

# Firefighter Occupations

# Labor Market Information Report

# Solano 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 Firefighter workers compared to the demand for this cluster of occupations in the Bay region and in the North Bay sub-region (Marin, Napa, Solano, Sonoma counties). There is a projected annual gap of about 609 students in the Bay region and 44 students in the North Bay Sub-Region.

# Introduction

This report provides student outcomes data on employment and earnings for TOP 2133.50 - Fire Academy 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 Solano college and in the region.

This report profiles Firefighter Occupations in the 12 county Bay region and in the North Bay sub-region for a proposed new program at Solano college.

* **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 %

# Occupational Demand

**Table 1. Employment Outlook for Firefighter Occupations in Bay Region**

| **Occupation** | **2019 Jobs** | **2024 Jobs** | **5-yr Change** | **5-yr % Change** | **5-yr Total Openings** | **Annual Openings** | **25% Hourly Earning** | **Median Hourly Wage** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Firefighters | 8,351 | 8,762 | 411 | 5% | 3317 | 663 | $ 32.31 | $ 45.35 |
| Fire Inspectors and Investigators | 234 | 251 | 17 | 7 % | 128 | 26 | $ 42.74 | $ 53.40 |
| **Total** | **8,585** | **9,013** | **428** | **5%** | **3445** | **689** | **$32.59** | **$45.57** |
| Source: EMSI 2020.4 |

**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 Firefighter Occupations in North Bay Sub-region**

| **Occupation** | **2019 Jobs** | **2024 Jobs** | **5-yr Change** | **5-yr % Change** | **5-yr Total Openings** | **Annual Openings** | **25% Hourly Earning** | **Median Hourly Wage** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Firefighters | 1,472 | 1,545 | 73 | 5 % | 584 | 117 | $ 29.02 | $ 38.90 |
| Fire Inspectors and Investigators | 44 | 47 | 3 | 7 % | 23 | 5 | $ 37.60 | $ 47.99 |
| **Total** | **1,516** | **1,592** | **76** | **5%** | **607** | **122** | **$29.27** | **$39.16** |
| Source: EMSI 2020.4 |

**North Bay Sub-Region includes:** Marin, Napa, Solano, Sonoma counties

### Job Postings in Bay Region and North Bay Sub-Region

**Table 3. Number of Job Postings by Occupation for latest 12 months (Dec 2019-Nov 2020)**

| **Occupation** | **Bay Region** | **North Bay** |
| --- | --- | --- |
| Municipal Firefighters | 136 | 39 |
| Fire Inspectors | 128 | 19 |
| Forest Firefighters | 11 | 1 |
| Fire Investigators | 2 | 0 |
| Source: Burning Glass |

**Table 4a. Top Job Titles for Firefighter Occupations for latest 12 months (Dec 2019-Nov 2020) Bay Region**

| **Title** | **Bay** | **Title** | **Bay** |
| --- | --- | --- | --- |
| Firefighter | 26 | Fire Alarm Systems Inspector | 6 |
| Firefighter/First Responder | 13 | Fire Alarm & Fire Sprinkler Inspector | 6 |
| Fire Alarm Inspector | 13 | Fire Response Specialist | 5 |
| Fire Inspector | 10 | Aircraft And Firefighting Specialist | 5 |
| Fire Inspector - Alarm | 9 | U S Navy Firefighter | 4 |
| Fire Captain | 9 | Senior Fire Inspector | 4 |
| Firefighter Fire Department | 7 | Firefighter/Paramedic | 4 |
| Firefighter Recruit | 6 | Fire Sprinkler Technician/Fire Protection | 4 |
| Fire Protection Inspector | 6 | Fire Alarm Inspector - Bay Area | 4 |
| Source: Burning Glass |

**Table 4b. Top Job Titles for Firefighter Occupations for latest 12 months (Dec 2019-Nov 2020) North Bay Sub-Region**

| **Title** | **North Bay** | **Title** | **North Bay** |
| --- | --- | --- | --- |
| Firefighter | 12 | Sprinkler Inspector II | 1 |
| Fire Captain | 5 | Seasonal Firefighter Engine | 1 |
| Senior Fire Inspector | 4 | Seasonal Firefighter Crew | 1 |
| Wildland Firefighter | 3 | Lateral Firefighter-Paramedic | 1 |
| Firefighter/Paramedic | 2 | Firefighter/Paramedic Hires And Laterals | 1 |
| Fire Inspector | 2 | Firefighter/First Responder Navy | 2 |
| Aircraft And Firefighting Specialist | 2 | Firefighter/First Responder | 1 |
| Volunteer Firefighter | 1 | Firefighter- Volunteer | 1 |
| U S Army Medic | 1 |  |  |
| Source: Burning Glass |

# Industry Concentration

**Table 5. Industries hiring Firefighter Workers in Bay Region**

| **Industry – 6 Digit NAICS (No. American** **Industry Classification) Codes** | **Jobs in Industry (2019)** | **Jobs in Industry (2024)** | **% Change (2019-24)** | **% Occupation Group in Industry (2019)** |
| --- | --- | --- | --- | --- |
| Local Government, Excluding Education and Hospitals | 7869 | 8249 | 5% | 92% |
| All Other Support Services | 139 | 154 | 11% | 2% |
| State Government, Excluding Education and Hospitals | 137 | 146 | 6% | 2% |
| Federal Government, Military | 94 | 92 | -2% | 1% |
| Federal Government, Civilian, Excluding Postal Service | 90 | 92 | 3% | 1% |
| Convention and Trade Show Organizers | 94 | 96 | 3% | 1% |
| Packaging and Labeling Services | 65 | 71 | 10% | 1% |
| Security Guards and Patrol Services | 25 | 28 | 11% | 0% |
| Ambulance Services | 20 | 20 | 0% | 0% |
| Other Scientific and Technical Consulting Services | NA | NA | NA% | 0% |
| Source: EMSI 2020.4 |

**Table 6. Top Employers Posting Firefighter Occupations in Bay Region and North Bay Sub-Region (Dec 2019-Nov 2020)**

| **Employers** | **Bay** | **Employer** | **North Bay** |
| --- | --- | --- | --- |
| National Testing Network | 12 | Daily Dispatch | 6 |
| Johnson Controls Incorporated | 11 | County Marin | 6 |
| Bay Alarm | 11 | National Testing Network | 5 |
| Daily Dispatch | 8 | Johnson Controls Incorporated | 4 |
| Western States Fire Protection | 6 | River Rock Casino | 3 |
| County Marin | 6 | state of california | 2 |
| Bay Alarm Company | 6 | United States Marie Corps | 2 |
| United States Marie Corps | 5 | Thenewstribune Com | 2 |
| Tesla | 5 | City Vallejo | 2 |
| Cintas | 5 | City Napa | 2 |
| Arrow Fire Protection | 4 | Bay Alarm | 2 |
| Statcomm Incorporated | 3 | Us Armed Forces Navy | 1 |
| Siemens | 3 | US Government | 1 |
| River Rock Casino | 3 | Peopleready | 1 |
| Source: Burning Glass |

# Educational Supply

There are two (2) community colleges in the Bay Region issuing 80 awards on average annually (last 3 years ending 2018-19) on TOP TOP 2133.50 - Fire Academy. In the North Bay Sub-Region, there is one (1) community college that issued 78 awards on average annually (last 3 years) on this TOP code.

**Table 7. Community College Awards on TOP 2133.50 - Fire Academy in Bay Region**

| **College** | **Subregion** | **Certificate Low** | **Total** |
| --- | --- | --- | --- |
| Los Medanos | East Bay | 2 | 2 |
| Santa Rosa | North Bay | 78 | 78 |
| **Total** |  | **80** | **80** |
| Source: Data Mart |

*Note: The annual average for awards is 2016-17 to 2018-19.*

# Gap Analysis

Based on the data included in this report, there is a labor market gap in the Bay region with 689 annual openings for the Firefighter occupational cluster and 80 annual (3-year average) awards for an annual undersupply of 609 students. In the North Bay Sub-Region, there is also a gap with 122 annual openings and 78 annual (3-year average) awards for an annual undersupply of 44 students.

# Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 2133.50 - Fire Academy**

| **2017-18** | **Bay** **All CTE Program** | **Solano****All CTE Program** | **State 2133.50** | **Bay 2133.50** | **North Bay 2133.50** | **Solano 2133.50** |
| --- | --- | --- | --- | --- | --- | --- |
| % Employed Four Quarters After Exit | 67% | 69% | 72% | 84% | 100% | NA |
| Median Quarterly Earning Two Quarters After Exit | $11,466 | $8,044 | $23,135 | $31,425 | $16,373 | NA |
| Median % Change in Earning | 31% | 48% | 33% | 12% | 124% | NA |
| % of Students Earning a Living Wage | 53% | 57% | 82% | 90% | 85% | NA |
| Source: Launchboard Pipeline (version available on August 2020) |

# Skills, Certifications and Education

**Table 9. Top Skills for Firefighter Occupations in Bay Region (Dec 2019-Nov 2020)**

| **Skill** | **Posting** | **Skill** | **Posting** |
| --- | --- | --- | --- |
| Repair | 104 | Emergency Services | 18 |
| Fire Protection | 74 | Technical Inspections | 17 |
| Fire Suppression | 52 | Prevention Activities | 16 |
| Customer Service | 39 | Training Programs | 16 |
| Hand Tools | 29 | Medical Emergencies | 15 |
| Cardiopulmonary Resuscitation (CPR) | 26 | Network Testing | 15 |
| HAZMAT | 26 | Incident Command System | 14 |
| Occupational Health and Safety | 23 | Public Health and Safety | 14 |
| Advanced Cardiac Life Support (ACLS) | 22 | Budgeting | 13 |
| Power Tools | 22 | Life Support | 13 |
| Emergency Medical Care | 21 | Lifting Ability | 13 |
| Equipment Moving | 21 | Equipment Maintenance | 12 |
| Scheduling | 21 | Inspection of Safety Equipment and/or Alarm Systems | 12 |
| Wiring | 19 | Predictive / Preventative Maintenance | 12 |
| Source: Burning Glass |

**Table 10. Certifications for Firefighter Occupations in Bay Region (Dec 2019-Nov 2020)**

| **Skill** | **Posting** | **Skill** | **Posting** |
| --- | --- | --- | --- |
| Driver's License | 132 | National Registry of Emergency Medical Technicians (NREMT) | 10 |
| Emergency Medical Technician (EMT) | 74 | Advanced Cardiac Life Support (ACLS) Certification | 10 |
| Fire Fighter I | 56 | Fire Instructor I | 8 |
| Certified Patient Account Technician | 56 | HazMat Awareness | 7 |
| Paramedic Certification | 35 | Pediatric Advanced Life Support (PALS) Certification | 6 |
| Fire Inspector I | 16 | Wildland Firefighter I | 5 |
| Firefighter II | 15 | Fire Officer I | 5 |
| First Aid Cpr Aed | 14 | Backflow Prevention Certification | 5 |
| Fire Inspector II | 12 | Hazardous Materials Certification | 4 |
| Cdl Class C | 11 | Basic Life Saving (BLS) | 4 |
| Source: Burning Glass |

**Table 11. Education Requirements for Firefighter Occupations in Bay Region**

| **Education (minimum advertised)** | **Latest 12 Mos. Postings** | **Percent 12 Mos. Postings** |
| --- | --- | --- |
| High school or vocational training | 152 | 93% |
| Associate's degree | 5 | 3% |
| Bachelor's degree | 6 | 4% |
| Source: Burning Glass |

*Note: 41% of records have been excluded because they do not include a degree level. As a result, the chart below may not be representative of the full sample.*

# Methodology

Occupations for this report were identified by use of skills listed in O\*Net descriptions and job descriptions in Burning Glass. Labor demand data is sourced from Economic Modeling Specialists International (EMSI) occupation data and Burning Glass job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CTE Launchboard and CCCCO Data Mart.

# Sources

O\*Net Online
Labor Insight/Jobs (Burning Glass)
Economic Modeling Specialists International (EMSI)
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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