

# Firefighters

## Labor Market Analysis: San Diego County

February 2020

### Summary



This brief provides labor market information about *Firefighters* to assist the San Diego and Imperial Counties Community Colleges with decision-making in processes such as program development. According to available labor market information, *Firefighters* has a labor market demand of 279 annual job openings, while average demand for an occupation in San Diego County is 277 annual job openings. Three educational institutions in San Diego County supply 250 awards for this occupation, suggesting that there is a supply gap. This occupation's entry-level and median wages are above the living wage. According to the California Community Colleges' outcomes data, 59 to 72 percent of students who completed a related program (e.g., Fire Technology) earned a living wage, compared to 58 percent of students who complete Career Education programs in general. The typical entry-level education for *Firefighters* is a postsecondary non-degree award. This brief recommends to proceed with a new program for this occupation because 1) its entry-level and median earnings are above the living wage; 2) a postsecondary non-degree award is needed for the occupation; and 3) a low number of programs currently exist.

## Introduction

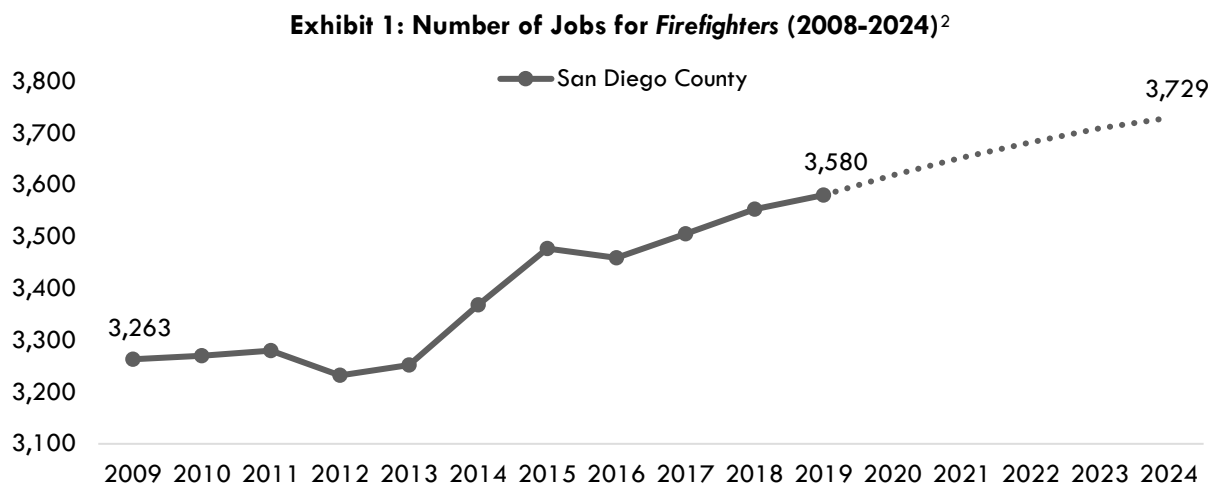
This report provides labor market information in San Diego County for the following occupational code in the Standard Occupational Classification (SOC)<sup>1</sup> system:

**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. Sample reported job titles include:

- Fire Engineer
- Volunteer Firefighter
- Volunteer Fire Fighter
- Fire Technician
- Wildland Firefighter
- On-Scene Supporter
- Hot Shot
- Forestry Fire Technician

## Projected Occupational Demand

Between 2019 and 2024, *Firefighters* are projected to increase by 149 net jobs or four percent (Exhibit 1). Employers in San Diego County will need to hire 279 workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.



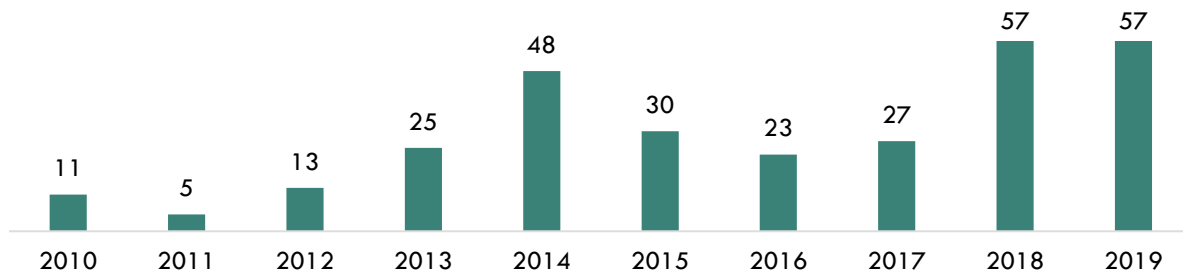
<sup>1</sup> The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](https://www.bls.gov/soc).

<sup>2</sup> Emsi 2020.01; QCEW, Non-QCEW, Self-Employed.

## Online Job Postings

This report analyzes not only historical and projected (traditional LMI) data, but also recent data from online job postings (real-time LMI). Online job postings may provide additional insight about recent changes in the labor market demand that are not captured by historical data. Between 2010 and 2019, there was an average of 30 online job postings per year for *Firefighters* in San Diego County (Exhibit 2).

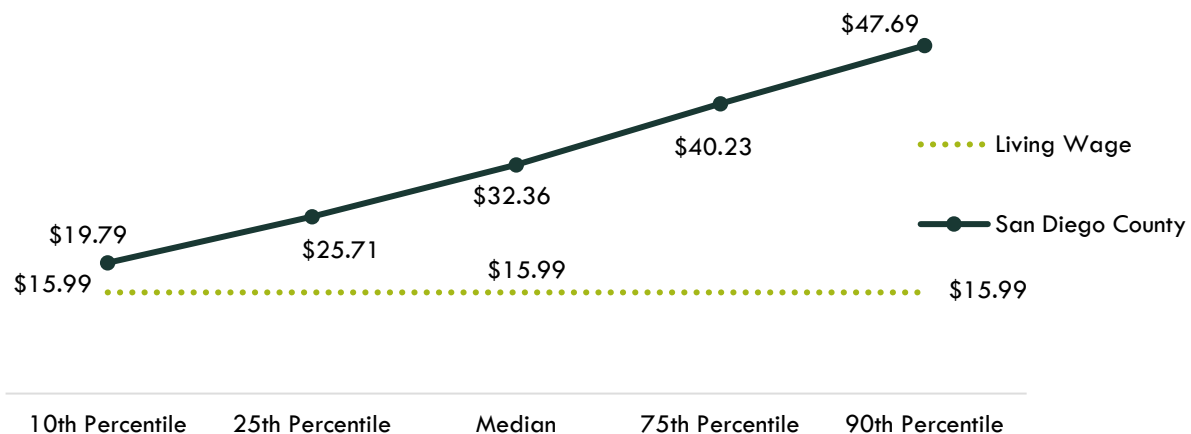
**Exhibit 2: Number of Online Job Postings for Firefighters in San Diego County (2010-2019)<sup>3</sup>**



## Earnings

*Firefighters* receive median hourly earnings of **\$32.36**; this is more than the living wage for a single adult in San Diego County, which is **\$15.99** per hour (Exhibit 3).<sup>4</sup>

**Exhibit 3: Hourly Earnings<sup>5</sup> for Firefighters in San Diego County<sup>6</sup>**



<sup>3</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2010-2019.

<sup>4</sup> "California Family Needs Calculator (formerly the Self-Sufficiency Standard)," Insight: Center for Community Economic Development, last updated 2018. [insightccd.org/2018-self-sufficiency-standard](https://insightccd.org/2018-self-sufficiency-standard).

<sup>5</sup> 10th and 25th percentiles could be considered entry-level wages, and 75th and 90th percentiles could be considered experienced wages for individuals who may have been in the occupation longer, received more training than others, etc.

<sup>6</sup> Emsi 2020.01; QCEW, Non-QCEW, Self-Employed.

## Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of awards in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes.<sup>7</sup> There are **three** TOP codes and **six** CIP codes related to *Firefighters* (Exhibit 4).

**Exhibit 4: Related TOP and CIP Codes for Firefighters**

<i>Firefighters</i>
TOP 213300: Fire Technology
TOP 213310: Wildland Fire Technology
TOP 213350: Fire Academy
CIP 43.0201: Fire Prevention and Safety Technology/Technician
CIP 43.0203: Fire Science/Fire-fighting
CIP 43.0204: Fire Systems Technology
CIP 43.0205: Fire/Arson Investigation and Prevention
CIP 43.0206: Wildland/Forest Firefighting and Investigation

According to TOP data, **three** community colleges supply the region with awards for this occupation: **Palomar College, San Diego Miramar College, and Southwestern College**. According to CIP data, **zero** non-community colleges supply the region with awards (Exhibit 5).

**Exhibit 5: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions (Program Year 2014-15 through PY2017-18 Average)**

TOP6 or CIP	TOP6 or CIP Title	3-Yr Annual Average CC Awards (PY15-16 to PY17-18)	Other Educational Institutions 3-Yr Annual Average Awards (PY14-15 to PY16-17)	3-Yr Total Average Supply (PY14-15 to PY17-18)
213300	Fire Technology	<b>243</b>	<b>0</b>	<b>243</b>
	<ul style="list-style-type: none"> <li>Palomar</li> </ul>	138	0	
	<ul style="list-style-type: none"> <li>San Diego Miramar</li> </ul>	78	0	

<sup>7</sup> TOP data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data).

TOP6 or CIP	TOP6 or CIP Title	3-Yr Annual Average CC Awards (PY15-16 to PY17-18)	Other Educational Institutions 3-Yr Annual Average Awards (PY14-15 to PY16-17)	3-Yr Total Average Supply (PY14-15 to PY17-18)
	• Southwestern	27	0	
213350	Fire Academy	7	0	7
	• Palomar	7	0	
			<b>Total</b>	<b>250</b>

## Demand vs. Supply

Comparing labor demand (annual openings) with labor supply<sup>8</sup> suggests that there is a **supply gap** for this occupation in San Diego County, with **279** annual openings and **250** awards. Comparatively, there are **2,734** annual openings in California and **4,392** awards<sup>9</sup> (Exhibit 6).

### Exhibit 6: Labor Demand (Annual Openings) Compared with Labor Supply (Average Annual Awards)

Community Colleges and Other Postsecondary Educational Institutions	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or <b>Oversupply</b>
San Diego	279	250	<b>29</b>
California	2,734	4,392	<b>1,658</b>

**Please note:** This is a basic analysis of supply and demand of labor. The data does not include workers currently in the labor force who could fill these positions or workers who are not captured by publicly available data. This data should be used to discuss the potential gaps or oversupply of workers; however, it should not be the only basis for determining whether or not a program should be developed.

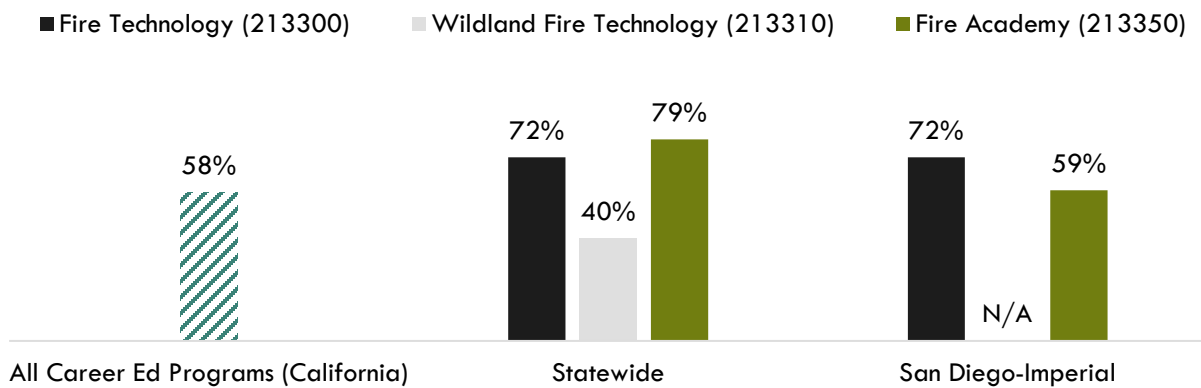
<sup>8</sup> Labor supply can be found from two different sources: EMSI or the California Community Colleges Chancellor's Office MIS Data Mart. EMSI uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.

<sup>9</sup> "Supply and Demand," Centers of Excellence Student Outcomes, [coecc.net/Supply-and-Demand.aspx](http://coecc.net/Supply-and-Demand.aspx).

## Student Outcomes and Regional Comparisons

According to the California Community Colleges LaunchBoard, between 59 and 72 percent of students in the San Diego-Imperial region earned a living wage after completing a program related to *Firefighters*, compared to 40 to 79 percent statewide and 58 percent of students in Career Education programs in general across the state (Exhibit 7a).

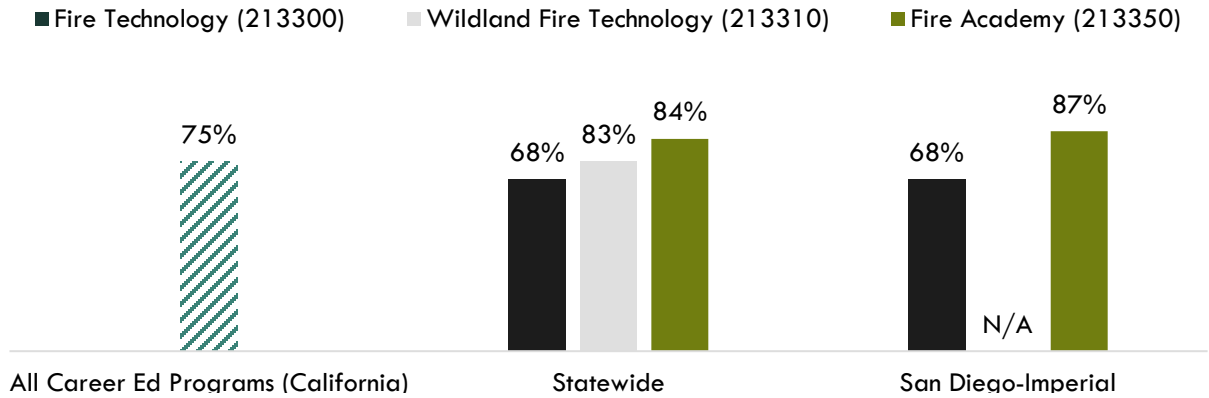
**Exhibit 7a: Proportion of Students Who Earned a Living Wage, PY2015-16<sup>10</sup>**



According to the California Community Colleges LaunchBoard, 68 to 87 percent of students in the San Diego-Imperial region obtained a job closely related to their field of study after completing a program related to *Firefighters*, compared to 68 to 84 percent statewide and 75 percent of students in Career Education programs in general across the state (Exhibit 7b).

<sup>10</sup> Among completers and skills builders who exited, the proportion of students who attained a living wage.

**Exhibit 7b: Percentage of Students in a Job Closely Related to Field of Study, PY2014-15<sup>11</sup>**



**Top Employers and Work Locations**

Between January 1, 2017 and December 31, 2019, the top five employers in San Diego County for this occupation were U.S. Navy, U.S. Marine Corps, General Dynamics, Viejas Enterprises, and U.S. Army (Exhibit 8).

**Exhibit 8: Top Employers in San Diego County for Firefighters<sup>12</sup>**

Top Employers	
<ul style="list-style-type: none"> <li>• U.S. Navy</li> <li>• U.S. Marine Corps</li> <li>• General Dynamics</li> <li>• Viejas Enterprises</li> <li>• U.S. Army</li> </ul>	<ul style="list-style-type: none"> <li>• Classics 4 Kids</li> <li>• City Poway</li> <li>• U.S. Government</li> <li>• Commend the Leap</li> <li>• Commander</li> </ul>

**Skills, Education, and Certifications**

Exhibit 9 indicates the educational attainment for the occupation found currently in the national labor force. The typical on-the-job training for this profession is long-term on-the-job training. The typical entry-level education is a postsecondary non-degree award.<sup>13</sup>

<sup>11</sup> Most recent year with available data is Program Year 2014-15. Percentage of Students in a Job Closely Related to Field of Study: Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

<sup>12</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2017-2019.

<sup>13</sup> Emsi 2020.01; QCEW, Non-QCEW, Self-Employed.

### Exhibit 9: National Educational Attainment of Firefighters<sup>14</sup>

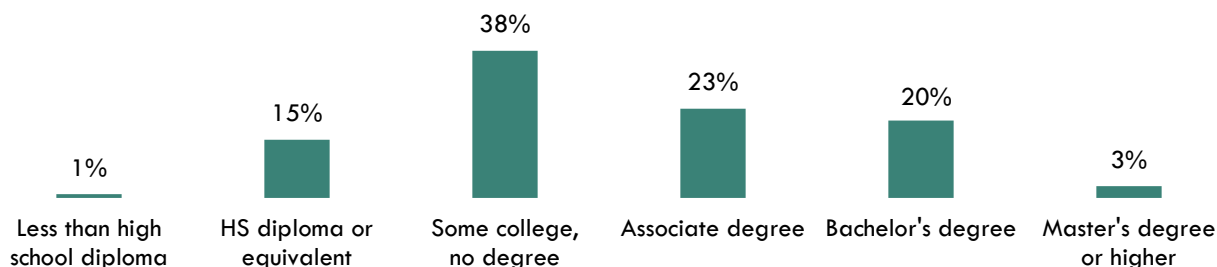


Exhibit 10 lists the top specialized, soft, and software skills that appeared in online job postings between January 1, 2017 and December 31, 2019

### Exhibit 10: Top Skills for Firefighters in San Diego County<sup>15</sup>

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> <li>• Cardiopulmonary Resuscitation</li> <li>• Fire Protection</li> <li>• Advanced Cardiac Life Support</li> <li>• Fire Suppression</li> <li>• Life Support</li> </ul>	<ul style="list-style-type: none"> <li>• Physical Abilities</li> <li>• Communication Skills</li> <li>• Building Effective Relationships</li> <li>• Detail-Oriented</li> <li>• Organizational Skills</li> </ul>	<ul style="list-style-type: none"> <li>• Flickr</li> </ul>

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<sup>14</sup> "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," Bureau of Labor Statistics, last modified October 18, 2018. [bls.gov/emp/tables/educational-attainment.htm](https://www.bls.gov/emp/tables/educational-attainment.htm).

<sup>15</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2017-2019.



**Important Disclaimers**

All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. This study examines the most recent data available at the time of the analysis; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and the report findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.