**Firefighter Occupation**

**Labor Market Information Report**

Prepared by the San Francisco Bay Center of Excellence

for Labor Market Research

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# Recommendation

As stated in their application, the new Firefighter Academy Skills Certificate proposed by Santa Rosa Junior College (SJRC) is intended for both pre-service fire students and fire service professionals (volunteer and paid) to train in the approved state curriculum. Therefore, when determining whether a labor market gap exists to warrant the addition of this new Certificate of Achievement, there is additional labor market information to consider. Comparing traditional annual openings at the regional level for firefighters to the supply shows an annual undersupply in the region of 83. However, there is an annual oversupply of 90 in the North Bay sub-region (Marin, Napa, Solano and Sonoma counties) since awards on both TOP 2133.50 Fire Academy and TOP 2133.00 Fire Technology should be included in the supply numbers.

However, the number of currently employed firefighters in the North Bay is also important to gauge demand, since incumbent firefighters may need this certificate. With 1,025 firefighters employed in 2017 according to the EMSI 2017.4 data in the North Bay, it appears that there could be significant demand for this certificate for incumbent fire service professionals.

This report also provides student outcomes data on employment and earnings for SJRC compared to other community colleges programs in the region and state and compared to all programs at the college and in the region. It is recommended that this data be reviewed to better understand how SJRC students on TOP 2133.50 Fire Academy and TOP 2133.00 Fire Technology are doing compared to students at the regional and state level in the same program areas.

# Introduction

This report profiles the Firefighter occupation in the 12 county Bay Region and the North Bay for a new Firefighter Academy Skills Certificate.

* **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:* 62%

# Occupational Demand

**Table 1. Employment Outlook for Firefighters in Bay Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation  | 2016 Jobs | 2021 Jobs | 5-Yr Change | 5-Yr % Change | 5-Year Openings | Annual Openings | 10% Hourly Wage | MedianHourly Wages |
| **Firefighters** | **6,869** | **7,306** | **437** | **6%** | **2,284** | **547** | **$22.80** | **$40.25** |

*Source: EMSI 2017.4***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 Firefighters in North Bay Sub-Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation  | 2016 Jobs | 2021 Jobs | 5-Yr Change | 5-Yr % Change | 5-Year Openings | Annual Openings | 10% Hourly Wage | MedianHourly Wages |
| **Firefighters** | **1,025** | **1,086** | **61** | **6%** | **338** | **82** | **$15.35** | **$32.53** |

***Source: EMSI 2017.4*North 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 (Jan 2017 – Dec 2017)**

Note: Online postings for firefighters are not very common in the Bay Region as shown by the numbers in the table below. However, job titles, employers, skills and certificates from these postings are provided in the report since there are no other currently available data sources to provide this kind of information.

|  |  |  |
| --- | --- | --- |
| **Occupations 8 digit SOC level** | **Bay Region** | **North Bay** |
| Municipal Firefighters (33-2011.01) | 53 | 11 |
| Forest Firefighters (33-2011.02) | 8 | 0 |
| **Total** | **61** | **11** |

*Source: Burning Glass*

**Table 4. Top Job Titles for Firefighters for latest 12 months (Jan 2017 – Dec 2017)**

|  |  |  |
| --- | --- | --- |
| Common Title | Bay Region | North Bay |
| Firefighter | 39 | 10 |
| Fire Technician  | 4 | 0 |

*Source: Burning Glass*

# Industry Concentration

**Table 5. Industries hiring Firefighters in Bay Region**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Industry – 6 Digit NAICS (North American Industry Classification) Codes** | **Jobs in Industry (2016)** | **Jobs in Industry (2021)** | **% Change (2016-21)** | **% in Industry (2016)** |
| Local Government, Excluding Education and Hospitals (903999) | 6,454 | 6,866 | 6% | 93.9% |
| All Other Support Services (561990) | 82 | 74 |  (10%) | 1.2% |
| Federal Government, Civilian, Excluding Postal Service (901199) | 78 | 78 | 0% | 1.1% |
| State Government, Excluding Education and Hospitals (902999) | 76 | 79 | 4% | 1.1% |
| Convention and Trade Show Organizers (561920) | 67 | 78 | 16% | 1.0% |
| Packaging and Labeling Services (561910) | 37 | 48 | 30% | 0.5% |
| R&D in the Physical, Engineering & Life Sciences (except Nantechnology & Biotech) (541715) | 12 | 12 | 0% | 0.2% |

*Source: EMSI 2017.4*

**Table 6. Top Employers Posting Jobs in Bay Region and North Bay Sub-Region for latest 12 months (Jan 2017 – Dec 2017)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Employer** | **Bay** | **Employer** | **North Bay** |
| Department of The Army | 6 | National Park Service | 4 |
| National Park Service | 4 | River Rock Casino | 1 |
| City of Palo Alto | 3 | Department of the Interior | 1 |
| SF Public Utilities Commission | 3 | City of Vallejo | 1 |
| Santa Clara County Fire Department | 3 | City of Calistoga | 1 |

*Source: Burning Glass*

# Educational Supply

In the Bay region, there are two community colleges issuing 24 awards annually on TOP 2133.50 Fire Academy and 10 colleges issuing 440 awards annually on TOP 2133.00 Fire Technology.

In the North Bay Sub-Region, SRJC is the only college community colleges issuing awards annually on TOP 2133.50 Fire Academy, issuing 23 awards on average over the past three years. There are two colleges issuing 149 awards annually on TOP 2133.00 Fire Technology in the North Bay.

**Table 7a. Number of Certificates and Headcount on 2133.50 Fire Academy**

|  |  |  |  |
| --- | --- | --- | --- |
| College | Sub-Region | CC Headcount (2015-16) | Certificates or Other Credit Awards (Annual Average 2014-17) |
| Chabot | East Bay | 34 | 0 |
| Foothill | Silicon Valley | 368 | 0 |
| Hartnell | SC & Monterey | 547 | 0 |
| Merritt | East Bay | 85 | 0 |
| Los Medanos | East Bay | 34 | 1 |
| Mission | Silicon Valley | 41 | 0 |
| Monterey | SC & Monterey | 90 | 0 |
| San Mateo | Mid-Peninsula | 63 | 0 |
| Santa Rosa | North Bay | 73 | 23 |
| **Total for Bay Region** | **1,335** | **24** |
| **Total for North Bay** | **73** | **23** |

# *Source: Data Mart and Launchboard*

**Table 7b. Number of Degrees, Certificates and Headcount on 2133.00 Fire Technology**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| College | Sub-Region | CC Headcount (2015-16) | Associate Degrees | Certificates or Other Credit Awards | Total Awards (Annual Average 2014-17) |
| Cabrillo | SC & Monterey | 1,138 | 20 | 1 | 21 |
| Chabot | East Bay | 210 | 12 | 2 | 14 |
| Gavilan | Silicon Valley | 1,112 | 0 | 0 | 0 |
| Las Positas | East Bay | 222 | 10 | 11 | 21 |
| Los Medanos | East Bay | 302 | 24 | 63 | 87 |
| Mission | Silicon Valley | 445 | 27 | 0 | 27 |
| Monterey | SC & Monterey | 553 | 2 | 2 | 4 |
| Ohlone | East Bay | 106 | 0 | 0 | 0 |
| San Francisco | Mid-Peninsula | 415 | 14 | 56 | 70 |
| San Mateo | Mid-Peninsula | 233 | 24 | 23 | 47 |
| Santa Rosa | North Bay | 646 | 32 | 102 | 134 |
| Solano | North Bay | 144 | 10 | 5 | 15 |
| **Total for Bay Region** | **5,526** | **175** | **265** | **440** |
| **Total for North Bay** | **789** | **42** | **107** | **149** |

# *Source: Data Mart and Launchboard*

# Gap Analysis

As stated in the Recommendation section above, since this new certificate intends to serve both pre-service students and incumbent firefighters, additional labor market data is important for the gap analysis. Since only two community colleges are currently issuing certificates on 2133.50 Fire Academy, then it seems necessary to include awards on 2133.00 Fire Technology for supply determinations. There are 547 annual openings in the Bay region with 464 annual awards for a gap of 83. In the North Bay there are 82 annual openings with 172 annual awards for an oversupply of 90. However, with over 1,000 firefighters currently employed in the North Bay from the EMSI 2017.4 data set for 2017, it appears that there could be significant demand for this certificate for incumbent fire service professionals. In addition, since this certificate is also targeting volunteer firefighters, who may not be captured in the EMSI data, then the demand may be even greater.

# Student Outcomes

Looking at Launchboard for employment outcomes data shows that students who took courses on the Fire Academy TOP code 2133.50 at Santa Rosa Junior College did well in terms of employment outcomes as compared with students in the region or state on that TOP code or with students across all SJRC programs in 2014-15. The two tables below summarize those outcomes for TOP 2133.50 Fire Academy and TOP 2133.00 Fire Technology program areas. The following are highlights for some of the results in Table 8a for TOP 2133.50 Fire Academy:

* Students, who took courses on TOP 2133.50 at SJRC, were employed four quarters after exit at higher rates (88% vs 71%) and earned more money (80% more) than students who took courses across all TOP codes at SJRC.
* Median earnings two quarters after exit were significantly lower for SJRC students who took courses on TOP 2133.50 than compared to the region or state on that same TOP code.

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **2014-15** | **Bay Region (All Programs)** | **Santa Rosa (All Programs** | **State (2133.50)** | **Bay Region (2133.50)** | **Santa Rosa (2133.50)** | **Top Performing College in Bay Region (2133.50)** |
| % Employed Four Quarters After Exit | 68% | 71% | 86% | 84% | 88% | Chabot | 100% |
| Median Earnings Two Quarters After Exit | $12,640 | $9,200 | $27,330 | $29,285 | $16,570 | Foothill | $38,625 |
| Median % Change in Earnings | 37% | 39% | 15% | 25% | 52% | Monterey | 211% |
| % of Students Earning a Living Wage | 51% | 51% | 80% | 85% | Insufficient data to calculate | Foothill | 90% |

*Source: Launchboard*

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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **2014-15** | **Bay Region (All Programs)** | **Santa Rosa (All Programs** | **State (2133.00)** | **Bay Region (2133.00)** | **Santa Rosa (2133.00)** | **Top Performing College in Bay Region (2133.00)** |
| % Employed Four Quarters After Exit | 68% | 71% | 76% | 80% | 81% | Gavilan & Solano | 88% |
| Median Earnings Two Quarters After Exit | $12,640 | $9,200 | $13,695 | $12,715 | $14,960 | Gavilan | $22,320 |
| Median % Change in Earnings | 37% | 39% | 37% | 60% | 46% | Las Positas | 228% |
| % of Students Earning a Living Wage | 51% | 51% | 64% | 60% | 69% | Gavilan | 85% |

*Source: Launchboard*

# Skills & Certifications

**Table 9. Top Skills and Certifications for Firefighters in the Bay Region (Dec 2017 – Jan 2017)**

Note: 43% 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.

|  |  |  |  |
| --- | --- | --- | --- |
| **Skill** | **Latest 12 Mos. Postings** | **Certification**  | **Latest 12 Mos. Postings** |
| Inspection | 16 | Emergency Medical Technician (EMT) | 23 |
| Life Support | 11 | Firefighter | 15 |
| Fire Suppression | 9 | Certified Patient Account Technician | 12 |
| Cardiopulmonary Resuscitation (CPR) | 7 | Paramedic Certification | 11 |
| Emergency Medical Care | 7 | Commercial Driver’s License | 5 |
| Public Health and Safety | 5 | First Aid CPR AED | 4 |
|  |  | National Registry of Emergency Medical Technicians (NREMT) | 4 |

*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, 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

For more information, please contact:

* Karen Beltramo, Data Research Analyst, for Bay Area Community College Consortium (BACCC) and Centers of Excellence (CoE), karen@baccc.net or (831) 332-1253
* John Carrese, Director San Francisco Bay Center of Excellence for Labor Market Research (hosted at City College of San Francisco), jcarrese@ccsf.edu or (415) 452-5529