

Firefighter Occupations

Inland Empire/Desert Region (Riverside-San Bernardino-Ontario Metropolitan Statistical Area)

Summary

- Employment for the firefighter occupational group is expected to **increase 14% between 2017 and 2022** in the Inland Empire/Desert Region. A total of **1,387 job openings** will be available over the five-year timeframe.
- The entry-level wage for the firefighter occupational group is **above the MIT Living Wage estimate of \$12.30 per hour** for a single adult living in the Inland Empire/Desert Region.
- **There appears to be an opportunity for program growth** based on the average annual number of program completions for the selected community college programs (**167 annual average total**) and the annual openings for the firefighter occupational group in the region (**277 annual job openings**).

Introduction

This report details occupations relevant to the fire technology and fire academy programs. These programs prepare graduates to prevent, control, and extinguish fires, as well as focus on studies specific to local and state training requirements for employment and post-employment advancement.¹ In addition to knowledge of firefighting procedures, employers of this occupational group often seek individuals with an emergency medical technician (EMT) certification. The four occupations included in the firefighter occupational group are the following:

- Firefighters
- Fire Inspectors and Investigators
- First-Line Supervisors of Fire Fighting and Prevention Workers
- Forest Fire Inspectors and Prevention Specialists

¹ The Taxonomy of Programs, 6th Edition, February 2004

Job Opportunities

In 2017, there were 2,860 firefighter occupational group jobs in the Inland Empire/Desert Region. Across the region, employment related to the firefighter occupational group is expected to increase by 14% through 2022. Employers will need to hire 1,387 workers over the next five years to fill new jobs and to backfill jobs that workers are leaving – including retirements. Appendix A, Table 1 shows the projected job growth for each of the occupations in this group. Exhibit 1 displays the projected growth for the firefighter occupational group in the region.

Exhibit 1: Five-year projections for the firefighter occupational group in the Inland Empire/Desert Region

| Region | 2017 Jobs | 5-Yr % Change (New Jobs) | 5-Yr Openings (New + Replacement Jobs) | Annual Openings (New + Replacement Jobs) | % of workers age 55+ |
|----------------------|-----------|--------------------------|--|--|----------------------|
| Inland Empire/Desert | 2,860 | 14% | 1,387 | 277 | 9% |

Source: EMSI 2018.3

Earnings

All of the occupations in this group have an entry-level wage above the MIT Living Wage estimate of \$12.30 per hour or \$25,586 for a single adult living in the Inland Empire/Desert Region. These wages are also sufficient for two adults and one child (\$14.50 per hour, per adult or \$30,160 annually for each adult). See Exhibit 2 for wage information by occupation in the Inland Empire/Desert Region.

Exhibit 2: Earnings for the firefighter occupational group in the Inland Empire/Desert Region

| Occupation | Entry to Experienced Hourly Earnings Range* | Median Wage* | Avg. Annual Earnings |
|--|---|--------------|----------------------|
| First-Line Supervisors of Fire Fighting and Prevention Workers | \$34.08 to \$67.12 | \$38.98 | \$106,100 |
| Fire Inspectors and Investigators | \$23.15 to \$46.69 | \$29.86 | \$70,300 |
| Firefighters | \$23.20 to \$38.89 | \$28.20 | \$66,300 |
| Forest Fire Inspectors and Prevention Specialists | \$15.61 to \$36.07 | \$21.54 | \$53,800 |

Source: EMSI 2018.3

*Entry Hourly is 25th percentile wage, the median is 50th percentile wage, experienced is 75th percentile wage.

Job Postings, Top Employers, Skills, Education, and Certifications

Exhibit 3 shows the number of job ads posted during the last 12 months for each of the occupations in the firefighter occupational group as well as the average time to fill locally and nationally. The occupation of forest fire inspectors and prevention specialists has been removed from this section of the report due to a lack of job postings in the region.

Exhibit 3: Job ads by occupation in the firefighter occupational group in the Inland Empire/Desert Region during the last 12 months, Oct 2017 - Sep 2018

| Occupation | Job Ads | Regional Average Time To Fill (Days) | National Average Time to Fill (Days) |
|--|------------|--------------------------------------|--------------------------------------|
| Fire Inspectors and Investigators | 47 | 41 | 36 |
| First-Line Supervisors of Fire Fighting and Prevention Workers | 47 | 42 | 37 |
| Firefighters | 17 | 40 | 35 |
| Total | 111 | - | - |

Source: Burning Glass – Labor Insight

The average time to fill for the firefighter occupational group in the Inland Empire/Desert Region is about five days longer than the nation as a whole. This indicates that it is slightly more difficult for a local employer to find qualified candidates to fill their open positions than it is nationally.

Exhibit 4 lists the top employers posting online job ads for the firefighter occupational group in the Inland Empire/Desert Region.

Exhibit 4: The top employers for the firefighter occupational group in the Inland Empire/Desert Region during the last 12 months, Oct 2017 - Sep 2018

| Occupation | Top Employers |
|---|---|
| Fire Inspectors and Investigators (n=37) | <ul style="list-style-type: none"> • ADT Security Services • City of Rancho Cucamonga |
| First-Line Supervisors of Fire Fighting and Prevention Workers (n=33) | <ul style="list-style-type: none"> • County of San Bernardino • City of Redlands |
| Firefighters (n=12) | <ul style="list-style-type: none"> • City of Cathedral City • City of Montclair |

Source: Burning Glass – Labor Insights

Exhibit 5 lists the in-demand skills that employers are seeking when looking for workers to fill each of the occupations in the firefighter occupational group. The skills reported in job postings may be utilized as a helpful guide for curriculum development. Specialized skills are occupation-specific skills employers are requesting for industry or job competency. Employability skills are foundational skills that transcend industries and occupations; this category is commonly referred to as “soft skills.”

Exhibit 5: In-demand skills for the firefighter occupational group in the Inland Empire/Desert Region, Oct 2017 - Sep 2018

| Occupation | Specialized skills | Employability skills |
|---|---|---|
| Fire Inspectors and Investigators (n=44) | <ul style="list-style-type: none"> • Cardiopulmonary Resuscitation (CPR) • Inspection Records • Building Codes | <ul style="list-style-type: none"> • Communication Skills • Writing • Building Effective Relationships |
| First-Line Supervisors of Fire Fighting and Prevention Workers (n=40) | <ul style="list-style-type: none"> • Budgeting • Customer Service • Public Health and Safety | <ul style="list-style-type: none"> • Communication Skills • Research • Mentoring |
| Firefighters (n=15) | <ul style="list-style-type: none"> • Cardiopulmonary Resuscitation (CPR) • Advanced Cardiac Life Support (ACLS) • Emergency Medical Care | <ul style="list-style-type: none"> • Writing • English • Communication Skills |

Source: Burning Glass – Labor Insights

Exhibit 6 displays the entry-level education typically required to enter these occupations according to the Bureau of Labor Statistics, educational attainment for incumbent workers with “some college, no degree” and an “associate degree” according to the U.S. Census, and the minimum advertised education requirement requested by employers in online job ads.

Exhibit 6: Educational attainment and online job ads with minimum advertised education requirements for the firefighter occupational group in the Inland Empire/Desert Region, Oct 2017 – Sep 2018

| Occupations | Typical Entry-Level Education Requirement | Two –Year Postsecondary Level of Educational Attainment* | Minimum Advertised Education Requirement from Job Ads | | | |
|--|---|--|---|--|------------------|-----------------------------|
| | | | Number of Job Postings (N=) | High school diploma or vocational training | Associate degree | Bachelor’s degree or higher |
| Fire Inspectors and Investigators | Postsecondary nondegree award | 52% | 28 | 93% | 7% | - |
| First-Line Supervisors of Fire Fighting and Prevention Workers | Postsecondary nondegree award | 58% | 24 | 17% | 46% | 37% |
| Firefighters | Postsecondary nondegree award | 61% | 12 | 100% | - | - |

Source: EMSI 2018.3, Current Population Survey, Burning Glass – Labor Insights

*Percentage of incumbent workers with a Community College Credential or Some Postsecondary Coursework

Exhibit 7 displays the top certifications required by employers posting job ads for the firefighter occupational group in the Inland Empire/Desert Region. The most commonly required was an Emergency Medical Technician (EMT) certification. This certification was mentioned in job postings for all occupations in this group.

Exhibit 7: Top certifications required by employers in the Inland Empire/Desert Region, Oct 2017-Sep 2018

| Occupation | Certifications |
|---|--|
| Fire Inspectors and Investigators (n=33) | <ul style="list-style-type: none"> • Emergency Medical Technician (EMT) • Firefighter Certification • Fire Inspector Certification |
| First-Line Supervisors of Fire Fighting and Prevention Workers (n=31) | <ul style="list-style-type: none"> • Fire Inspector I & II Certification • Registered Environmental Health Specialist (REHS) • Emergency Medical Technician (EMT) |
| Firefighters (n=14) | <ul style="list-style-type: none"> • Firefighter Certification • Emergency Medical Technician (EMT) • Paramedic |

Source: Burning Glass – Labor Insights

Student Completions

Exhibits 8 and 9 shows the annual average regional community college credentials (associate degrees and certificates) conferred during the three academic years between 2014 and 2017, with the relevant TOP code as well as the program titles used at each college, sourced from the Chancellor’s Office Curriculum Inventory (COCI). Please note, a credential is not equivalent to a single person in search of a job opening since a student may earn more than one credential, such as an associate degree in addition to a certificate. Community College student outcome information is from the CTE LaunchBoard based on the selected TOP code(s) and region.

Exhibit 8: Annual average community college student completions for fire technology programs in the Inland Empire/Desert Region

| 2133.00 – Fire Technology | Annual Community College Headcount (2016-17) | Community College Annual Average Credentials (2014-17) |
|---|---|---|
| Chaffey – Fire Prevention Inspector, Fire Technology: Professional Firefighter | 182 | |
| Associate Degree | | 12 |
| Certificate 18 to < 30-semester units | | 12 |
| Copper Mountain – Fire Technology | 48 | |
| Associate Degree | | 2 |
| Certificate 30 to < 60-semester units | | 1 |
| Crafton Hills – Fire Technology | 279 | |
| Associate Degree | | 20 |
| Certificate 6 to < 18-semester units | | 19 |
| Desert – Fire Technology | 171 | |
| Associate Degree | | 4 |
| Certificate 18 to < 30-semester units | | 1 |
| Moreno Valley – Chief Officer, Fire Officer, Fire Technology | 270 | |
| Associate Degree | | 14 |
| Certificate 18 to < 30-semester units | | 13 |
| Mt. San Jacinto – Fire Technology | 187 | |
| Associate Degree | | 8 |
| Certificate 30 to < 60-semester units | | 4 |
| Palo Verde | 1,503 | |
| Certificate 6 to < 18-semester units | | 1* |
| Credit Award <6-semester units | | 1* |
| Riverside – Fire Technology, Chief Officer, Fire Officer | | |
| Associate Degree | | 1 |
| Victor Valley – Fire Prevention Officer, Fire Technology | 481 | |
| Associate Degree | | 19 |
| Total community college headcount (2016-17) | 3,098 | |
| Total annual average community college credentials | | 130 |

Source: LaunchBoard, IPEDS

*Palo Verde awarded one 6 to <18-semester unit certificate and one <6-semester unit credit in 2014-15

2133.00 – Fire technology program Strong Workforce outcomes in the Inland Empire/Desert Region in the academic year 2015-16 [unless noted otherwise]:

- Number of course enrollments: 5,753 (California median: 498) [2016-17]
- Number of students who transferred to a 4-year institution: 99 (CA: 18)
- Employed in the second fiscal quarter after exit: 88% (CA: 82%)
- Median earnings in the second fiscal quarter after exit: \$24,558 (CA: \$17,186)
- Employed in the fourth fiscal quarter after exit: 85% (CA: 79%)
- Median annual earnings: \$98,519 (CA: \$57,048)
- The percentage in a job closely related to the field of study: 65% (CA: 75%) [2014-15]
- Median change in earnings: 24% (CA: 34%)
- The proportion of students who attained a living wage: 83% (CA: 66%)

Exhibit 9: Annual average community college student completions for fire academy programs in the Inland Empire/Desert Region

| 2133.50 – Fire Academy | Annual Community College Headcount (2016-17) | Community College Annual Average Credentials (2014-17) |
|---|---|---|
| Chaffey | 10 | |
| Copper Mountain | 16 | |
| Crafton Hills | 51 | |
| Certificate 6 to < 18-semester units | | 12 |
| Desert – Basic Fire Fighter | 13 | |
| Certificate 18 to < 30-semester units | | 7 |
| Moreno Valley – Basic Firefighter Academy | 196 | |
| Associate Degree | | 8 |
| Certificate 18 to < 30-semester units | | 10 |
| Riverside – Basic Firefighter Academy | | |
| Associate Degree | | 1* |
| Victor Valley – Fire Fighter | 58 | |
| Certificate 30 to < 60-semester units | | 1* |
| Total community college headcount (2016-17) | 344 | |
| Total annual average community college credentials | | 37 |

Source: LaunchBoard, IPEDS

*Riverside awarded one associate degree in 2014-15

*Victor Valley awarded one 30 to <60-semester unit certificate in 2016-17



2133.50 – Fire academy program Strong Workforce outcomes in the Inland Empire/Desert Region in the academic year 2015-16 [unless noted otherwise]:

- Number of course enrollments: 480 (California median: 67) [2016-17]
- Number of students who transferred to a 4-year institution: N/A (CA: 0)
- Employed in the second fiscal quarter after exit: 86% (CA: 88%)
- Median earnings in the second fiscal quarter after exit: \$14,338 (CA: \$22,058)
- Employed in the fourth fiscal quarter after exit: 83% (CA: 84%)
- Median annual earnings: \$52,861 (CA: \$79,437)
- The percentage in a job closely related to the field of study: 79% (CA: 100%) [2014-15]
- Median change in earnings: 53% (CA: 19%)
- The proportion of students who attained a living wage: 75% (CA: 75%)

Sources

O*Net Online

Labor Insight/Jobs (Burning Glass)

Economic Modeling Specialists International (EMSI)

CTE LaunchBoard

MIT Living Wage Calculator

Chancellor's Office Curriculum Inventory (COCI, version 2.0)

Taxonomy of Programs, 6th Edition

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Appendix A: Occupation definitions, five-year projections, and earnings for the firefighter occupational group

Occupation Definitions (SOC code), Education and Training Requirement, Community College Education Attainment

First-Line Supervisors of Fire Fighting and Prevention Workers (33-1021)

Directly supervise and coordinate activities of workers engaged in fire fighting and fire prevention and control.

Sample job titles: Battalion Chief, Battalion Fire Chief, Fire Battalion Chief, Fire Captain, Fire Chief, Fire Lieutenant, Fire Marshal, Fire Suppression Captain, Lieutenant Fire Fighter, Training Officer, Assistant Unit Forester, Crew Boss, District Fire Management Officer, Engine Boss, Fire Captain, Fire Management Officer, Firefighter Type One (FFT1), Forest Fire Specialist Supervisor, Section Forest Fire Warden, Squad Boss

Entry-Level Educational Requirement: Postsecondary nondegree award

Training Requirement: One to twelve months on-the-job training

Percentage of incumbent workers with a Community College Award or Some Postsecondary Coursework: 58%

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.

Sample job titles: Apparatus Operator, Fire Captain, Fire Chief, Fire Engineer, Fire Equipment Operator, Fire Fighter, Firefighter, Fireman, Safety Officer, Volunteer Firefighter, Fire Management Specialist, Fire Rescue Technician, Fire Technician, Forest Fire Suppression Specialist, Forestry Fire Technician, Hot Shot, On-Scene Supporter, Wildland Firefighter

Entry-Level Educational Requirement: Postsecondary nondegree award

Training Requirement: More than twelve months on-the-job training

Percentage of incumbent workers with a Community College Award 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.

Sample job titles: *Deputy Fire Marshal, Fire Code Inspector, Fire Inspector, Fire Marshal, Fire Official, Fire Prevention Inspector, Fire Prevention Specialist, Fire Protection Specialist, Fire Safety Inspector, Inspector, Arson Division Chief, Arson Investigator, Canine Handler (K9 Handler), Fire and Explosion Investigator, Fire Investigator, Fire Lieutenant, Fire Marshal, Investigator, Lieutenant, State Fire Marshal*

Entry-Level Educational Requirement: Postsecondary nondegree award

Training Requirement: One to twelve months on-the-job training

Percentage of incumbent workers with a Community College Award or Some Postsecondary Coursework: 52%

Forest Fire Inspectors and Prevention Specialists (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.

Sample job titles: *Fire Apparatus Engineer, Fire Lookout, Fire Operations Forester, Forest Fire Lookout, Forest Officer, Forest Patrolman, Forest Ranger, Forest Technician, Forester, Ranger*

Entry-Level Educational Requirement: High school diploma or equivalent

Training Requirement: One to twelve months on-the-job training

Percentage of incumbent workers with a Community College Award or Some Postsecondary Coursework: 52%



Table 1. 2017 to 2022 job growth for the firefighter occupational group in the Inland Empire/Desert Region

| Occupation (SOC) | 2017 Jobs | 5-Yr Change | 5-Yr % Change | Annual Openings (New + Replacement Jobs) | Entry-level to Experienced Wage* | Median Wage* | Average Annual Earnings | Entry-Level Education & On-The-Job Training | Work Experience Required |
|--|--------------|-------------|---------------|--|----------------------------------|--------------|-------------------------|---|--------------------------|
| Firefighters (33-2011) | 2,603 | 329 | 13% | 245 | \$23.20 to \$38.89 | \$28.20 | \$66,300 | Postsecondary nondegree award & more than 12 months | None |
| First-Line Supervisors of Fire Fighting and Prevention Workers (33-1021) | 184 | 45 | 24% | 22 | \$34.08 to \$67.12 | \$38.98 | \$106,100 | Postsecondary nondegree award & 1 to 12 months | Less than 5 years |
| Fire Inspectors and Investigators (33-2021) | 59 | 9 | 15% | 8 | \$23.15 to \$46.69 | \$29.86 | \$70,300 | Postsecondary nondegree award & 1 to 12 months | 5 years or more |
| Forest Fire Inspectors and Prevention Specialists (33-2022) | 14 | 3 | 21% | 2 | \$15.61 to \$36.07 | \$21.54 | \$53,800 | High school diploma or equivalent & 1 to 12 months | Less than 5 years |
| Total | 2,860 | 387 | 14% | 277 | - | - | - | - | - |

Source: EMSI 2018.3

*Entry Hourly is 25th percentile wage, the median is 50th percentile wage, experienced is 75th percentile wage