It is recommended that these data be reviewed to better understand how outcomes for students taking courses on this TOP code compare to potentially similar programs at colleges in the state and region, as well as to outcomes across all CTE programs at Cabrillo College and in the region.

This report profiles Fire Technology Occupations in the 12 county Bay region and in the SC-Monterey sub-region for a regional program recommendation for Fire Technology A.S. and Fire Technology Professional A.S. at Cabrillo College.

- **First-Line Supervisors of Firefighting and Prevention Workers (33-1021):** Directly supervise and coordinate activities of workers engaged in fire fighting and fire prevention and control.
Entry-Level Educational Requirement: Postsecondary nondegree award
Training Requirement: Moderate-term on-the-job training
Percentage of Community College Award Holders or Some Postsecondary Coursework: 51%
- **Firefighters (33-2011):** Control and extinguish fires or respond to emergency situations where life, property, or the environment is at risk. Duties may include fire prevention, emergency medical service, hazardous material response, search and rescue, and disaster assistance.
Entry-Level Educational Requirement: Postsecondary nondegree award
Training Requirement: Long-term on-the-job training
Percentage of Community College Award Holders or Some Postsecondary Coursework: 60%
- **Fire Inspectors and Investigators (33-2021):** Inspect buildings to detect fire hazards and enforce local ordinances and State laws, or investigate and gather facts to determine cause of fires and explosions.
Entry-Level Educational Requirement: Postsecondary nondegree award
Training Requirement: Moderate-term on-the-job training
Percentage of Community College Award Holders or Some Postsecondary Coursework: 50%
- **Forest Fire Inspectors and Prevention Specialists (33-2022):** Enforce fire regulations, inspect forest for fire hazards and recommend forest fire prevention or control measures. May report forest fires and weather

conditions.

Entry-Level Educational Requirement: High school diploma or equivalent

Training Requirement: Moderate-term on-the-job training

Percentage of Community College Award Holders or Some Postsecondary Coursework: 50%

Occupational Demand

Table 1. Employment Outlook for Fire Technology Occupations in Bay Region

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
First-Line Supervisors of Firefighting and Prevention Workers	1,284	1,363	79	6%	561	112	\$55	\$63
Firefighters	6,902	7,277	375	5%	3,210	642	\$36	\$44
Fire Inspectors and Investigators	358	386	28	8%	199	40	\$24	\$38
Forest Fire Inspectors and Prevention Specialists	84	97	14	16%	54	11	\$40	\$68
Total	8,628	9,124	495	6%	4,025	805		

Source: Lightcast 2022.3

Bay Region includes: Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties

Table 2. Employment Outlook for Fire Technology Occupations in SC-Monterey Sub-region

Occupation	2021 Jobs	2026 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
First-Line Supervisors of Firefighting and Prevention Workers	125	135	10	8%	58	12	\$37	\$49
Firefighters	935	997	62	7%	452	90	\$27	\$32
Fire Inspectors and Investigators	30	32	2	6%	16	3	\$20	\$31
Forest Fire Inspectors and Prevention Specialists	NA	NA	0	0%	0	0		
Total	1,090	1,164	74	7%	526	105		

Source: Lightcast 2022.3

SC-Monterey Sub-Region includes: Monterey, San Benito, Santa Cruz Counties

Job Postings in Bay Region and SC-Monterey Sub-Region

Table 3. Number of Job Postings by Occupation for latest 12 months (Nov. 2022 - Oct. 2023)

Occupation	Bay Region	SC-Monterey
First-Line Supervisors of Firefighting and Prevention Workers	156	19
Firefighters	148	9
Fire Inspectors and Investigators	140	5
Forest Fire Inspectors and Prevention Specialists	30	2

Source: Lightcast

**Table 4a. Top Job Titles for Fire Technology Occupations for latest 12 months (Nov. 2022 - Oct. 2023)
Bay Region**

Title	Bay	Title	Bay
Firefighters/Paramedics	67	Reserve Firefighters	8
Firefighters	48	Assistant Fire Marshals	7
Fire Alarm Inspectors	37	Fire Captains	7
Battalion Chiefs	25	Fire Prevention Inspectors	7
Fire Inspectors	25	Fire Sprinkler Inspectors	7
Fire Chiefs	15	Rangers	7
Heavy Equipment Operators	13	Deputy Chief Counsels	6
Fire Marshals	10	Deputy Fire Marshals	6
Fire Alarm Systems Technicians	8	Fire Sprinkler Technicians	6

Source: Lightcast

**Table 4b. Top Job Titles for Fire Technology Occupations for latest 12 months (Nov. 2022 - Oct. 2023)
SC-Monterey Sub-Region**

Title	SC-Monterey	Title	SC-Monterey
Battalion Chiefs	5	Chief Deputy Clerks	1
Firefighters	3	Deputy Fire Marshals	1
Americorps Vista Associates	2	Fire Alarm Inspectors	1
Chief Deputy District Attorneys	2	Fire Alarm and Fire Sprinkler Inspectors	1
Deputy Chief Auditors	2	Fire Battalion Chiefs	1
Disbursement Managers	2	Fire Captains	1
Firefighters/Paramedics	2	Fire Chiefs	1
Heavy Equipment Operators	2	Fire Inspectors	1
Rangers	2	Fire Prevention Specialists	1

Source: Lightcast

Industry Concentration

Table 5. Industries hiring Fire Technology Workers in Bay Region

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2021)	Jobs in Industry (2026)	% Change (2021-26)	% Occupation Group in Industry (2022)
Local Government, Excluding Education and Hospitals	8,054	8,773	9%	91%

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2021)	Jobs in Industry (2026)	% Change (2021-26)	% Occupation Group in Industry (2022)
All Other Support Services	214	260	22%	2%
State Government, Excluding Education and Hospitals	160	168	5%	2%
Federal Government, Military	89	91	3%	1%
Convention and Trade Show Organizers	60	91	52%	1%
Federal Government, Civilian, Excluding Postal Service	83	85	2%	1%
Packaging and Labeling Services	76	87	15%	1%

Source: Lightcast 2022.3

Table 6. Top Employers Posting Fire Technology Occupations in Bay Region and SC-Monterey Sub-Region (Nov. 2022 - Oct. 2023)

Employer	Bay	Employer	SC-Monterey
State of California	40	State of California	7
Daily Dispatch	28	City Of Santa Cruz	4
Infosoft,	12	Health Improvement Partnership of Santa Cruz County	2
ADT Security Services	11	Sealicious Gewurztraminer, Monterey County	2
City Of Fremont	11	Seattle Colleges Foundation	2
County Of Marin	11	California Conservation Corps	1

Source: Lightcast

Educational Supply

There are 11 community colleges in the Bay Region issuing 346 awards on average annually (last 3 years ending 2018-19) on TOP 2133.00 - Fire Technology. In the SC-Monterey Sub-Region, there are two (2) community colleges that issued 23 awards on average annually (last 3 years) on this TOP code.

Table 7a. Community College Awards on TOP 2133.00 - Fire Technology in Bay Region

College	Subregion	Associate Degree	High unit Certificate	Low unit Certificate	Total
Cabrillo	SC-Monterey	17	0	0	17
Chabot	East Bay	9	3	0	12
Las Positas	East Bay	25	0	27	52
Los Medanos	East Bay	34	0	42	76
Merritt	East Bay	4	0	5	9
Mission	Silicon Valley	28	0	0	28
Monterey	SC-Monterey	6	0	0	6
San Francisco	Mid-Peninsula	19	0	47	66
San Mateo	Mid-Peninsula	17	3	0	20
Santa Rosa	North Bay	32	11	0	43

College	Subregion	Associate Degree	High unit Certificate	Low unit Certificate	Total
Solano	North Bay	13	4	0	17
Total		204	21	121	346

Source: Data Mart

Note: The annual average for awards is 2019-20 to 2021-22.

Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 805 annual openings for the Fire Technology occupational cluster and 346 annual (3-year average) awards for an annual undersupply of 459 students. In the SC-Monterey Sub-Region, there is also a gap with 105 annual openings and 23 annual (3-year average) awards for an annual undersupply of 82 students.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 2133.00 - Fire Technology

Metric Outcomes	Bay All CTE Programs	Cabrillo All CTE Programs	State 2133.00	Bay 2133.00	SC-Monterey 2133.00	Cabrillo 2133.00
Students with a Job Closely Related to Their Field of Study	74%	80%	72%	74%	66%	77%
Median Annual Earnings for SWP Exiting Students	\$53,090	\$46,381	\$59,478	\$67,353	\$115,874	\$120,723
Median Change in Earnings for SWP Exiting Students	24%	23%	27%	24%	25%	16%
Exiting Students Who Attained the Living Wage	54%	44%	68%	62%	78%	74%

Source: Launchboard Strong Workforce Program Median of 2018 to 2021.

Skills, Certifications and Education

Table 9. Top Skills for Fire Technology Occupations in Bay Region (Nov. 2022 - Oct. 2023)

Skill	Posting	Skill	Posting
Firefighting	173	Fire And Life Safety	56
Fire Prevention	132	Alarm Devices	52
Fire Suppression Systems	115	Self-Contained Breathing Apparatus	46
Fire Alarm Systems	111	Cardiopulmonary Resuscitation (CPR)	44
Fire Protection	100	Fire Investigation	44
Emergency Medical Services	98	Construction	42
Emergency Response	67	Incident Command Systems	37
Fire Science	60	NFPA (National Fire Protection Association) Codes	37
Fire Safety	58	Public Administration	30

Skill	Posting	Skill	Posting
Fire Service	57	Sprinkler Systems	30

Source: Lightcast

Table 10. Certifications for Fire Technology Occupations in the Bay Region (Nov. 2022 - Oct. 2023)

Certification	Posting	Certification	Posting
Valid Driver's License	213	Firefighter II Certification	26
Firefighter I Certification	83	Advanced Cardiovascular Life Support (ACLS) Certification	23
Emergency Medical Technician (EMT)	80	Pediatric Advanced Life Support (PALS)	21
Paramedic (EMT-P)	66	Emergency Medical Technician - Basic (EMT-B)	19
Advanced Life Support	46	NICET Level I Certification	19
Cardiopulmonary Resuscitation (CPR) Certification	38	Certified Fire Inspector II	18
Certified First Responder (CFR)	36	Nationally Registered Emergency Medical Technician (NREMT)	16
CDL Class C License	35	Automated External Defibrillator (AED) Certification	12
Basic Life Support (BLS) Certification	32	Nationally Registered Paramedic (NRP)	12
Certified Fire Inspector I	31	First Aid Certification	11

Source: Lightcast

Table 11. Education Requirements for Fire Technology Occupations in Bay Region

Education Level	Job Postings	% of Total
High school or GED	147	45%
Associate degree	54	16%
Bachelor's degree & higher	127	39%

Source: Lightcast

Note: 50% of records have been excluded because they do not include a degree level. As a result, the chart above may not be representative of the full sample.

Methodology

Occupations for this report were identified by use of job descriptions and skills listed in O*Net. Labor demand data is sourced from Lightcast occupation and job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CCCCO Data Mart and CTE Launchboard.

Sources

O*Net Online

Lightcast

CTE LaunchBoard www.calpassplus.org

Launchboard

Statewide CTE Outcomes Survey

Employment Development Department Unemployment Insurance Dataset

Living Insight Center for Community Economic Development

Chancellor's Office MIS system

Contacts

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