**Fire Prevention Occupations**

**Labor Market Information Report**

**Mission College**

Prepared by the San Francisco Bay Center of Excellence

for Labor Market Research

August 2020

# Recommendation

Based on all available data, there appears to be an undersupply of Fire Prevention workers compared to the demand for this cluster of occupations in the Bay region and in the Silicon Valley sub-region (Santa Clara County). There is a projected annual gap of about 351 students in the Bay region and 104 students in the Silicon Valley Sub-Region.

This report also 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 Mission College and in the region.

This report profiles Fire Prevention Occupations in the 12 county Bay region and in the Silicon Valley sub-region for a proposed new program recommendation at Mission College.

|  |
| --- |
| * **Firefighters (33-2011):** Control and extinguish firesor 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 (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*%* |

**Occupational Demand**

**Table 1. Employment Outlook for Fire Prevention Occupations in Bay Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation | 2019 Jobs | 2024 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Average Annual Open-ings | 25% Hourly Wage | Median Hourly Wage |
| Firefighters | 8,355 | 8,780 | 426 | 5% | 3,337 | 667 | $32.29 | $45.32 |
| Fire Inspectors and Investigators | 233 | 249 | 17 | 7% | 128 | 26 | $42.75 | $53.44 |
| **Total** | **8,587** | **9,030** | **442** | **5%** | **3,465** | **693** | **$32.57** | **$45.54** |

*Source: EMSI 2020.3*

**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 Prevention Occupations in Silicon Valley Sub-Region**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Occupation | 2019 Jobs | 2024 Jobs | 5-Yr Change | 5-Yr % Change | 5-Yr Open-ings | Average Annual Open-ings | 25% Hourly Wage | Median Hourly Wage |
| Firefighters | 1,592 | 1,703 | 111 | 7% | 670 | 134 | $43.97 | $55.72 |
| Fire Inspectors and Investigators | 66 | 71 | 5 | 7% | 37 | 7 | $42.66 | $55.06 |
| **TOTAL** | **1,658** | **1,774** | **116** | **7%** | **707** | **141** | **$43.92** | **$55.70** |

*Source: EMSI 2020.3*

**Silicon Valley Sub-Region** includes Santa Clara County

### Job Postings in Bay Region and Silicon Valley Sub-Region

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

| Occupation | Bay Region | Silicon Valley Sub-Region |
| --- | --- | --- |
| Municipal Firefighters | 143 | 20 |
| Fire Inspectors | 135 | 19 |
| Forest Firefighters | 18 | 7 |
| Fire Investigators | 1 | 0 |
| **TOTAL** | **297** | **46** |

*Source: Burning Glass*

**Table 4a. Top Job Titles for Fire Prevention Occupations for latest 12 months (July 2019 - June 2020) Bay Region**

|  |  |  |  |
| --- | --- | --- | --- |
| Common Title | Bay | Common Title | Bay |
| Firefighter | 117 | Inspector/Technician | 3 |
| Alarm Inspector | 22 | Fire Sprinkler Specialist | 3 |
| Inspector, Alarm | 12 | Blood Drive Volunteers | 3 |
| Fire Inspector | 12 | Alarm Systems Inspector | 3 |
| Fire Captain | 10 | Senior Specialist | 2 |
| Specialist | 7 | Mobile Patrol Lead | 2 |
| Inspector | 7 | Inspection Coordinator | 2 |
| Sprinkler/Technician, Fire Protection | 6 | Fire Sprinkler Inspector | 2 |
| Sprinkler/Inspector | 6 | Fire Protection Specialist | 2 |
| Fire Protection Inspector | 6 | Fire Fighter | 2 |
| Alarm Sprinkler/Inspector | 6 | Bigdata Code Committers | 2 |
| Swimmer | 5 | Area Alarm Inspector | 2 |
| Aircraft Specialist | 5 | Volunteer, Digital,Marine | 1 |
| Senior Inspector | 4 | Volunteer, Concept,Breakfast | 1 |

**Table 4b. Top Job Titles for Fire Prevention Occupations for latest 12 months (July 2019 - June 2020) Silicon** **Valley Sub-Region**

|  |  |  |  |
| --- | --- | --- | --- |
| Common Title | Silicon Valley | Common Title | Silicon Valley |
| Firefighter | 18 | Lead Inspector/Sprinkler | 1 |
| Alarm Inspector | 5 | Inspector/Technician | 1 |
| Mobile Patrol Lead | 2 | Fire Systems Inspection And Testing | 1 |
| Inspector, Alarm | 2 | Entry Alarm Inspector/Sprinkler | 1 |
| Inspection Coordinator | 2 | Entrepreneur | 1 |
| Technician/Specialist | 1 | Dont Know About Speed Physics Could Be Costing To More Than Think | 1 |
| Technician | 1 | Certified Sprinkler/Inspector | 1 |
| Sprinkler/Technician, Inspection | 1 | Area Paramedics Medic, Benefits, Safety | 1 |
| Specialist | 1 | Alarm Systems Inspector | 1 |
| Service Detail Lead | 1 | Alarm Inspector/Contractor | 1 |
| Lead Technician | 1 | Aircraft Specialist | 1 |

*Source: Burning Glass*

# Industry Concentration

**Table 5. Industries hiring Fire Prevention 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 (903999) | 7,869 | 8,267 | 5% | 92% |
| All Other Support Services (561990) | 142 | 145 | 2% | 2% |
| State Government, Excluding Education and Hospitals (902999) | 138 | 149 | 8% | 2% |
| Federal Government, Military (901200) | 92 | 89 | -3% | 1% |
| Federal Government, Civilian, Excluding Postal Service (901199) | 91 | 90 | -1% | 1% |
| Convention and Trade Show Organizers (561920) | 88 | 94 | 7% | 1% |

*Source: EMSI 2020.3*

**Table 6. Top Employers Posting Fire Prevention** **Occupations in Bay Region and Silicon** **Valley Sub-Region (July 2019 - June 2020)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Employer | Bay | Employer | Bay | Employer | Silicon Valley |
| Johnson Controls Incorporated | 11 | American Red Cross | 3 | Navy | 3 |
| National Testing Network | 9 | State of California | 2 | Statcomm Incorporated | 2 |
| Bay Alarm | 9 | United States Naval Services | 2 | First Alarm | 2 |
| Daily Dispatch | 7 | Umpqua Community College | 2 | Bay Alarm | 2 |
| Bay Alarm Company | 6 | Thenewstribune Com | 2 | United States Marie Corps | 1 |
| Arrow Fire Protection | 6 | Tesla Motors | 2 | Tmob | 1 |
| United States Marie Corps | 5 | Statcomm Incorporated | 2 | Symmetry Financial Group | 1 |
| Western States Fire Protection | 4 | Siemens | 2 | Sos Security | 1 |
| Tesla | 4 | San Francisco Public Works | 2 | Restoration Management Company | 1 |
| Convergint Technologies | 4 | River Rock Casino | 2 | Premier Security | 1 |
| City Napa | 4 | Redwood City Hall Office | 2 | Outsource | 1 |
| San Ramon Valley Fire Protection District | 3 | Pacific Auxiliary Fire Alarm | 2 | National Testing Network | 1 |
| Navy | 3 | Livermore Navy Talent Acquisition Group | 2 | Merit Educational Consultants | 1 |
| East Bay Regional Park District | 3 | Lawrence Berkeley National Laboratory | 2 | Lund Pearson Mclaughlin | 1 |
| Commercial Fire Protection | 3 | Iosm | 2 | Lockheed Martin Corporation | 1 |
| City Albany | 3 | First Alarm | 2 | Jr Wagner Fire Protection, Inc | 1 |
| Cintas | 3 | East Contra Costa Fire Protection District | 2 | Iosm | 1 |

*Source: Burning Glass*

# Educational Supply

There are 11 community colleges in the Bay Region issuing 340 awards on average annually (last 3 years ending 2018-19) on TOP 2133.00 - Fire Technology. There are two (2) colleges in the Silicon Valley Sub-Region issuing 35 awards on average annually (last 3 years) on this TOP code.

There is one (1) Other Educational Institution in the Bay Region, located in the Silicon Valley, issuing two (2) Bachelor’s Degrees on average annually (last 3 years) on TOP 2133.00 - Fire Technology.

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| College | Sub-Region | Associates | Certificate 18+ Units | Certificate Low Unit | Total |
| Cabrillo | Santa Cruz-Monterey | 18 |  | 1 | 19 |
| Chabot | East Bay | 14 |  | 2 | 16 |
| Gavilan | Silicon Valley | 0 |  | 6 | 6 |
| Las Positas | East Bay | 8 |  | 13 | 21 |
| Los Medanos | East Bay | 27 |  | 62 | 89 |
| Mission | Silicon Valley | 29 |  | 0 | 29 |
| Monterey | Santa Cruz-Monterey | 2 |  | 3 | 5 |
| San Francisco | Mid-Peninsula | 14 |  | 43 | 57 |
| San Mateo | Mid-Peninsula | 22 |  | 12 | 34 |
| Santa Rosa | North Bay | 35 |  | 16 | 51 |
| Solano | North Bay | 10 |  | 3 | 13 |
| **Total Bay Region** | | **179** |  | **161** | **340** |
| **Total Silicon** **Valley Sub-Region** | | **29** |  | **6** | **35** |

# Source: Data Mart

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

**Table 7b. Bachelor’s Degree Awards on TOP 2133.00 - Fire Technology in Bay Region**

|  |  |  |
| --- | --- | --- |
| **College** | **Sub-Region** | **Bachelor’s Degree** |
| Cogswell College | Silicon Valley | 2 |
| **Total Bay Region** | | **2** |
| **Total Silicon Valley Sub-Region** | | **2** |

# Source: Data Mart

Note: The annual average for awards is 2014-15 to 2016-17.

# Gap Analysis

Based on the data included in this report, there is a labor market gap in the Bay region with 693 annual openings for the Fire Prevention occupational cluster and 342 annual (3-year average) awards for an annual undersupply of 351 students. In the Silicon Valley Sub-Region, there is also a gap with 141 annual openings and 37 annual (3-year average) awards for an annual undersupply of 104 students.

# 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 | Mission College All CTE Programs | State 2133.00 | Bay 2133.00 | Silicon Valley 2133.00 | Mission College 2133.00 |
| % Employed Four Quarters After Exit | 74% | 77% | 77% | 85% | 87% | 77% |
| Median Quarterly Earnings Two Quarters After Exit | $10,550 | $10,336 | $15,553 | $19,882 | $28,288 | $8,380 |
| Median % Change in Earnings | 46% | 49% | 37% | 34% | 27% | 100% |
| % of Students Earning a Living Wage | 63% | 66% | 72% | 78% | 88% | 48% |

*Source: Launchboard Pipeline (version available on (8/5/20)*

# Skills, Certifications and Education

**Table 9. Top Skills for Fire Prevention Occupations in Bay Region (July 2019 - June 2020)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Skill | Postings | Skill | Postings | Skill | Postings |
| Repair | 112 | Equipment Moving | 19 | Budgeting | 10 |
| Fire Protection | 85 | Inspection of Safety Equipment and/or Alarm Systems | 19 | Chain Saws | 10 |
| Fire Suppression | 57 | Medical Emergencies | 18 | Equipment Maintenance | 10 |
| Customer Service | 44 | Occupational Health and Safety | 16 | Performance testing | 10 |
| HAZMAT | 37 | Predictive / Preventative Maintenance | 16 | Personal Protective Equipment (PPE) | 10 |
| Cardiopulmonary Resuscitation (CPR) | 31 | Public Health and Safety | 16 | Self-Contained Breathing Apparatus (SCBA) | 10 |
| Scheduling | 26 | Training Programs | 16 | Basic Mathematics | 9 |
| Emergency Services | 25 | Incident Command System | 14 | Fire Trucks | 9 |
| Advanced Cardiac Life Support (ACLS) | 24 | Prevention Activities | 14 | Inspection Records | 9 |
| Hand Tools | 23 | Lifting Ability | 13 | Sales | 9 |
| Technical Inspections | 21 | Chemistry | 12 | Ventilation | 9 |
| Wiring | 21 | Hydraulics | 12 | Basic Trauma Life Support (BTLS) | 8 |
| Life Support | 20 | Manual Dexterity | 12 | Equipment Operation | 8 |
| Power Tools | 20 | Network Testing | 12 | Fire Control | 8 |
| Emergency Medical Care | 19 | Trauma | 11 | Prevention Programs | 8 |

*Source: Burning Glass*

**Table 10. Certifications for Fire Prevention Occupations in the Bay Region (July 2019 - June 2020)**

|  |  |  |  |
| --- | --- | --- | --- |
| Certification | Postings | Certification | Postings |
| Driver's License | 138 | Fire Inspector | 8 |
| Emergency Medical Technician (EMT) | 81 | CDL Class C | 8 |
| Firefighter | 59 | Fire Inspector II | 6 |
| Certified Patient Account Technician | 58 | Driver/Operator Pumper | 6 |
| Firefighter I | 54 | American Heart Association Certification | 6 |
| Paramedic Certification | 39 | Wildland Firefighter | 5 |
| Firefighter II | 19 | Fire Officer | 5 |
| First Aid CPR AED | 16 | Fire Instructor | 5 |
| HazMat Awareness | 12 | Airport Firefighter | 5 |
| Fire Inspector I | 11 | Aerial Rescue and Fire Fighting (ARFF) | 5 |
| Advanced Cardiac Life Support (ACLS) Certification | 10 | Security Clearance | 4 |
| National Registry of Emergency Medical Technicians (NREMT) | 8 | Pediatric Advanced Life Support (PALS) Certification | 4 |

*Source: Burning Glass*

**Table 11. Education Requirements for Fire Prevention Occupations in Bay Region**

Note: 44% 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 | 161 | 97% |
| Associate Degree | 2 | 1% |
| Bachelor’s Degree or Higher | 4 | 2% |

*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

For more information, please contact:

* Doreen O’Donovan, Research Analyst, for Bay Area Community College Consortium (BACCC) and Centers of Excellence (CoE), [doreen@baccc.net](mailto:doreen@baccc.net) or (831) 479-6481
* John Carrese, Director, San Francisco Bay Center of Excellence for Labor Market Research, [jcarrese@ccsf.edu](mailto:jcarrese@ccsf.edu) or (415) 267-6544