

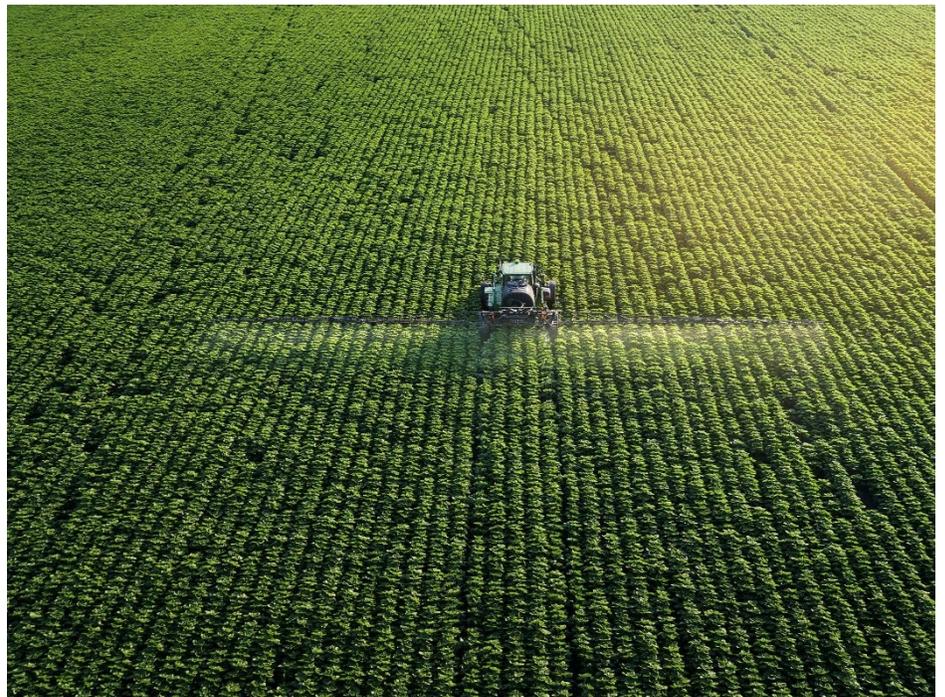
March 2022

Labor Market Analysis

Integrated Pest Management/Pest Control Advisor



POWERED BY



Prepared by the Central Valley/Mother Lode Center of Excellence

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COVID-19 Statement: This report includes employment projection data by Emsi. Emsi’s projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy during the projection period will be at approximately full employment or potential output. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, they may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Other measures such as unemployment rates and monthly industry employment estimates will reflect the most recent information on employment and jobs in the state and, in combination with input from local employers, may help validate current and future employment needs as depicted here.

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Summary

Please note the COVID-19 statement on page 2 when considering this report's findings.

This study conducted by the Central Valley/Mother Lode Center of Excellence examines labor market demand, wages, skills, and postsecondary supply for integrated pest management/pest control advisor. Two occupations related to integrated pest management/pest control advisor were identified for West Hills Coalinga College:

- 37-3012, Pesticide Handlers, Sprayers, and Applicators, Vegetation
- 45-1011, First-Line Supervisors of Farming, Fishing, and Forestry Workers

Key findings:

- **Occupational demand** — Nearly 4,080 workers were employed in jobs related to integrated pest management/pest control advisor in 2020 in the South Central Valley/Southern Mother Lode (SCV/SML) subregion. The largest occupation is first-line supervisors of farming, fishing, and forestry workers with 3,716 workers in 2020, a projected growth rate of 2% over the next five years, and 561 annual openings.
- **Wages** — First-line supervisors of farming, fishing, and forestry workers earn the highest entry-level wage, \$14.50/hour in the subregion.
- **Employers** — Employers with the most job postings in the subregion are Pacific Gas and Electric Company, Davey Resource Group, and Elite Team Offices.
- **Occupational titles** — The most common occupational title in job postings in the subregion is pesticide handlers, sprayers, and applicators, vegetation. The most common job title is spray technician.
- **Skills and certifications** — The top baseline skill is physical abilities, the top specialized skill is customer service, and the top software skill is Microsoft Office. The most in-demand certification is a driver's license.
- **Education** — A high school diploma or equivalent is typically required for the two occupations.
- **Supply** — Analysis of postsecondary completions shows that on average five awards were conferred in the Central Valley/Mother Lode region each year.

Based on a comparison of occupational demand and supply, there is an undersupply of 609 trained workers in the subregion and 832 workers in the region. The Center of Excellence recommends that West Hills Coalinga College work with the regional directors, the college's advisory board, and local industry in the expansion of programs to address the shortage of integrated pest management/pest control advisor workers in the region.

Introduction

The Central Valley/Mother Lode Center of Excellence was asked by West Hills Coalinga College to provide labor market information for integrated pest management/pest control advisor. The geographical focus for this report is the South Central Valley/Southern Mother Lode (SCV/SML) subregion, but regional demand and supply data has been included for broader applicability and use. The average living wage for a single adult in the SCV/SML subregion is \$11.91/hour.¹ Analysis of the program and occupational data related to integrated pest management/pest control advisor resulted in the identification of applicable occupations. The Standard Occupational Classification (SOC) System codes and titles used in this report are:

- 37-3012, Pesticide Handlers, Sprayers, and Applicators, Vegetation
- 45-1011, First-Line Supervisors of Farming, Fishing, and Forestry Workers

The occupational titles, job descriptions, sample job titles, and knowledge and skills from the Bureau of Labor Statistics and O*NET OnLine are shown below.

Pesticide Handlers, Sprayers, and Applicators, Vegetation

Job Description: Mix or apply pesticides, herbicides, fungicides, or insecticides through sprays, dusts, vapors, soil incorporation, or chemical application on trees, shrubs, lawns, or crops. Usually requires specific training and state or federal certification.

Knowledge: Biology, Customer and Personal Service, Production and Processing, English Language, Administration and Management

Skills: Active Listening, Critical Thinking, Speaking, Time Management, Complex Problem Solving

First-Line Supervisors of Farming, Fishing, and Forestry Workers

Job Description: Directly supervise and coordinate the activities of agricultural, forestry, aquacultural, and related workers.

Knowledge: Administration and Management, Production and Processing, Mechanical, Education and Training, English Language

Skills: Active Listening, Judgment and Decision Making, Monitoring, Critical Thinking, Management of Personnel Resources

Occupational Demand

The SCV/SML subregion employed 4,075 workers in integrated pest management/pest control advisor occupations in 2020 (Exhibit 1). The largest occupation is first-line supervisors of farming, fishing, and forestry workers with 3,716 workers in 2020. This occupation is projected to grow by 2% over the next five years and has the greatest number of projected annual openings, 561.

¹ The term "living wage" in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center's California Family Needs Calculator for each county in the subregion: <https://insightccd.org/tools-metrics/self-sufficiency-standard-tool-for-california/>.

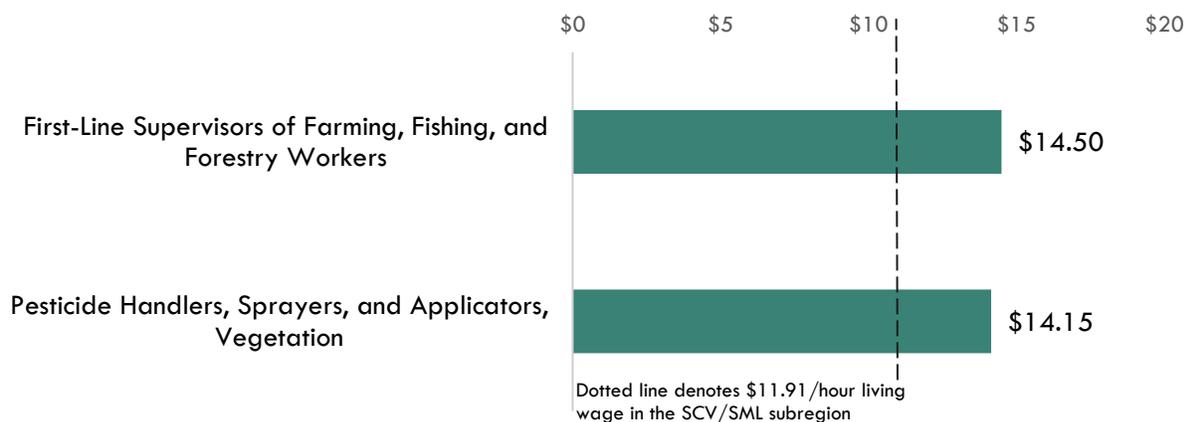
Exhibit 1. Integrated pest management/pest control advisor employment and occupational projections in the SCV/SML subregion

Occupation	2020 Jobs	2025 Jobs	5-Year Change	5-Year % Change	Annual Openings
First-Line Supervisors of Farming, Fishing, and Forestry Workers	3,716	3,795	78	2%	561
Pesticide Handlers, Sprayers, and Applicators, Vegetation	359	373	14	4%	53
TOTAL	4,075	4,168	93	2%	614

Wages

Exhibit 2 shows the entry-level hourly wages of the integrated pest management/pest control advisor occupations. First-line supervisors of farming, fishing, and forestry workers earn the highest entry-level wage, \$14.50/hour in the subregion. Entry-level wages are derived from the 25th percentile.

Exhibit 2. Integrated pest management/pest control advisor entry-level wages in the SCV/SML subregion



Job Postings

There were 31 job postings for the two occupations in the SCV/SML subregion from September 2021 to February 2022.² The employers with the most job postings are listed in Exhibit 3.

² Other than occupation titles and job titles, the categories below can be counted one or multiple times per job posting, and across several areas in a single posting. For example, a skill can be counted in two different skill types, and an employer can indicate more than one education level.

Exhibit 3. Top employers of integrated pest management/pest control advisor by number of job postings

Employer	Job Postings	% Job Postings
Pacific Gas and Electric Company	3	11%
Davey Resource Group	2	7%
Elite Team Offices	2	7%
Kellogg Company	2	7%
Mge	2	7%
Wilbur Ellis	2	7%
Able Industries	1	4%
Acrt Services	1	4%
Bcd Travel	1	4%
Bee Sweet Citrus	1	4%

Exhibit 4 shows how job postings for the targeted occupations in the SCV/SML subregion are distributed across three O*NET OnLine occupations. The occupational title pesticide handlers, sprayers, and applicators, vegetation is listed in 27 job postings. Note how this occupational title dominates the job posting results. Common job titles in postings include Spray Technician in five job postings, Vegetation Management Inspector in five job postings, and Pesticide Applicator in two job postings.

Exhibit 4. Top occupational titles in job postings for integrated pest management/pest control advisor

Occupational Title	Job Postings	% of Job Postings
Pesticide Handlers, Sprayers, and Applicators, Vegetation	27	87%
First-Line Supervisors of Agricultural Crop and Horticultural Workers	3	10%
First-Line Supervisors of Logging Workers	1	3%

Salaries

Exhibit 5 shows the “Market Salaries” for integrated pest management/pest control advisor occupations that are calculated by Burning Glass which uses a machine learning model built off of millions of job postings every year, and accounts for adjustments based on locations, industry, skills, experience, education requirements, among other variables.

Exhibit 5. Salaries for integrated pest management/pest control advisor occupations

Market Salary Percentile	Salary Amount
10th Percentile	\$27,370
25th Percentile	\$30,060
50th Percentile	\$32,705
75th Percentile	\$41,170
90th Percentile	\$48,048

Education

Of the 31 job postings, 17 listed an education level preferred for the positions being filled. Among those, 82% requested high school or vocational training, 18% requested an associate degree, and 6% requested a bachelor's degree (Exhibit 6). A job posting can indicate more than one education level. Hence, the percentages shown in the chart below may total more than 100%.

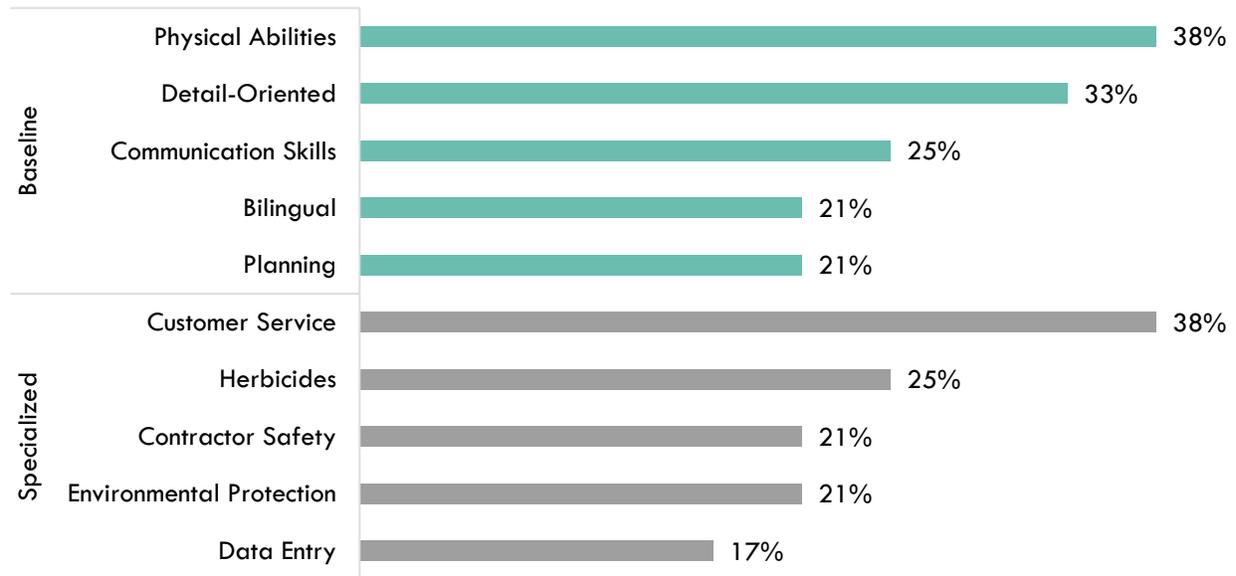
Exhibit 6. Education levels requested in job postings for integrated pest management/pest control advisor

Education Level	Job Postings	% of Job Postings
High school or vocational training	14	82%
Associate's degree	3	18%
Bachelor's degree	1	6%

Baseline and Specialized Skills

Exhibit 7 depicts the top baseline and specialized skills for the targeted occupations. The three most important baseline skills are physical abilities, 38% of job postings, detail-oriented, 33%, and communication skills, 25%. The top three specialized skills are customer service, 38% of job postings, herbicides, 25%, and contractor safety, 21%.

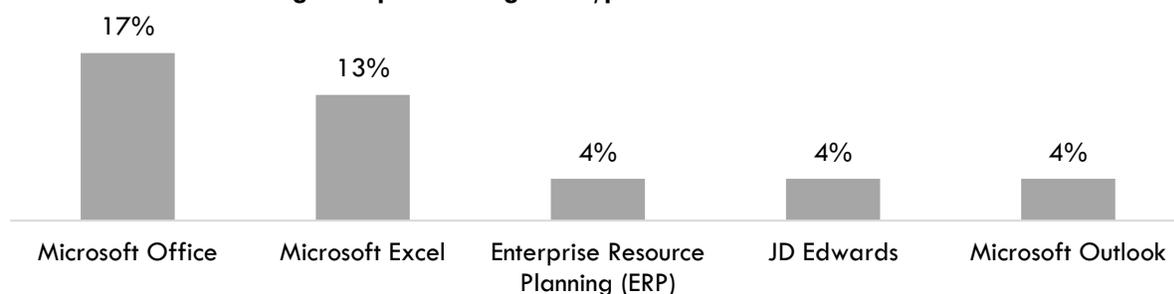
Exhibit 7. In-demand integrated pest management/pest control advisor baseline and specialized skills



Software Skills

Analysis also included the software skills most in demand by employers. Microsoft Office and Excel were the top two software skills identified in job postings (Exhibit 8).

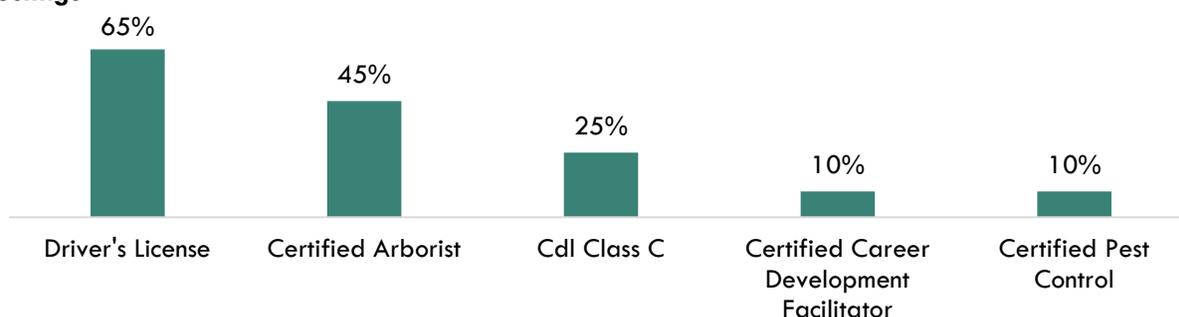
Exhibit 8. In-demand integrated pest management/pest control advisor software skills



Certifications

Of the 31 job postings, 20 contained certification data. Among those, 65% indicated a need for a driver's license. The next top certifications are Certified Arborist and Cdl Class C (Exhibit 9)

Exhibit 9. Top integrated pest management/pest control advisor certifications requested in job postings



Education, Work Experience & Training

A high school diploma or equivalent is typically required for the two occupations (Exhibit 10).

Exhibit 10. Education, work experience, training, and Current Population Survey results for integrated pest management/pest control advisor occupations³

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training	CPS
First-Line Supervisors of Farming, Fishing, and Forestry Workers	High school diploma or equivalent	Less than 5 years	None	21.9%
Pesticide Handlers, Sprayers, and Applicators, Vegetation	High school diploma or equivalent	None	Moderate-term	32.8%

³ "Labor Force Statistics from the Current Population Survey," Bureau of Labor Statistics, <https://www.bls.gov/cps/>.

Supply

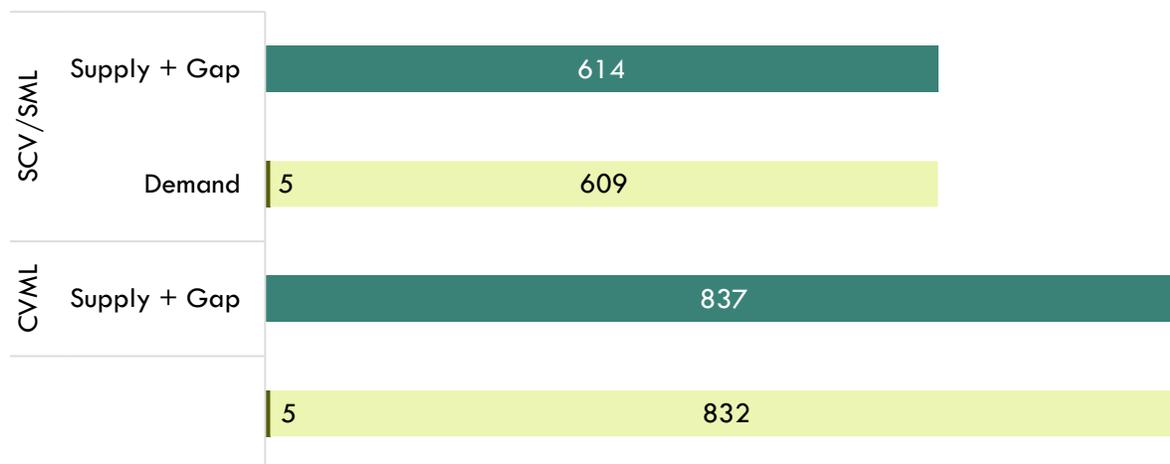
Analysis of program data from the California Community Colleges Chancellor’s Office Data Mart included the TOP code and title: 010310 - Agricultural Pest Control Adviser and Operator (Licensed). Analysis of the last three years of data shows that, on average, 5 awards were conferred in the Central Valley/Mother Lode region each year (Exhibit 11).

Exhibit 11. Postsecondary supply for integrated pest management/pest control advisor occupations in the region

TOP/CIP Code- Title	College	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Subtotal
010310 - Agricultural Pest Control Adviser and Operator (Licensed)	Sequoias	0	1	0	2
	West Hills Coalinga	1	2		3
TOTAL		2	3	0	5

There is an undersupply of 609 integrated pest management/pest control advisor workers in the SCV/SML subregion and 832 workers in the region (Exhibit 12).

Exhibit 12. Integrated pest management/pest control advisor workforce demand (annual job openings), postsecondary supply of students (awards), and additional students needed to fill gap in the SCV/SML subregion and region



Student Outcomes

Exhibit 13 summarizes employment and wage outcomes from the California Community College Chancellor's Cal-PASS Plus LaunchBoard for the TOP code related to integrated pest management/pest control advisor. Of note, 1% of students had a median change in earnings; and 74% of students attained a living wage.

Exhibit 13. Subregional metrics for the TOP code related to integrated pest management/pest control advisor

Metric	Agricultural Pest Control Adviser and Operator (Licensed) 010310
Students Who Got a Degree or Certificate or Attained Apprenticeship Journey Status	*
Number of Students Who Transferred	*
Job Closely Related to Field of Study	*
Median Change in Earnings	1%
Attained a Living Wage	74%
* denotes data not available.	

Conclusion

The entry-level wages of the two occupations exceed the SCV/SML subregion's average living wage. There were 31 job postings in the past six months for occupations related to integrated pest management/pest control advisor in the subregion. Analysis of skills and certification requirements in job postings indicates:

- The top baseline skill is physical abilities, and the top specialized skill is customer service.
- The top software skill is Microsoft Office.
- The top certification is a driver's license.

There is an undersupply of trained workers, a shortage of 609 in the SCV/SML subregion and 832 in the region.

Recommendation

Based on these findings, it is recommended that West Hills Coalinga College work with the regional director, the college's advisory board, and local industry in the expansion of programs to address the shortage of integrated pest management/pest control advisor in the region.

Appendix A: Methodology & Data Sources

Data Sources

Labor market and educational supply data compiled in this report derive from a variety of sources. Data were drawn from external sources, including the Economic Modeling Specialists, Inc., the California Community Colleges Chancellor’s Office Management Information Systems Data Mart and the National Center for Educational Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS). Below is the summary of the data sources found in this study.

Data Type	Source
Labor Market Information/Population Estimates and Projections/Educational Attainment	Economic Modeling Specialists, Intl. (EMSI). EMSI occupational employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level EMSI earnings by industry: economicmodeling.com .
Typical Education Level and On-the-job Training	Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education and typical on-the-job training to each occupation for which BLS publishes projections data: https://www.bls.gov/emp/tables/educational-attainment.htm .
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: labormarketinfo.edd.ca.gov .
Job Posting and Skills Data	Burning Glass: burning-glass.com/ .
Additional Education Requirements/ Employer Preferences	The O*NET Job Zone database includes over 900 occupations as well as information on skills, abilities, knowledge, work activities and interests associated with specific occupations: onetonline.org .

Key Terms and Concepts

Annual Job Openings: Annual openings are calculated by dividing the number of years in the projection period by total job openings.

Education Attainment Level: The highest education attainment level of workers age 25 years or older.

Employment Estimate: The total number of workers currently employed.

Employment Projections: Projections of employment are calculated by a proprietary Economic Modeling Specialists, Intl. (EMSI) formula that includes historical employment and economic indicators along with national, state and local trends.

Living Wage: The cost of living in a specific community or region for one adult and no children. The cost increases with the addition of children.

Occupation: An occupation is a grouping of job titles that have a similar set of activities or tasks that employees perform.

Percent Change: Rate of growth or decline in the occupation for the projected period; this does not factor in replacement openings.

Replacements: Estimate of job openings resulting from workers retiring or otherwise permanently leaving an occupation. Workers entering an occupation often need training. These replacement needs, added to job openings due to growth, may be used to assess the minimum number of workers who will need to be trained for an occupation.

Total Job Openings (New + Replacements): Sum of projected growth (new jobs) and replacement needs. When an occupation is expected to lose jobs, or retain the current employment level, number of openings will equal replacements.

Typical Education Requirement: represents the typical education level most workers need to enter an occupation.

Typical On-The-Job Training: indicates the typical on-the-job training needed to attain competency in the skills needed in the occupation.