

Labor Market Analysis: 2133.10/Wildland Fire Technology
Wildland Fire Technology (Associate of Science; Certificate requiring 16 to < 30 semester units)

Los Angeles Center of Excellence, February 2023

Summary

Program Endorsement:	Endorsed: All Criteria Met <input type="checkbox"/>	Endorsed: Some Criteria Met <input checked="" type="checkbox"/>	Not Endorsed <input type="checkbox"/>
Program Endorsement Criteria			
Supply Gap:	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/> (see comments)	
Living Wage: (Entry-Level, 25th)	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Education:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Emerging Occupation(s)			
Yes <input type="checkbox"/>		No <input checked="" type="checkbox"/>	

The Los Angeles Center of Excellence for Labor Market Research (LA COE) prepared this report to provide regional labor market supply and demand data related to four middle-skill occupations:

- **First-Line Supervisor of Firefighting and Prevention Workers (33-1021)** Directly supervise and coordinate activities of workers engaged in firefighting and fire prevention and control.¹
- **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.²
- **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.³
- **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.⁴

¹ [First-Line Supervisors of Firefighting and Prevention Workers \(bls.gov\)](#)

² [Firefighters : Occupational Outlook Handbook: : U.S. Bureau of Labor Statistics \(bls.gov\)](#)

³ [Fire Inspectors and Investigators : Occupational Outlook Handbook: : U.S. Bureau of Labor Statistics \(bls.gov\)](#)

⁴ [Forest Fire Inspectors and Prevention Specialists \(bls.gov\)](#)

Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.⁵ This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with the relevant occupations.

Based on the available data, there does not appear to be a supply gap for these fire technology occupations in the region. However, of the 1,115 average annual awards issued related to fire technology, 364 were associate degrees, 385 were certificates greater than 16 units, and 367 were low-unit certificates. Although hiring preferences for entry-level firefighters vary by agency type (Federal, State/Cal-Fire, Local/Municipal/County, and Private), it is unlikely that the 367 low-unit certificates are sufficient for employment as a firefighter, which brings the realistic supply for firefighting occupations down to 748 average annual awards. Furthermore, entry-level wages exceed the self-sufficiency standard wage in both Los Angeles and Orange counties, and the majority of annual openings for the occupations in this report typically require a postsecondary non-degree award. **Therefore, due to some of the criteria being met, the LA COE endorses this proposed program.** Detailed reasons include:

Demand:

- **Supply Gap Criteria** – Over the next five years, **815 jobs are projected to be available annually** in the region due to new job growth and replacements, **which is more than the three-year average of 1,115 awards conferred** by educational institutions in the region.
 - Of the 1,115 average annual awards issued related to fire technology, 364 were associate degrees, 385 were certificates greater than 16 units, and **367 were low-units certificates**. Although hiring preferences for entry-level firefighters vary by agency type (Federal, State/Cal-Fire, Local/Municipal/County, or Private), **it is unlikely that these 367 low-unit certificates are sufficient for employment as a firefighter**. Therefore, a more accurate and realistic estimate of supply for firefighting jobs is **748 average annual awards**.
 - Over the past 12 months, there were **446 online job postings related to these fire technology occupations**. The highest number of job postings were for firefighters, control officers, fire inspectors, fire alarm inspectors, and firefighters/paramedics.
- **Living Wage Criteria** – Within Los Angeles County, all four fire technology occupations have entry-level wages **above** the self-sufficiency standard hourly wage (\$18.10/hour).⁶

⁵ The COE classifies middle-skill jobs as the following:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

⁶ Self-Sufficiency Standard wage data was pulled from The Self-Sufficiency Standard Tool for California. For more information, visit: <http://selfsufficiencystandard.org/california>.

- **Educational Criteria** – Within the greater LA/OC region, **98% of the annual job openings** for occupations related to fire technology **typically require a postsecondary non-degree award**.
 - Furthermore, the national-level educational attainment data indicates **between 47% and 60% of workers in the field have completed some college or an associate degree**.

Supply:

- There are **16 community colleges** in the greater LA/OC region that issue awards related to fire technology, conferring an average of **1,115 awards annually** between 2018 and 2021.
 - Of the 1,115 average annual awards issued related to fire technology, 364 were associate degrees, 385 were certificates greater than 16 units, and **367 were low-units certificates**. Although hiring preferences for entry-level firefighters vary by agency type (Federal, State/Cal-Fire, Local/Municipal/County, or Private), **it is unlikely that these 367 low-unit certificates are sufficient for employment as a firefighter**. Therefore, a more accurate estimate of supply for firefighting jobs is **748 average annual awards**.
- Currently, there are **no non-community college programs** in the region that train students for the fire technology occupations in this report.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for these fire technology occupations. In the greater Los Angeles/Orange County region, the number of jobs related to these occupations is projected to increase by 6% through 2026. There will be more than 800 job openings per year through 2026 due to job growth and replacements.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties⁷

Geography	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change	Annual Openings
Los Angeles	7,130	7,519	389	5%	655
Orange	1,617	1,749	132	8%	160
Total	8,748	9,268	520	6%	815

Wages

The labor market endorsement in this report considers the entry-level hourly wages for these fire technology occupations in Los Angeles County as they relate to the county’s self-sufficiency standard wage. Orange County wages are included below in order to provide a complete analysis of the greater LA/OC region. Detailed wage information, by county, is included in Appendix A.

⁷ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Los Angeles County— All four occupations have entry-level wages above the self-sufficiency standard wage for one adult (\$18.10 in Los Angeles County). Typical entry-level hourly wages are in a range between \$22.61 and \$59.31. Experienced workers can expect to earn wages between \$47.78 and \$77.80.

Exhibit 2: Hourly Earnings for Occupations in LA County

Occupation	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
First-Line Supervisors of Firefighting and Prevention Workers (33-1021)	\$59.31	\$77.80	\$77.80
Firefighters (33-2011)	\$37.40	\$40.88	\$57.72
Fire Inspectors and Investigators (33-2021)	\$22.61	\$29.32	\$47.78
Forest Fire Inspectors and Prevention Specialists (33-2022)	\$40.49	\$47.35	\$62.23

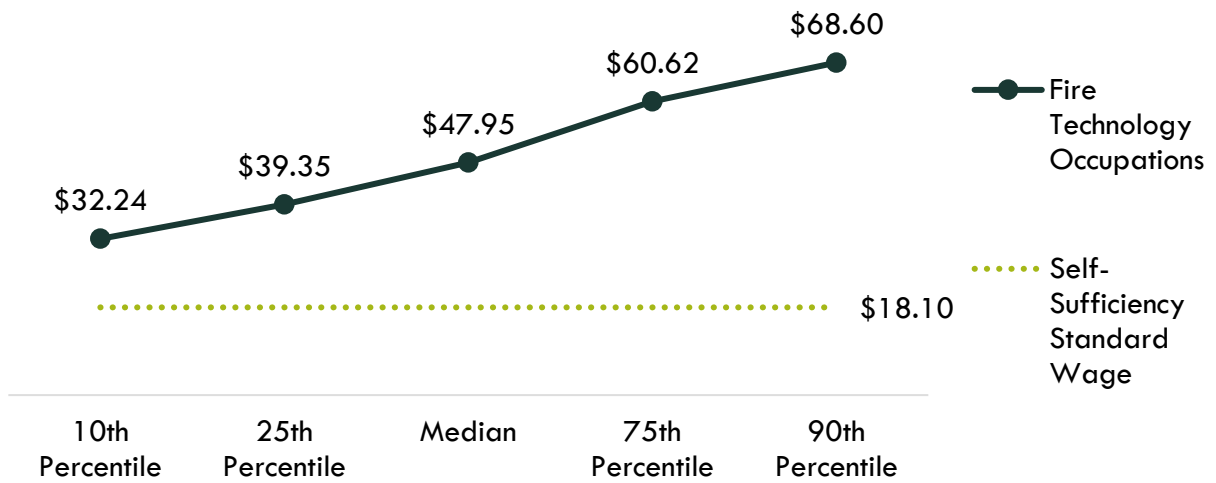
Orange County—All four occupations have entry-level wages above the self-sufficiency standard wage for one adult (\$20.63 in Orange County). Typical entry-level hourly wages are in a range between \$21.49 and \$54.24. Experienced workers can expect to earn wages between \$45.32 and \$71.15.

Exhibit 3: Hourly Earnings for Occupations in Orange County

Occupation	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
First-Line Supervisors of Firefighting and Prevention Workers (33-1021)	\$54.24	\$71.14	\$71.15
Firefighters (33-2011)	\$34.24	\$37.43	\$52.83
Fire Inspectors and Investigators (33-2021)	\$21.49	\$27.84	\$45.32
Forest Fire Inspectors and Prevention Specialists (33-2022)	\$36.97	\$43.23	\$56.81

On average, the entry-level earnings for the occupations in this report are \$39.35; this is above the living wage for one single adult in Los Angeles County (\$18.10). Exhibit 4 shows the average wage for the occupations in this report, from entry-level to experienced workers.

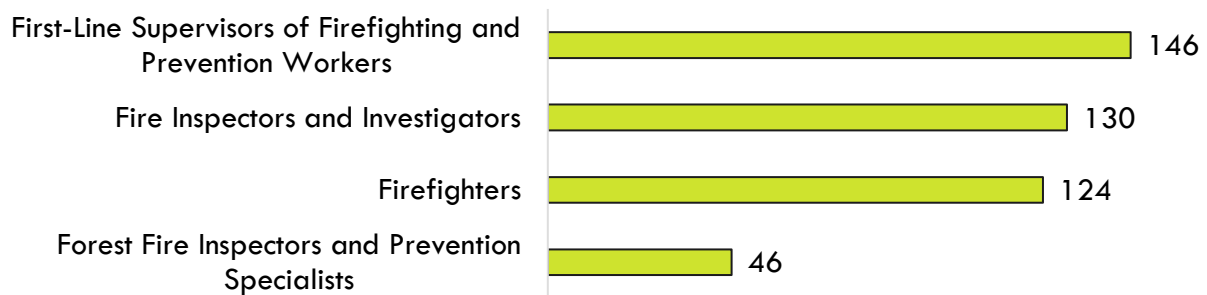
Exhibit 4: Average Hourly Earnings for Fire Technology Occupations in LA/OC



Job Postings

There were 446 online job postings related to fire technology listed in the past 12 months. Exhibit 5 displays the number of job postings by occupation. The majority of job postings (33%) were for *first-line supervisors of firefighting and prevention workers*, followed by *fire inspectors and investigators* (29%) and *firefighters* (28%). The highest number of job postings were for firefighters, control officers, fire inspectors, fire alarm inspectors, and firefighters/paramedics. The top skills were firefighting, fire prevention, fire protection, fire alarm systems, and emergency medical services. The top three employers, by number of job postings, in the region were GardaWorld, Disney, and Orange County Fire Authority.

Exhibit 5: Job postings by occupation (last 12 months)



Educational Attainment

The Bureau of Labor Statistics (BLS) lists the following typical entry-level education levels for the occupations in this report:

- **Postsecondary non-degree award:** *First-line supervisors of firefighting and prevention workers; firefighters; fire inspectors and investigators*
- **High school diploma or equivalent:** *Forest fire inspectors and prevention specialists*

In the greater LA/OC region, the majority of annual job openings (98%) typically require a postsecondary non-degree award. Furthermore, the national-level educational attainment data

indicates between 47% and 60% of workers in the field have completed some college or an associate degree. Of the 59% of fire technology job postings listing a minimum education requirement in the greater Los Angeles/Orange County region, 60% (159) requested high school or vocational training, 11% (30) requested an associate degree, and 28% (75) requested a bachelor's degree.

Educational Supply

Community College Supply—Exhibit 6 shows the annual and three-year average number of awards conferred by community colleges in programs that have historically trained for the occupations of interest. Currently, there are no non-community college programs in the region that train students for the fire technology occupations in this report.

Exhibit 6: Regional community college awards (certificates and degrees), 2018-2021

TOP	Program	College	2018-19 Awards	2019-20 Awards	2020-21 Awards	3-Year Average
2133.00	Fire Technology	East LA	162	53	24	80
		El Camino	39	40	33	37
		Glendale	34	43	40	39
		LA Harbor	2	-	-	1
		LA Valley	21	10	11	14
		Long Beach	58	44	36	46
		Mt San Antonio	118	82	84	95
		Pasadena	8	2	2	4
		Rio Hondo	168	192	211	190
		West LA	2	8	7	6
		LA Subtotal	612	474	448	511
		Santa Ana	524	509	421	485
		OC Subtotal	524	509	421	485
Supply Subtotal/Average			1,136	983	869	996
2133.10	Wildland Fire Technology	Rio Hondo	22	13	9	15
		LA Subtotal	22	13	9	15
Supply Subtotal/Average			22	13	9	15
2133.50	Fire Academy	Compton	1	-	-	0
		East LA	7	14	23	15
		El Camino	35	27	37	33
		Rio Hondo	-	76	94	57
		LA Subtotal	43	117	154	105
Supply Subtotal/Average			43	117	154	105
Supply Total/Average			1,201	1,113	1,032	1,115

Appendix A: Occupational demand and wage data by county

Exhibit 9. Los Angeles County

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
First-Line Supervisors of Firefighting and Prevention Workers (33-1021)	1,265	1,329	64	5%	107	\$59.31	\$77.80	\$77.80
Firefighters (33-2011)	5,584	5,871	287	5%	513	\$37.40	\$40.88	\$57.72
Fire Inspectors and Investigators (33-2021)	178	200	22	13%	22	\$22.61	\$29.32	\$47.78
Forest Fire Inspectors and Prevention Specialists (33-2022)	104	119	15	15%	13	\$40.49	\$47.35	\$62.23
Total	7,130	7,519	389	5%	655	-	-	-

Exhibit 10. Orange County

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
First-Line Supervisors of Firefighting and Prevention Workers (33-1021)	281	304	23	8%	26	\$54.24	\$71.14	\$71.15
Firefighters (33-2011)	1,273	1,373	100	8%	126	\$34.24	\$37.43	\$52.83
Fire Inspectors and Investigators (33-2021)	39	43	5	13%	5	\$21.49	\$27.84	\$45.32
Forest Fire Inspectors and Prevention Specialists (33-2022)	25	29	4	16%	3	\$36.97	\$43.23	\$56.81
Total	1,617	1,749	132	8%	160	-	-	-

Exhibit 11. Los Angeles and Orange Counties

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Typical Entry-Level Education
First-Line Supervisors of Firefighting and Prevention Workers (33-1021)	1,546	1,633	87	6%	133	Postsecondary non-degree award
Firefighters (33-2011)	6,857	7,244	387	6%	639	Postsecondary non-degree award
Fire Inspectors and Investigators (33-2021)	216	243	27	13%	27	Postsecondary non-degree award
Forest Fire Inspectors and Prevention Specialists (33-2022)	129	148	19	15%	16	High school diploma or equivalent
Total	8,748	9,268	520	6%	815	-

Appendix B: Sources

- O*NET Online
- Lightcast (formerly Emsi)
- Bureau of Labor Statistics (BLS)
- California Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor’s Office Management Information Systems (MIS)
- Self-Sufficiency Standard at the Center for Women’s Welfare, University of Washington
- Chancellor’s Office Curriculum Inventory (COCI 2.0)

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