

November 2020

# Labor Market Analysis

## Landscape Arborists

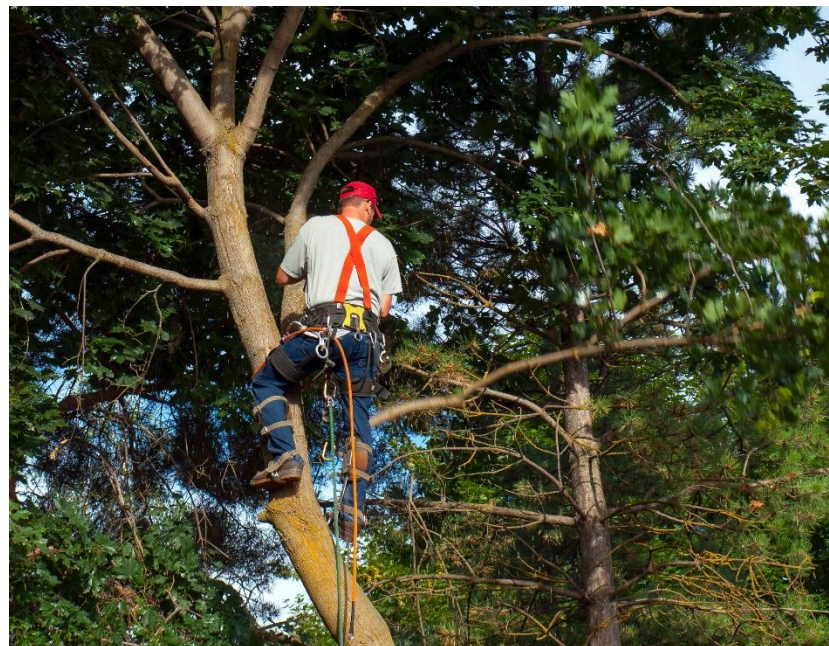


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Prepared by the Central Valley/Mother Lode Center of Excellence

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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 landscape arborist. Two occupations related to landscape arborist were identified for San Joaquin Delta College:

- 37-1012, First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers
- 37-3012, Pesticide Handlers, Sprayers, and Applicators, Vegetation

## Key findings:

- **Occupational demand** — Nearly 890 workers were employed in jobs related to landscape arborist in 2019 in the North Central Valley/Northern Mother Lode (NCV/NML) subregion. The largest occupation is first-line supervisors of landscaping, lawn service, and groundskeeping workers with 695 workers in 2019, a projected growth rate of 8% over the next five years, and 90 annual openings.
- **Wages** — Pesticide handlers, sprayers, and applicators (vegetation) earn the highest entry-level wages, \$17.45/hour in the subregion and \$13.46/hour in the region.
- **Employers** — Employers with the most job postings in the subregion are Brightview, Butlers Mobile Cleaning Source, and ABM Industries.
- **Occupational titles** — The most common occupational title in job postings in the subregion is first-line supervisors of landscaping, lawn service, and groundskeeping workers. The most common job title is landscaping crew leader.
- **Skills and certifications** — The top baseline skill is preventive maintenance, the top specialized skill is oral irrigation, and the top software skill is Microsoft Excel. 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 in the region shows that on average 27 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 107 trained workers in the subregion and 281 workers in the region. The Center of Excellence recommends that San Joaquin Delta College work with the regional director, the college's advisory board, and local industry in the expansion or development of programs to address the shortage of landscape arborist workers in the region.

# Introduction

The Central Valley/Mother Lode Center of Excellence was asked by San Joaquin Delta College to provide labor market information for landscape arborists. The geographical focus for this report is the North Central Valley/Northern Mother Lode (NCV/NML) 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 North Central Valley/Northern Mother Lode (NCV/NML) subregion is \$10.27/hour.<sup>1</sup>

Analysis of the program and occupational data related to landscape arborists resulted in the identification of applicable occupations. The Standard Occupational Classification (SOC) System codes and titles used in this report are:

- 37-1012, First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers
- 37-3012, Pesticide Handlers, Sprayers, and Applicators, Vegetation

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.

## **First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers**

**Job Description:** Directly supervise and coordinate activities of workers engaged in landscaping or groundskeeping activities. Work may involve reviewing contracts to ascertain service, machine, and workforce requirements; answering inquiries from potential customers regarding methods, material, and price ranges; and preparing estimates according to labor, material, and machine costs.

**Knowledge:** English Language, Administration and Management, Customer and Personal Service, Mathematics, Personnel and Human Resources

**Skills:** Active Listening, Coordination, Critical Thinking, Management of Personnel Resources, Monitoring

## **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 botanical 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, Coordination, Critical Thinking, Management of Personnel Resources, Monitoring

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<sup>1</sup> 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/>.

# Occupational Demand

The North Central Valley/Northern Mother Lode subregion employed 888 workers in landscape arborist occupations in 2019 (Exhibit 1). The largest occupation is first-line supervisors of landscaping, lawn service, and groundskeeping workers with 695 workers in 2019. This occupation is projected to grow by 8% over the next five years and has the greatest number of projected annual openings, 90.

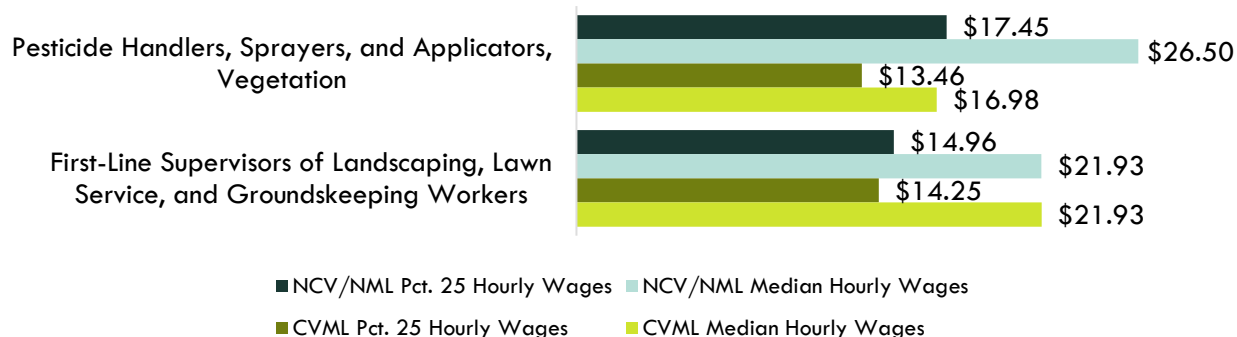
**Exhibit 1. Landscape arborist employment and occupational projections in the NCV/NML subregion**

Occupation	2019 Jobs	2024 Jobs	5-Year Change	5-Year % Change	Annual Openings
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	695	750	55	8%	90
Pesticide Handlers, Sprayers, and Applicators, Vegetation	193	212	19	10%	30
<b>TOTAL</b>	<b>888</b>	<b>962</b>	<b>74</b>	<b>8%</b>	<b>120</b>

## Wages

Exhibit 2 compares the entry-level and experienced wages of the landscape arborist occupations. Pesticide handlers, sprayers, and applicators (vegetation) earn the highest entry-level wages, \$17.45/hour in the subregion and \$13.46/hour in the region.

**Exhibit 2. Entry-level and experienced wage comparison in the NCV/NML subregion and region**



## Job Postings

There were 24 job postings for the two occupations in the NCV/NML subregion from May to October 2020.<sup>2</sup> The employers with the most job postings are listed in Exhibit 3.

**Exhibit 3. Top employers of landscape arborists by number of job postings**

Employer	Job Postings	% Job Postings
Brightview	6	27%
Butlers Mobile Cleaning Source	3	14%
ABM Industries	2	9%
Orkin Incorporated	2	9%

<sup>2</sup> 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.

Employer	Job Postings	% Job Postings
Alley Tree And Landscape	1	5%
Almond Board California	1	5%
Knowles Vineyards & Ranch	1	5%
Marina Landscape	1	5%
Marina Landscape Incorporated	1	5%
Oakdale Golf Country Club	1	5%

Exhibit 4 shows how job postings for the targeted occupations in the NCV/NML subregion are distributed across two O\*NET OnLine occupations. The occupational title first-line supervisors of landscaping, lawn service, and groundskeeping workers is listed in 18 job postings. Note how a higher proportion of job postings are for this occupational title. Common job titles in postings include landscaping crew leader in five job postings, crew leader/truck washer in three job postings, and coatings applicator in two job postings.

**Exhibit 4. Top occupational titles in job postings for landscape arborists**

Occupational Title	Job Postings	% of Job Postings
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	18	75%
Pesticide Handlers, Sprayers, and Applicators, Vegetation	6	25%

**Salaries**

Exhibit 5 shows the “Market Salaries” for landscape arborist 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 landscape arborists**

Market Salary Percentile	Salary Amount
10th Percentile	\$26,543
25th Percentile	\$30,222
50th Percentile	\$39,876
75th Percentile	\$42,260
90th Percentile	\$45,886

**Education**

Of the 24 job postings, six listed an education level preferred for the positions being filled. Of those, 67% requested a bachelor’s degree, 33% requested high school or vocational training, and 17% requested an associate degree (Exhibit 6). A job posting can indicate more than one education level. Hence, the percentages shown in the chart below total more than 100%.

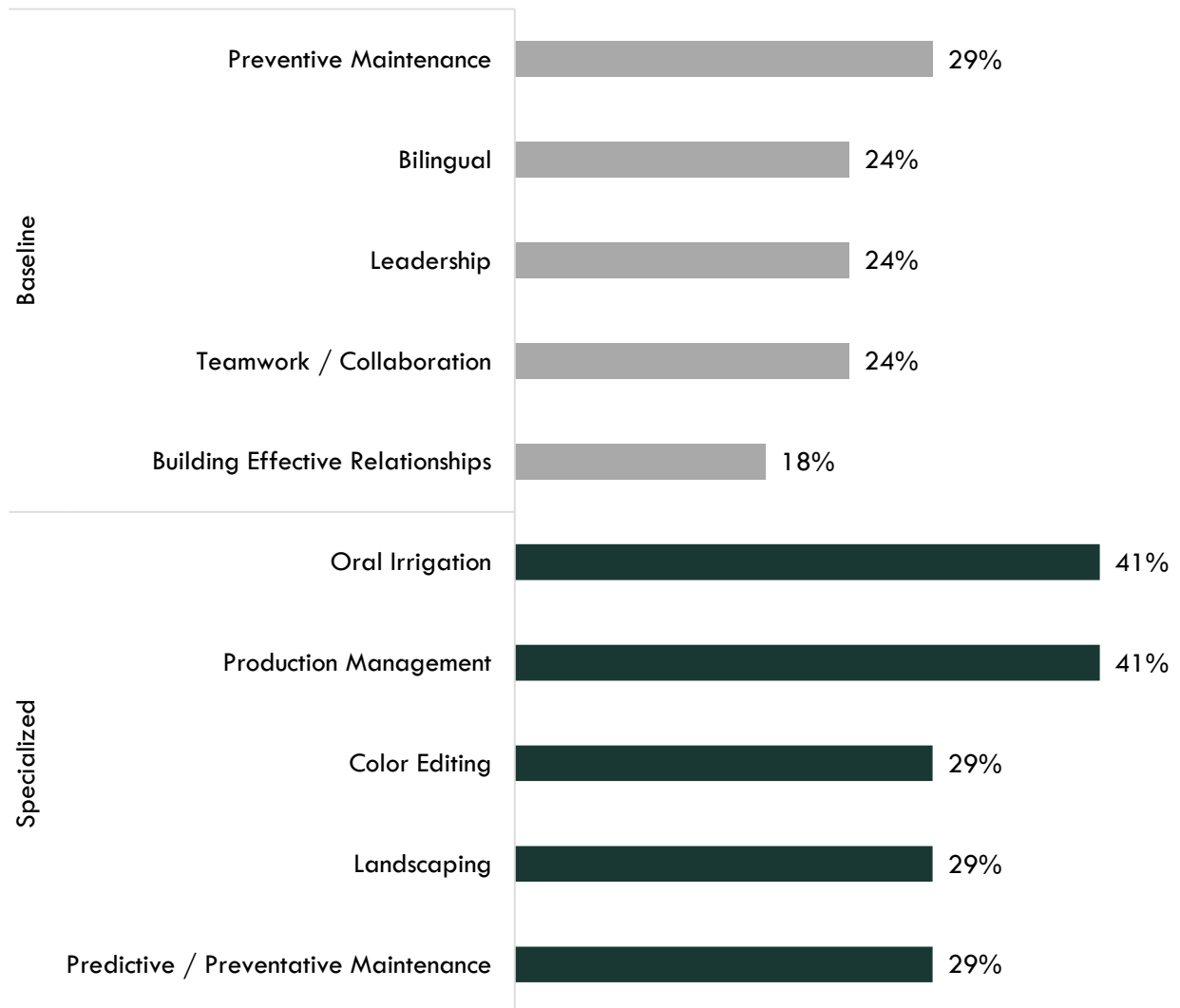
**Exhibit 6. Education levels requested in job postings for landscape arborists**

Education level	Job Postings	% of Job Postings
Bachelor's degree	4	67%
High school or vocational training	2	33%
Associate degree	1	17%

**Baseline and Specialized Skills**

Exhibit 7 depicts the top baseline and specialized skills for the targeted occupations. The three most important baseline skills are preventive maintenance, 29% of job postings, bilingual, 24%, and leadership, 24%. The top three specialized skills are oral irrigation, 41% of job postings, production management, 41%, and color editing, 29%.

**Exhibit 7. In-demand landscape arborist baseline and specialized skills**



### Software Skills

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

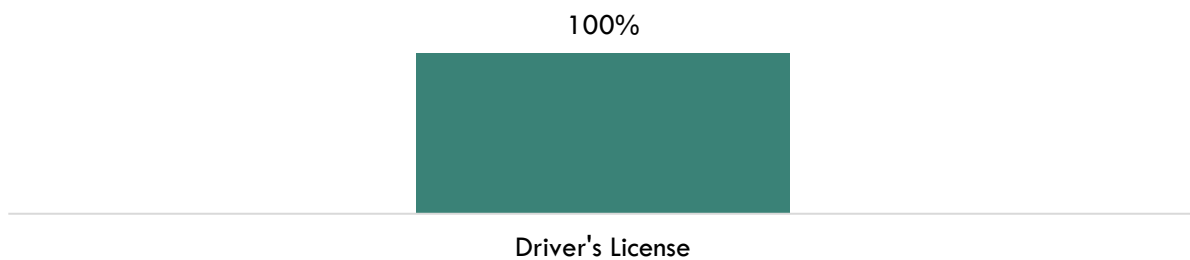
**Exhibit 8. In-demand landscape arborist software skills**



### Certifications

Of the 24 job postings, 11 contained certification data. Among those, 100% indicated a need for a driver's license (Exhibit 9). (Due to the low number of job postings with certifications listed, the chart below may not be representative of the full sample.)

**Exhibit 9. Top landscape arborist 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 landscape arborist occupations<sup>3</sup>**

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	High school diploma or equivalent	Less than 5 years	None
Pesticide Handlers, Sprayers, and Applicators, Vegetation	High school diploma or equivalent	None	Moderate-term

<sup>3</sup> "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 Taxonomy of Programs (TOP) and Classification of Instructional Programs (CIP) codes: 010900-Horticulture and 010910-Landscape Design and Maintenance. Analysis of the last three years of TOP code data shows that, on average, 27 awards were conferred in the Central Valley/Mother Lode region each year (Exhibit 11).

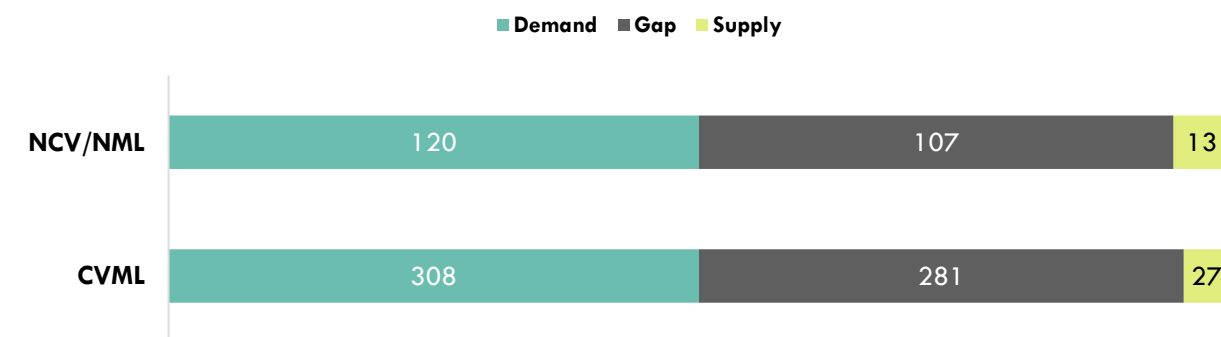
**Exhibit 11. Postsecondary supply for landscape arborist occupations in the region**

TOP Code - Title	Colleges	Associate Degree	Certificate 18 < 30 semester units	Certificate 30 < 60 semester units	Certificate 6 < 18 semester units	Subtotal
010900 - Horticulture	Bakersfield	2		1		3
	Merced	5		1		6
	Modesto	2				2
	San Joaquin Delta	1				1
	Sequoias	1	3			5
010910 - Landscape Design and Maintenance	San Joaquin Delta		2	1		3
	Sequoias	1	2	0	3	6
<b>TOTAL</b>		<b>13</b>	<b>7</b>	<b>3</b>	<b>3</b>	<b>27</b>

## Gap Analysis

There is an undersupply of 107 landscape arborist workers in the NCV/NML subregion and 281 workers in the region (Exhibit 12).

**Exhibit 12. Landscape arborist workforce annual demand and supply in the NCV/NML 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 landscape arborist. There were 11 horticulture students who received a degree, certificate, or attained apprenticeship journey status, and 29 students who transferred. Of students who completed a program, 100% obtained a job closely related to field of study, and 59% median change in earnings.

### Exhibit 13. Regional metrics for the TOP code related to landscape arborists

Metric	010900 - Horticulture
Students Who Got a Degree or Certificate or Attained Apprenticeship Journey Status	11
Number of Students Who Transferred	29
Job Closely Related to Field of Study	100%
Median Change in Earnings	59%
Attained a Living Wage	59%
* denotes data not available.	

## Conclusion

The entry-level wages of the two occupations exceed the NCV/NML subregion's average living wage. There were 24 job postings in the past six months for occupations related to landscape arborist in the subregion. Analysis of skills and certification requirements in job postings indicates:

- The top baseline skill is preventive maintenance, and the top specialized skill is oral irrigation.
- The top software skill is Microsoft Excel.
- The top certification is a driver's license.

There is an undersupply of trained workers, a shortage of 107 in the NCV/NML subregion and 281 in the region.

## Recommendation

Based on these findings, it is recommended that San Joaquin Delta College work with the Agriculture, Water and Environmental Technologies Regional Director, the college's advisory board, and local industry in the expansion of programs to address the shortage of landscape arborist 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: <a href="http://economicmodeling.com">economicmodeling.com</a> .
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: <a href="https://www.bls.gov/emp/tables/educational-attainment.htm">https://www.bls.gov/emp/tables/educational-attainment.htm</a> .
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: <a href="http://labormarketinfo.edd.ca.gov">labormarketinfo.edd.ca.gov</a> .
Job Posting and Skills Data	Burning Glass: <a href="http://burning-glass.com/">burning-glass.com/</a> .
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: <a href="http://onetonline.org">onetonline.org</a> .

## 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.