**Firefighter Occupations**

**Labor Market Information Report**

Prepared by the San Francisco Bay Center of Excellence

for Labor Market Research

November 2017

# Recommendation

Based on all available data included in this report, there appears to be an undersupply of Firefighters (and Fire Inspectors and Investigators) compared to the demand for these occupations in the Bay region and the East Bay sub-region. The annual gap between demand and supply is about 565 in the region and 145 in the East Bay sub-region. This undersupply warrants the addition of the proposed Fire Academy program.

This report also provides student outcomes data on employment and earnings for regional and sub-region Fire Academy programs compared to other community colleges in the state with Fire Academy programs. It is recommended that this data be reviewed to better understand how the regional and sub-regional student outcomes compare to other programs in the state.

# Introduction

This report profiles Firefighting Occupations in the 12 county Bay Region and the East Bay (Alameda and Contra Costa counties) to help inform the decision regarding starting a new Fire Academy program at Las Positas College.

* **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%

* **Fire Inspectors and Investigators (SOC 33-2021)**: Inspect buildings and equipment to detect fire hazards and enforce state and local regulations. Conduct investigations to determine causes 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 Fire Academy Occupations in Bay Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation | 2016 Jobs | 2021 Jobs | 5-Yr Change | 5-Yr % Change | 5-Year | Annual | 10% | Median |
| Openings | | Hourly Wages | |
| Firefighters | 6,871 | 7,342 | 471 | 7% | 2,841 | 568 | $22.80 | $40.25 |
| Fire Inspectors and Investigators | 182 | 199 | 17 | 9% | 115 | 23 | $29.45 | $51.75 |
| **Total** | **7,053** | **7,541** | **488** | **7%** | **2,957** | **591** | **$22.95** | **$40.55** |

*Source: EMSI 2017.3***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 Academy Occupations in East Bay Sub-Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation | 2016 Jobs | 2021 Jobs | 5-Yr Change | 5-Yr % Change | 5-Year | Annual | 10% | Median |
| Openings | | Hourly Wage | |
| Firefighters | 1,827 | 1,906 | 79 | 4% | 702 | 140 | $31.25 | $44.75 |
| Fire Inspectors and Investigators | 49 | 53 | 4 | 8% | 30 | 6 | $25.15 | $50.10 |
| **Total** | **1,876** | **1,959** | **83** | **4%** | **731** | **146** | **$31.10** | **$44.90** |

***Source: EMSI 2017.3*East Bay Sub-Region** includes Alameda and Contra Costa Counties

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

**Table 3. Number of Job Postings by Occupation for latest 12 months (Nov. 2016 – Oct. 2017)**

|  |  |  |
| --- | --- | --- |
| Occupation | Bay Region | East Bay |
| Municipal Firefighters (33-2011.01) | 47 | 12 |
| Fire Inspectors (33-2021.01) | 41 | 9 |
| Forest Firefighters (33-2011.02) | 7 | 2 |
| **Total** | **95** | **23** |

*Source: Burning Glass*

**Table 4. Top Job Titles for Fire Academy Occupations for latest 12 months (Nov. 2016 – Oct. 2017)**

|  |  |  |
| --- | --- | --- |
| Common Title | Bay Region | East Bay |
| Firefighter | 34 | 8 |
| Fire and Life Safety Inspector | 7 | 2 |
| Fire Systems Inspector | 3 | 0 |
| Fire Technician | 3 | 0 |

*Source: Burning Glass*

# Industry Concentration

**Table 5. Industries hiring Fire Academy occupations 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) | 6,605 | 7,064 | 7% | 93.7% |
| State Government, Excluding Education and Hospitals (902999) | 84 | 87 | 4% | 1.2% |
| All Other Support Services (561990) | 83 | 79 | (5%) | 1.2% |
| Federal Government, Civilian, Excluding Postal Service (901199) | 79 | 78 | (1%) | 1.1% |
| Convention and Trade Show Organizers (561920) | 67 | 79 | 18% | 1.0% |
| Packaging and Labeling Services (561910) | 37 | 46 | 24% | 0.5% |
| R&D in the Physical, Engineering & Life Sciences except Biotech (541712) | 13 | 14 | 8% | 0.2% |

*Source: EMSI 2017.3*

**Table 6. Top Employers Posting Jobs in Bay Region for latest 12 months (Nov. 2016 – Oct. 2017)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Employer** | **Bay** | **East Bay** | **Employer** | **Bay** | **East Bay** |
| Johnson Controls Incorporated | 8 | 5 | City Of Palo Alto | 3 | 0 |
| Api Group Incorporated | 5 | 0 | Jensen Hughes, Inc | 3 | 0 |
| Department Of The Army | 4 | 0 | San Francisco Public Utilities Commission | 3 | 0 |
| National Park Service | 4 | 0 | Santa Clara County Fire Department | 3 | 0 |
| Tyco | 4 | 2 | University Of California San Francisco | 3 | 0 |

*Source: Burning Glass*

# Educational Supply

**Table 7. Number of Degrees and Certificates Conferred by Postsecondary Institutions and Headcount on 2133.50 Fire Academy**

|  |  |  |  |
| --- | --- | --- | --- |
| College | Sub-Region | CC Headcount | Certificates or Other Credit Awards |
| 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-Penisula | 63 | 0 |
| Santa Rosa | North Bay | 73 | 23 |
| **Total for Bay Region** | | **1,335** | **24** |
| **Total for East Bay** | | **153** | **1** |

# *Source: Data Mart and Launchboard*

NOTE: Headcount of students who took one or more courses and Number of students who received an award is for 2015-16. Certificates for Community Colleges is the annual average for 2014-17. There are no Associate Degrees on this TOP code.

# Gap Analysis

The labor market gap is large in the Bay region for these occupations with annual openings of 591 and annual supply of 24 community college students. This represents an undersupply of about 567 students. In the East Bay sub-region, the gap is also significant, with annual openings of 146 and annual supply of one award on TOP 2133.50 Fire Academy. This represents an undersupply of 145 students.

However, the supply number is inconclusive since there are nine colleges with students taking courses on the TOP code 2133.50 Fire Academy but only two of those colleges issuing awards on that TOP code. The other awards for those seven colleges are on 2133.00 Fire Technology for a total of 179 annual degrees and certificates. If you add those to the regional supply of 24, then you still have an undersupply of 388 in the Bay region and 45 in the East Bay.

# Student Outcomes

Looking at Launchboard for employment outcomes data shows that students who took courses on the Fire Academy TOP code 2133.50 in the Bay Region did well in terms of employment outcomes as compared with the state or with students on all regional programs in 2014-15. The following highlights some of the results in Table 8:

* 85% of students who exited and took courses on that TOP code earned a living wage in 2014-15 compared to 80% at the state level in Fire Academy and 51% in the Bay Region across all program areas.
* 100% of Chabot Fire Academy students were employed four quarters after exit.
* In the East Bay, students who took courses on that TOP code earned far lower quarterly wages two quarters after exit at $9,190 vs $29,285 for the region.
* Foothill’s students earned the highest quarterly wages in 2014-15 in the region at $38,625 as well as the highest percentage of students earning a living wage at 90%.

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 2133.50 Fire Academy for 2014-15**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **2014-15** | **Bay Region (All Programs)** | **State (2133.50)** | **Bay Region (2133.50)** | **East Bay (2133.50)** | **Top Performing College in Bay Region (2133.50)** | |
| % Employed Four Quarters After Exit | 68% | 86% | 84% | 91% | Chabot | 100% |
| Median Earnings Two Quarters After Exit | $12,640 | $27,330 | $29,285 | $9,190 | Foothill | $38,625 |
| Median % Change in Earnings | 37% | 15% | 25% | 87% | Monterey | 211% |
| % of Students Earning a Living Wage | 51% | 80% | 85% | 61% | Foothill | 90% |

*Source: Launchboard*

# Skills & Certifications

**Table 9. Top Skills and Certifications for Fire Academy Occupations in the Bay Region (Nov 2016 – Oct 2017)**

Note: 53% 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** | **Skill** | **Latest 12 Mos. Postings** | **Certification** | **Latest 12 Mos. Postings** |
| Inspection | 46 | Microsoft Excel | 11 | Emergency Medical Technician (EMT) | 22 |
| Repair | 24 | Life Support | 9 | Firefighter | 14 |
| Schematic Diagrams | 16 | Microsoft Office | 8 | Certified Patient Account Technician | 11 |
| Fire Protection | 14 | Project Management | 8 | Paramedic Certification | 10 |
| Fire Suppression | 14 | Cardiopulmonary Resuscitation (CPR) | 7 | First Aid CPR AED | 6 |
| Wiring | 13 | Customer Service | 7 | NICET II | 6 |
| Hand Tools | 12 | Microsoft Word | 7 | Commercial Driver’s License | 5 |
| Electrical Systems | 11 | Public Health and Safety | 7 | Fire Inspector | 5 |

*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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