** Fire Science-Company Officer Occupations**

**Labor Market Information Report**

**Santa Rosa Junior 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 Science-Company Officer workers compared to the demand for this cluster of occupations in the Bay region and in the North Bay sub-region (Marin, Napa, Solano and Sonoma Counties.) There is a projected annual gap of about 399 students in the Bay region and 53 students in the North Bay Sub-Region.

However, the main rationale for the development of the Fire Science Company Officer program at Santa Rosa Junior College is to provide specific education to workers seeking to promote within the fire service and/or to gain knowledge as a Company Officer or supervisor. Since the training is for individuals who are already employed, the traditional supply/demand gap analysis isn’t as relevant, because demand already exists.

This report also provides student outcomes data on employment and earnings for programs on TOP 2133.00 - Fire Technology 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 Santa Rosa Junior College and in the region.

# Introduction

This report profiles Fire Science-Company Officer Occupations in the 12 county Bay region and in the North Bay sub-region for the modification of an existing program at Santa Rosa Junior College.

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| --- |
| * **Firefighters (SOC 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: 61% |
|  |
| * **Fire Inspectors and Investigators (SOC 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: 51*%* |
|  |
| * **First-Line Supervisors of Fire Fighting** **and Prevention Workers (SOC 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: 57*%* |
|  |
| * **Forest Fire Inspectors and Prevention** **Specialists (SOC 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: 51*%* |

# Occupational Demand

**Table 1. Employment Outlook for Fire Science-Company Officer Occupations in Bay Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation | 2018 Jobs | 2023 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Average Annual Open-ings | 25% Hourly Wage | Median Hourly Wage |
| Firefighters | 8,480 | 8,894 | 414 | 5% | 3,225 | 645 | $33.03 | $44.59 |
| Fire Inspectors and Investigators | 154 | 163 | 9 | 6% | 89 | 18 | $36.16 | $47.74 |
| First-Line Supervisors of Fire Fighting and Prevention Workers | 898 | 961 | 63 | 7% | 363 | 73 | $41.09 | $70.07 |
| Forest Fire Inspectors and Prevention Specialists | 69 | 78 | 8 | 12% | 45 | 9 | $34.42 | $44.46 |
| **Total** | **9,601** | **10,096** | **495** | **5%** | **3,721** | **744** | **$33.84** | **$47.02** |

*Source: EMSI 2019.3*

**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 Science-Company Officer Occupations in North Bay Sub-Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation | 2018 Jobs | 2023 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Average Annual Open-ings | 25% Hourly Wage | Median Hourly Wage |
| Firefighters | 1,444 | 1,502 | 58 | 4% | 536 | 107 | $27.88 | $38.71 |
| Fire Inspectors and Investigators | <10 | <10 |  |  | <10 | Insf. Data | Insf. Data | Insf. Data |
| First-Line Supervisors of Fire Fighting and Prevention Workers | 163 | 173 | 10 | 6% | 64 | 13 | $40.88 | $59.32 |
| Forest Fire Inspectors and Prevention Specialists | <10 | <10 |  |  | <10 | Insf. Data | Insf. Data | Insf. Data |
| **TOTAL** | **1,607** | **1,675** | **68** | **4%** | **600** | **120** | **$29.20** | **$40.80** |

*Source: EMSI 2019.3*

**North Bay Sub-Region** includes Marin, Napa, Solano and Sonoma Counties

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

**Table 3. Number of Job Postings by Occupation for latest 12 months (December 2018 - November 2019)**

| Occupation | Bay Region | North Bay |
| --- | --- | --- |
| Municipal Fire Fighting and Prevention Supervisors | 135 | 41 |
| Municipal Firefighters | 128 | 21 |
| Forest Fire Inspectors and Prevention Specialists | 33 | 0 |
| Forest Fire Fighting and Prevention Supervisors | 23 | 1 |
| Forest Firefighters | 21 | 1 |
| Fire Investigators | 1 | 0 |
| **Total** | **341** | **64** |

*Source: Burning Glass*

**Table 4a. Top Job Titles for Fire Science-Company Officer Occupations for latest 12 months (December 2018 - November 2019) Bay Region**

|  |  |  |  |
| --- | --- | --- | --- |
| Common Title | Bay | Common Title | Bay |
| Firefighter | 106 | Deputy Chief | 4 |
| Battalion Chief | 25 | Chief Deputy Defender | 4 |
| Fire Chief | 21 | Captain, Promotional | 4 |
| Deputy Marshal | 10 | See Listing | 3 |
| Ranger | 8 | Fighter | 3 |
| Mobile Patrol Lead | 6 | Assistant Marshal | 3 |
| Fire Marshal | 6 | Utility Forester, Tree | 2 |
| Commander | 6 | Two Open Positions | 2 |
| Swimmer | 5 | Strategic Officer | 2 |
| Inventory Management Technician | 5 | Senior Sdet - Cloud Services | 2 |
| Senior Specialist | 4 | Item Listing Professional | 2 |
| Medic/Specialist | 4 | Incident Commander | 2 |
| Fire Fighter | 4 | Fire Technician | 2 |
| Executive Assistant | 4 | Fire Lieutenant | 2 |

**Table 4b. Top Job Titles for Fire Science-Company Officer Occupations for latest 12 months (December 2018 - November 2019) North Bay Sub-Region**

|  |  |  |  |
| --- | --- | --- | --- |
| Common Title | North Bay | Common Title | North Bay |
| Firefighter | 17 | Executive Assistant | 1 |
| Battalion Chief | 16 | Division Field Chief | 1 |
| Fire Chief | 7 | Detail Lead | 1 |
| Fire Fighter | 4 | Deputy Chief, Promotional | 1 |
| Chief Deputy Defender | 4 | Deputy Chief | 1 |
| Deputy Division Chief | 2 | Chief, Safety | 1 |
| Attorney | 2 | Chief Deputy Defender, Promotional | 1 |
| Yard Lead/Dispatch | 1 | Chief Deputy Clerk, Board | 1 |
| Registrar | 1 | Chief | 1 |
| Fire Lieutenant | 1 | Deputy Chief | 1 |

*Source: Burning Glass*

# Industry Concentration

**Table 5. Industries hiring Fire Science-Company Officer Workers in Bay Region**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Industry – 6 Digit NAICS (No. American Industry Classification) Codes | Jobs in Industry (2018) | Jobs in Industry (2022) | % Change (2018-22) | % in Industry (2018) |
| Local Government, Excluding Education and Hospitals (903999) | 8,887 | 9,340 | 5% | 93% |
| State Government, Excluding Education and Hospitals (902999) | 155 | 166 | 7% | 2% |
| All Other Support Services (561990) | 123 | 123 | 0% | 1% |
| Federal Government, Civilian, Excluding Postal Service (901199) | 98 | 97 | -1% | 1% |

*Source: EMSI 2019.3*

**Table 6. Top Employers Posting Fire Science-Company Officer Occupations in Bay Region and North Bay Sub-Region (December 2018 - November 2019)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Employer | Bay | Employer | Bay | Employer | North Bay |
| US Army | 39 | Vmware Incorporated | 2 | State of California | 12 |
| Daily Dispatch | 18 | UC San Diego | 2 | County Sonoma | 7 |
| State of California | 14 | US Navy | 2 | Daily Dispatch | 6 |
| County Sonoma | 7 | Super League Gaming | 2 | River Rock Casino | 4 |
| United States Naval Services | 6 | Splunk, Inc | 2 | Cordelia Fire Protection District | 3 |
| County Alameda | 6 | Splunk | 2 | US Government | 1 |
| SOS Security | 5 | Sfmta | 2 | US Air Force | 1 |
| County Contra Costa | 5 | Santa Clara County Fire Department | 2 | County of Napa | 1 |
| City Santa Clara | 5 | San Ramon Valley Fire Protection District | 2 | County Of Sonoma Ca | 1 |
| River Rock Casino | 4 | Risk Management Solutions | 2 | City Vallejo | 1 |
| City Santa Cruz | 4 | Republic Bancorp | 2 | City San Rafael | 1 |
| Zero2Sold | 3 | Redwood City Hall Office | 2 | Central Valley | 1 |
| University California | 3 | Premier Security | 2 | California State Teachers' Retirement System | 1 |
| Salesforce | 3 | Navy | 2 | Airstream Adventures Northwest | 1 |
| National Testing Network | 3 | Moraga Orinda Fire District | 2 | 0 | 0 |
| Equity Lifestyle Properties | 3 | Monterey County California | 2 | 0 | 0 |
| Cordelia Fire Protection District | 3 | Monterey County | 2 | 0 | 0 |

*Source: Burning Glass*

# Educational Supply

There are 11 community colleges in the Bay Region issuing 345 awards on average annually (last 3 years) on TOP 2133.00 - Fire Technology. There are two colleges in the North Bay Sub-Region issuing 67 awards on average annually (last 3 years) on this TOP code.

**Table 7. Awards on TOP 2133.00 - Fire Technology in Bay Region**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| College | Sub-Region | Associates | Certificate 18+ units | Certificate Low unit | Total |
| Cabrillo College | Santa Cruz-Monterey | 17 | 1 |  | 18 |
| Chabot College | East Bay | 12 | 3 |  | 15 |
| City College of San Francisco | Mid-Peninsula | 16 | 27 | 15 | 58 |
| College of San Mateo | Mid-Peninsula | 20 | 16 |  | 36 |
| Gavilan College | Santa Cruz-Monterey |  | 4 |  | 4 |
| Las Positas College | East Bay | 10 | 12 |  | 22 |
| Los Medanos College | East Bay | 23 | 16 | 51 | 90 |
| Mission College | Silicon Valley | 29 |  |  | 29 |
| Monterey Peninsula College | Santa Cruz - Monterey | 3 | 3 |  | 6 |
| Santa Rosa Junior College | North Bay | 36 | 19 |  | 55 |
| Solano College | North Bay | 9 | 3 |  | 12 |
| **Total Bay Region** | | **175** | **104** | **66** | **345** |
| **Total North Bay Sub-Region** | | **45** | **22** | **0** | **67** |

# *Source: Data Mart*

Note: The annual average for awards is 2015-16 to 2017-18.

# Gap Analysis

Based on the data included in this report, there is a labor market gap in the Bay region with 744 annual openings for the Fire Science-Company Officer occupational cluster and 345 annual (3-year average) awards for an annual undersupply of 399 students. In the North Bay Sub-Region, there is also a gap with 120 annual openings and 67 annual (3-year average) awards for an annual undersupply of 53 students.

In addition, the main rationale for the development of the Fire Science Company Officer program at Santa Rosa Junior College is to provide specific education to workers seeking to promote within the fire service and/or to gain knowledge as a Company Officer or supervisor. Since the training is for individuals who are already employed, the traditional supply/demand gap analysis isn’t as relevant, because demand already exists.

# Student Outcomes

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 2015-16 | Bay  (All CTE Programs) | Santa Rosa Junior College (All CTE Programs) | State (2133.00) | Bay (2133.00) | North Bay (2133.00) | Santa Rosa Junior College (2133.00) |
| % Employed Four Quarters After Exit | 74% | 76% | 79% | 82% | 83% | 82% |
| Median Quarterly Earnings Two Quarters After Exit | $10,550 | $9,839 | $19,779 | $22,327 | $12,941 | $13,323 |
| Median % Change in Earnings | 46% | 50% | 20% | 30% | 42% | 39% |
| % of Students Earning a Living Wage | 63% | 62% | 79% | 86% | 70% | 73% |

*Source: Launchboard Pipeline (version available on 12/23/19)*

# Skills, Certifications and Education

**Table 9. Top Skills for Fire Science-Company Officer Occupations in Bay Region (December 2018 - November 2019)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Skill | Postings | Skill | Postings | Skill | Postings |
| Fire Protection | 110 | Staff Management | 24 | Administrative Support | 10 |
| Fire Suppression | 50 | Treadmill Test | 23 | Appointment Setting | 10 |
| Repair | 49 | Life Support | 18 | Conflict Management | 10 |
| Budgeting | 38 | Telecommunications | 18 | Policy Implementation | 10 |
| Occupational Health and Safety | 37 | Advanced Cardiac Life Support (ACLS) | 17 | Local Government | 9 |
| Self-Contained Breathing Apparatus (SCBA) | 30 | Public Health and Safety | 17 | Patient Care | 9 |
| Equipment Operation | 28 | Business Administration | 15 | Personnel Management | 9 |
| Cardiopulmonary Resuscitation (CPR) | 27 | Emergency Medical Care | 15 | Root Cause Analysis | 9 |
| Customer Service | 26 | Customer Contact | 13 | Calculation | 8 |
| Emergency Services | 26 | Chemistry | 12 | Environmental Science | 8 |
| HAZMAT | 26 | Medical Emergencies | 12 | Information Systems | 8 |
| Scheduling | 26 | Project Management | 12 | Legal Research | 8 |
| Public administration | 25 | Training Programs | 12 | Program Development | 8 |
| Exercise Treadmill | 24 | Trauma | 12 | Sales | 8 |
| Spirometry | 24 | Prevention Activities | 11 | Accounting | 7 |

*Source: Burning Glass*

**Table 10. Certifications for Fire Science-Company Officer Occupations in Bay Region (December 2018 - November 2019)**

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

|  |  |  |  |
| --- | --- | --- | --- |
| Certification | Postings | Certification | Postings |
| Driver's License | 93 | Driver/Operator Pumper | 8 |
| Emergency Medical Technician (EMT) | 66 | Cdl Class C | 8 |
| Firefighter | 40 | Licensed Attorney | 7 |
| Firefighter I | 35 | Driver/Operator Mobile Water Supply | 7 |
| Certified Patient Account Technician | 29 | American Heart Association Certification | 7 |
| Paramedic Certification | 28 | Aerial Rescue and Fire Fighting (ARFF) | 7 |
| First Aid Cpr Aed | 20 | IT Infrastructure Library (ITIL) Certification | 6 |
| Firefighter II | 11 | Security Clearance | 5 |
| Fire Inspector I | 10 | HazMat Awareness | 5 |
| National Registry of Emergency Medical Technicians (NREMT) | 9 | Fire Officer | 5 |
| Fire Inspector II | 9 | Fire Instructor II | 5 |
| Airport Firefighter | 9 | Certified Public Accountant (CPA) | 5 |

*Source: Burning Glass*

**Table 11. Education Requirements for Fire Science-Company Officer Occupations in Bay Region**

Note: 52% 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.

|  |  |  |
| --- | --- | --- |
| Education (minimum advertised) | Latest 12 Mos. Postings | Percent 12 Mos. Postings |
| High school or vocational training | 96 | 59% |
| Associate Degree | 10 | 6% |
| Bachelor’s Degree or Higher | 56 | 35% |

*Source: Burning Glass*

# 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/](http://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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