

# LABOR MARKET ANALYSIS

FOR PROGRAM RECOMMENDATION



**C·O·E**

CENTERS OF EXCELLENCE  
FOR LABOR MARKET RESEARCH

## AGRICULTURAL MECHANICS & OPERATORS IN THE GREATER SACRAMENTO REGION

North (Greater Sacramento)  
Center of Excellence

January 2024

# TABLE OF CONTENTS

Summary .....	3
Introduction .....	4
Occupational Demand .....	5
Wages.....	7
Job Postings.....	8
About Job Postings Analysis .....	8
Job Postings vs. Hires.....	8
Top Employers and Job Titles.....	9
Top Skills and Qualifications .....	11
Education and Training Requirements.....	13
Educational Supply .....	15
Community College Supply.....	15
Other Postsecondary Supply.....	15
Findings .....	16
Recommendations.....	18
Appendix A. Methodology and Sources .....	19
Appendix B. Glossary .....	20
Appendix C. LMI for Lake County .....	22

***If, for any reason, this document is not accessible or if you have specific needs for readability, please contact us, and we will do our utmost to accommodate you with a modified version. To make a request, contact Ebony J. Benzing by phone at (916) 563-3215 or by email at [Ebony.Benzing@losrios.edu](mailto:Ebony.Benzing@losrios.edu).***

## SUMMARY

---

The North (Greater Sacramento) Center of Excellence for Labor Market Research prepared this report to provide a labor market analysis of educational supply and occupational demand for middle-skilled careers in the North (Greater Sacramento) subregion. This report aims to determine if demand in the local labor market is unmet by the supply from existing community college programs and other postsecondary training providers.

This report primarily focuses on training that leads to jobs in middle-skilled occupations - jobs that typically require education beyond a high school diploma but less than a bachelor's degree - but may include higher-skilled occupations for training pathways that lead to a bachelor's degree. Lowered skilled occupations are rarely considered in this analysis due to the lessened barriers for entry-level work, such as no formal education and fewer on-the-job training requirements.

Key findings include:

- The North (Greater Sacramento) subregion held 953 agricultural mechanic and operator-related jobs in 2022. These jobs are projected to increase by 9% over the next five years, adding 84 new jobs to the subregion by 2027.
- Over the next five years, agricultural mechanics and operator-related occupations are projected to have 149 annual openings in the North (Greater Sacramento) subregion.
- Analysis of wage data shows that the three occupations included in this report typically earn \$14.38 to \$18.05 per hour, which is below the subregion's living wage of \$18.72 per hour. (See Appendix B for notes about the updated living wage). However, the median wages for two of the three occupations exceed the living wage.
- Despite a low number of online job postings, local hiring is robust for these occupations.
- No local community college or non-community college postsecondary training provider in the Greater Sacramento subregion has issued awards in relevant programs over the last three years.

Recommendations include:

- The North (Greater Sacramento) Center of Excellence recommends creating new programs targeting these three occupations. However, community colleges should partner with local employers who can offer students and program graduates apprenticeships and jobs that pay a living wage.

# INTRODUCTION

---

The North (Greater Sacramento) Center of Excellence (COE) was asked to provide labor market information for a proposed program at a regional community college. This report focuses on the following three Standard Occupational Classification (SOC) occupations and codes:

- Agricultural Equipment Operators (45-2091)
- Farm Equipment Mechanics and Service Technicians (49-3041)
- Outdoor Power Equipment and Other Small Engine Mechanics (49-3053)

A review of related programs revealed the following Taxonomy of Programs (TOP) titles and codes are appropriate for inclusion in this report:

- Agricultural Power Equipment Technology (0116.00)
- Heavy Equipment Maintenance (0947.20)
- Heavy Equipment Operation (0947.30)
- Motorcycle, Outboard, and Small Engine Repair (0948.30)

The corresponding Classification of Instructional Program (CIP) titles and codes are:

- Agricultural Mechanization, General (01.0201)
- Agricultural Power Machinery Operation (01.0204)
- Agricultural Mechanics and Equipment/Machine Technology/Technician (01.0205)
- Small Engine Mechanics and Repair Technology/Technician (47.0606)

# OCCUPATIONAL DEMAND

Exhibit 1 summarizes the five-year projected job growth for the agricultural mechanics and operators-related occupations in North (Greater Sacramento)<sup>1</sup>, North/Far North, and California.

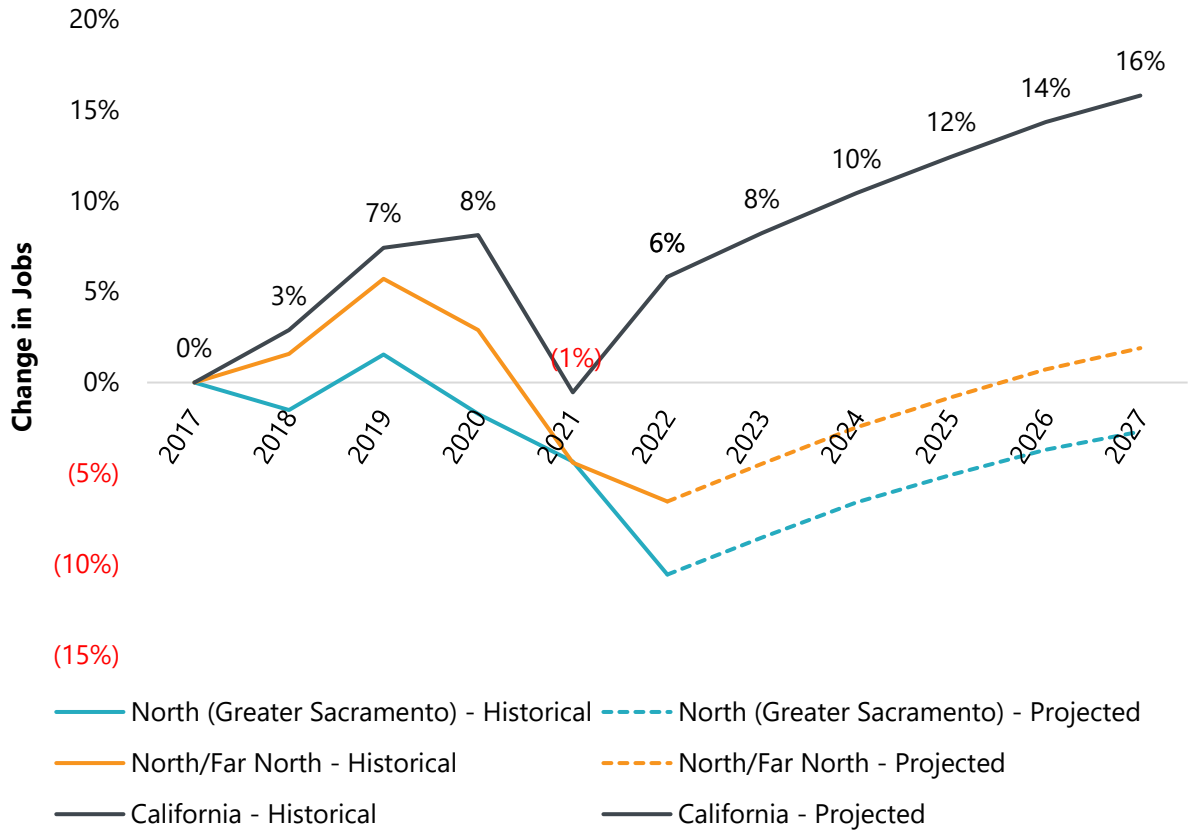
**Exhibit 1. Employment and projected demand, 2022-2027**

Occupation	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change	2022-2027 Annual Openings
Agricultural Equipment Operators	527	572	45	8%	97
Farm Equipment Mechanics and Service Technicians	171	185	14	8%	20
Outdoor Power Equipment and Other Small Engine Mechanics	255	280	25	10%	33
<b>North (Greater Sacramento)</b>	<b>953</b>	<b>1,037</b>	<b>84</b>	<b>9%</b>	<b>149</b>
Agricultural Equipment Operators	1,260	1,379	119	9%	234
Farm Equipment Mechanics and Service Technicians	345	382	37	11%	42
Outdoor Power Equipment and Other Small Engine Mechanics	395	420	24	6%	48
<b>North/Far North</b>	<b>2,000</b>	<b>2,181</b>	<b>181</b>	<b>9%</b>	<b>325</b>
Agricultural Equipment Operators	14,024	15,539	1,515	11%	2,665
Farm Equipment Mechanics and Service Technicians	3,750	4,088	337	9%	443
Outdoor Power Equipment and Other Small Engine Mechanics	3,603	3,764	161	4%	420
<b>California</b>	<b>21,378</b>	<b>23,392</b>	<b>2,014</b>	<b>9%</b>	<b>3,527</b>

<sup>1</sup> The North (Greater Sacramento) subregion covers seven counties, including El Dorado, Nevada, Placer, Sacramento, Sutter, Yolo, and Yuba.

Exhibit 2 compares the net changes in jobs between 2017 through 2022 and the projected changes through 2027. The rate of change is indexed to the total number of jobs in 2017.

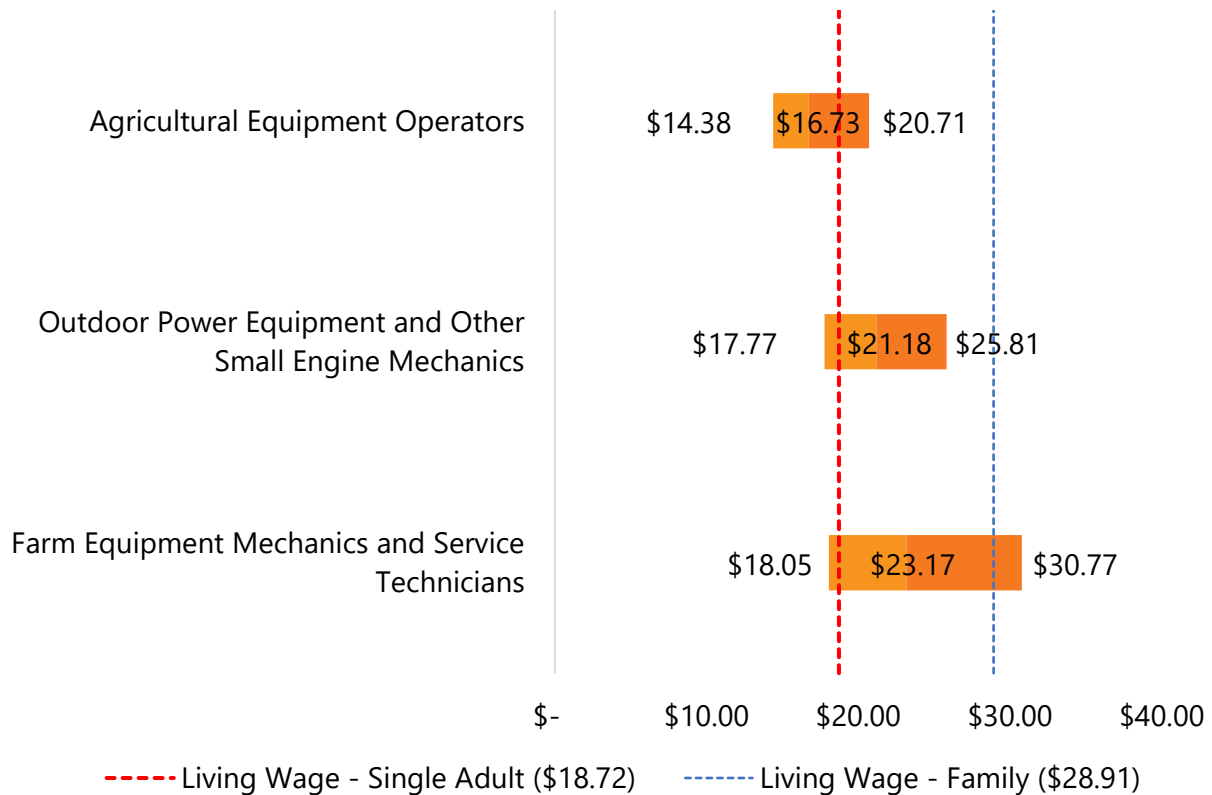
**Exhibit 2. Changes in employment, 2017-2027**



# WAGES

Exhibit 3 compares the 25<sup>th</sup> percentile, median, and 75<sup>th</sup> percentile hourly wages for the three agricultural mechanics and operators-related occupations to the Greater Sacramento living wage for one working adult (\$18.72 per hour) and a small family (\$28.91 per hour).<sup>2,3</sup> The 25<sup>th</sup> and 75<sup>th</sup> percentile hourly wages estimate entry-level and experienced worker wages.

**Exhibit 3. Hourly wages by occupation, 2022**



<sup>2</sup> Living wage is defined as the level of income one working adult with no children must earn to meet basic needs, including food, housing, transportation, healthcare, taxes, and other miscellaneous basic needs. Please note that the 25th-percentile and 75th-percentile hourly wages are used as proxy for entry-level and experienced-level wages.

<sup>3</sup> A small family is defined as one working adult and one school aged child (between the ages of 5 and 12 years).

# JOB POSTINGS

## About Job Postings Analysis

This section analyzes recent data from online job postings. Online job postings may provide additional insight into recent changes in the labor market that are not captured by historical trends. However, please note that job postings differ from labor market demand. Demand is based on projected jobs and annual openings. Job postings should be used to support and inform community college curriculum development and to identify potential employers for targeted experiential learning opportunities.

There are several limitations to analyzing and interpreting online job postings. Employers may post a position multiple times to increase the pool of job applicants. Job postings may remain online after a business chooses not to fill a position. Employers may advertise one posting to fill multiple vacancies. And not all jobs are posted online.

The North COE identified 21 online job postings for the selected occupations in the seven-county Greater Sacramento subregion. Job posting data comes from Lightcast (formerly Emsi Burning Glass) and represents unique advertisements newly posted online during the last 12 months, from January 2023 through December 2023.

## Job Postings vs. Hires

Exhibit 4 shows the monthly job postings for the selected occupations over the last 12 months. Between January and December 2023, the selected occupations had an average of 2 job postings per month. Please note that unclassified job titles are included in this dataset.

**Exhibit 4. Monthly Job Postings Trend**

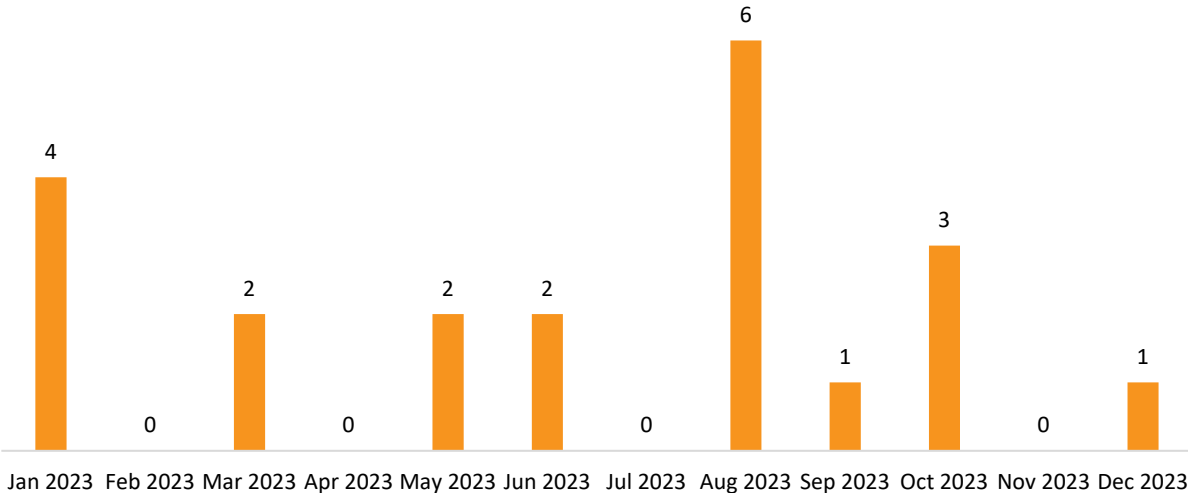




Exhibit 5 compares the average monthly job postings for the selected occupations to the average monthly hires over the last 12 months. The number of “hires” comes from the U.S. Census Bureau’s Quarter Workforce Indicators (QWI) report. A hire happens when an individual's social security number appears on a business’s payroll and was not there the previous quarter. Please note that unclassified job titles are included in this dataset.

#### Exhibit 4. Job Postings vs. Hiring

Occupation	Average Monthly Postings (Jan-Dec 2023)	Average Monthly Hires (Jan-Dec 2023)
Outdoor Power Equipment and Other Small Engine Mechanics	1	14
Farm Equipment Mechanics and Service Technicians	1	11
Agricultural Equipment Operators	<1	106
<b>Totals</b>	<b>2</b>	<b>131</b>

#### Top Employers and Job Titles

Exhibit 4 details the number of online job postings for the selected occupations. From this point on, unclassified job titles are excluded from the analysis.

#### Exhibit 4. Job postings by occupation

Occupation	Unique Job Postings	Share of Job Postings
Outdoor Power Equipment and Other Small Engine Mechanics	7	47%
Farm Equipment Mechanics and Service Technicians	5	33%
Agricultural Equipment Operators	3	20%
<b>Total Job Postings</b>	<b>15</b>	<b>100%</b>

Exhibit 5 shows the top 5 relevant job titles with the most job postings.

**Exhibit 5. Top jobs titles**

Job Title	Number of Job Postings
Small Engine Mechanics	6
Agriculture Mechanics	2
Repair Technicians	2
Balers	2
Shop Mechanics	1
Combination Technicians	1
Small Engine Repair Technicians	1

Exhibit 6 shows the top relevant employers with the most job postings for the selected occupations.

**Exhibit 6. Top Employers**

Employer	Number of Job Postings
Pape Machinery	2
Ozark Trucking	2
Truckee Rents	2
H&E Equipment Services	1
Cagwin & Dorward	1
Capital Staffing	1
Procida Landscape	1
Sutter Basin Corp	1

## Top Skills and Qualifications

Exhibit 7 shows the top skills across three categories for the agricultural mechanics and operators-related occupations: specialized, essential, and software skills.<sup>4</sup>

### Exhibit 7. Most in-demand skills

Specialized Skills	Common Skills	Software Skills
Small Engines	Communication	--
Equipment Repair	Troubleshooting (Problem-Solving)	--
Mechanics	Record Keeping	--
Chainsaws	Lifting Ability	--
Mowing	Customer Service	--
Planned Maintenance	English Language	--
Hay Baling	Mechanical Aptitude	--
Snow Blowers	Mentorship	--
Electrical Diagnostics and Repairs	Team Oriented	--
Agricultural Equipment	Good Driving Record	--

<sup>4</sup> Specialized skills are those primarily required to perform specific tasks in an occupation. Essential skills are typically related to employability. These are skills that are prevalent across many occupations, and include both interpersonal attributes and learned skills (aka "soft skills"). Software skills are specific to any software tool or programming component used to support a job.

Exhibit 8 shows the minimum education level preferred by employers for the agricultural mechanics and operators-related job postings in the Greater Sacramento subregion.<sup>5</sup>

**Exhibit 8. Employer-preferred education**

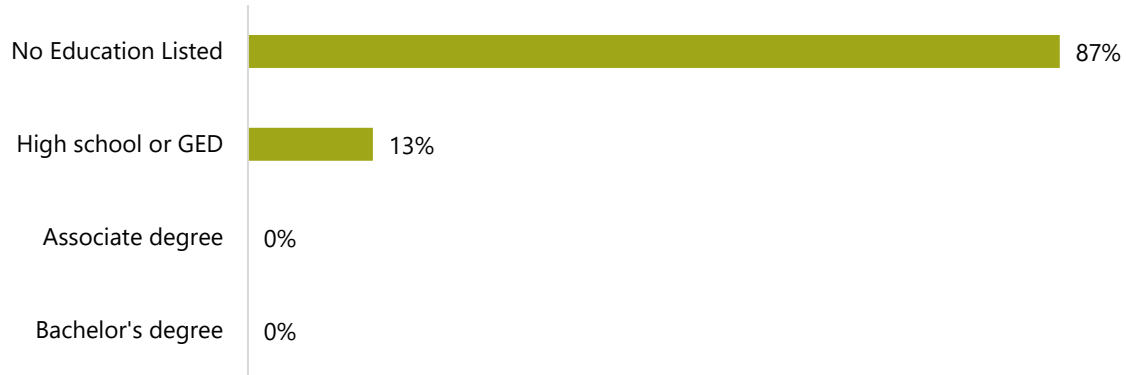
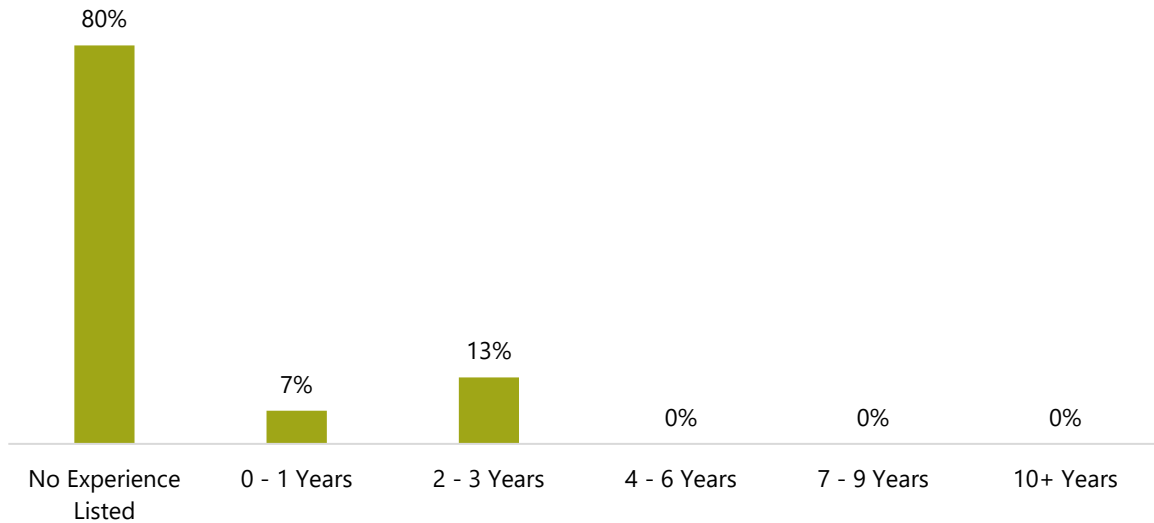


Exhibit 9 shows the minimum experience employers prefer for the agricultural mechanics and operators-related job postings in the Greater Sacramento subregion.<sup>6</sup>

**Exhibit 9. Employer-preferred job experience**



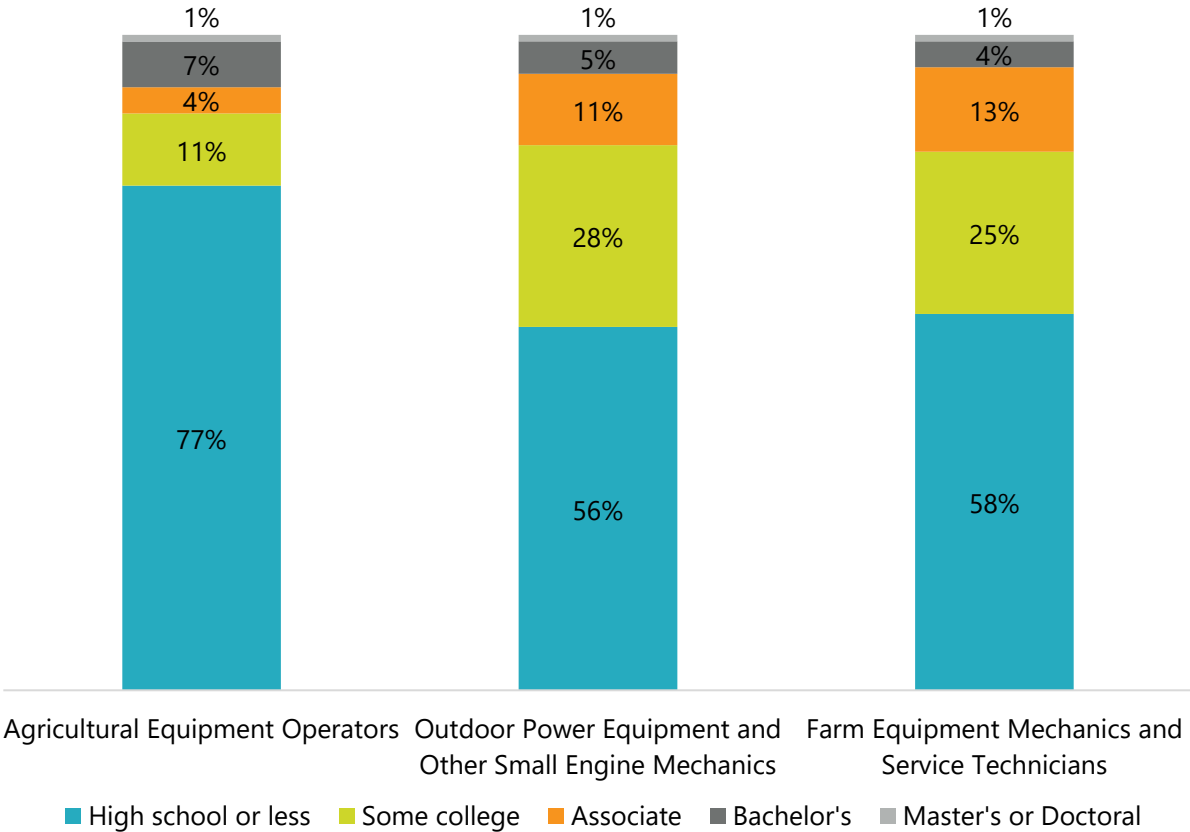
<sup>5</sup> Employers may include more than one level of education as a hiring requirement in a job posting. As a result, the values in exhibit 8 may sum to greater than 100%.

<sup>6</sup> Employers may include more than one level of experience as a hiring requirement in a job posting. As a result, the values in exhibit 9 may sum to greater than 100%.

# EDUCATION AND TRAINING REQUIREMENTS

The U.S. Census Bureau collects data on the highest education level achieved by workers across all occupations. Exhibit 10 shows California's educational attainment of the current workforce in the selected occupations.

**Exhibit 10. California educational attainment for selected occupations, 2019**



The U.S. Bureau of Labor Statistics (BLS) uses a categorical system to assign typical entry-level education and job requirements to each occupation for which the BLS publishes projection data. These categories include entry-level education, work experience in a related occupation, and on-the-job training. Exhibit 11 shows the typical entry-level job requirements for each occupation contained in this report.

**Exhibit 11. Typical entry-level job requirements for selected occupations**

Occupation	Entry-level Education Requirements	Work Experience Requirements	On-The-Job Training Requirements
Agricultural Equipment Operators	No formal educational credential	None	Moderate-term on-the-job training
Farm Equipment Mechanics and Service Technicians	High school diploma or equivalent	None	Long-term on-the-job training
Outdoor Power Equipment and Other Small Engine Mechanics	High school diploma or equivalent	None	Moderate-term on-the-job training

# EDUCATIONAL SUPPLY

Educational supply for an occupation can be estimated by analyzing the number of awards issued in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes. Exhibit 12 shows the TOP and CIP codes for educational programs related to the selected occupations.

**Exhibit 12. TOP and CIP codes for training programs related to the selected occupations**

TOP Programs and Codes	Aligned CIP Programs and Codes
Agricultural Power Equipment Technology (0116.00)	Agricultural Mechanization, General (01.0201) Agricultural Power Machinery Operation (01.0204) Agricultural Mechanics and Equipment/Machine Technology/Technician (01.0205)
Heavy Equipment Maintenance (0947.20)	Agricultural Mechanization, General (01.0201) Agricultural Power Machinery Operation (01.0204)
Heavy Equipment Operation (0947.30)	Agricultural Mechanization, General (01.0201) Agricultural Power Machinery Operation (01.0204)
Motorcycle, Outboard, and Small Engine Repair (0948.30)	Small Engine Mechanics and Repair Technology/Technician (47.0606)

## Community College Supply

No community college in the Greater Sacramento subregion conferred any awards in relevant programs over the last three years.

## Other Postsecondary Supply

The North (Greater Sacramento) Center of Excellence was unable to identify other postsecondary training programs in the Greater Sacramento subregion for the following programs:

- Agricultural Mechanization, General (01.0201)
- Agricultural Power Machinery Operation (01.0204)
- Agricultural Mechanics and Equipment/Machine Technology/Technician (01.0205)
- Small Engine Mechanics and Repair Technology/Technician (47.0606)

# FINDINGS

---

This report focuses on the following three occupations: Agricultural Equipment Operators (45-2091), Farm Equipment Mechanics and Service Technicians (49-3041), and Outdoor Power Equipment and Other Small Engine Mechanics (49-3053).

## *Occupational Demand*

- The Greater Sacramento subregion held 953 jobs for the three agricultural mechanics and operators-related occupations in 2022. These jobs are projected to increase by 9% over the next five years, adding 84 new jobs to the subregion by 2027.
- Jobs for the occupations included in this report are projected to grow at the same rate in the Greater Sacramento subregion (9%) as in the North/Far North region (9%) and in California (9%).
- Over the next five years, agricultural mechanics and operators-related occupations are projected to have 149 annual job openings in the Greater Sacramento subregion.

## *Wages*

- Entry-level (25<sup>th</sup> percentile) wage data shows that the three occupations included in this report typically earn \$14.38 to \$18.05 per hour, which is below the subregion's living wage of \$18.72 per hour. (See Appendix B for notes about the updated living wage).

## *Job Postings*

- In the last 12 months, there were 15 online job postings for the three occupations included in this report.
- Pape Machinery is the employer with the most job postings (2) between January and December 2023.
- In the last 12 months, there were two newly posted online job advertisements for the three agricultural mechanic and operator-related occupations and 131 actual hires. This means there were approximately 72 hires for every online job posting.
  - This finding suggests that despite few online job postings, hiring is robust for agricultural mechanics and operators in the North (Greater Sacramento) subregion.
  - This finding also suggests that online job advertisement is not the primary mechanism for finding qualified job candidates for these occupations. Other job search methods, such as referral and word of mouth, are most likely the primary ways employers in this field find workers.
- Most online job postings require, at most, a high school diploma (or its equivalent) and less than one year of job experience.



### *Education and Training Requirements*

- Between 15% and 39% of incumbent workers in the studied occupations have educational attainment levels consistent with community college offerings (some college or associate degrees). Another 4% to 7% of workers in these occupations hold a bachelor's degree. Notably, 56% to 77% of incumbent workers in these occupations have a high school diploma or equivalent or less.

### *Postsecondary Supply*

- No community college in the Greater Sacramento subregion conferred awards in relevant programs over the last three academic years (2019 through 2022).
  - In the North/Far North region, Butte and Shasta are the only two colleges that have conferred awards in Agricultural Power Equipment Technology (TOP 0116.00) (3-year average of 47 awards) and Heavy Equipment Operation (TOP 0947.30) (3-year average of 32 awards).
- Between 2019 and 2021, no non-community college training providers conferred any awards in relevant programs. Please note that non-community college awards data often lags by one year.

# RECOMMENDATIONS

- Based on a comparison of annual openings to average yearly awards in the Greater Sacramento subregion, there seems to be an undersupply between educational supply and occupational demand.
  - No local community college or non-community college postsecondary training provider issued awards in relevant training programs.
  - There are 149 projected annual openings for the three agricultural mechanics and operators-related occupations included in this report.
- The North (Greater Sacramento) Center of Excellence recommends creating new programs under the specified TOP codes targeting these three occupations.
- The coronavirus pandemic and local migration have impacted living costs in the North (Greater Sacramento) subregion. As a result, the hourly wage needed to live in the area has increased from below minimum wage in 2021 to \$18.72 per hour in 2023. Community colleges should partner with local employers who can offer students and program graduates apprentices and jobs that pay a living wage.

New Program Recommendation		
<b>Move forward with the new program</b>	<b>Proceed with caution</b>	<b>A new program is not recommended</b>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## APPENDIX A. METHODOLOGY AND SOURCES

---

This report identified Occupations using the Center of Excellence TOP-to-CIP-to-SOC crosswalk and O\*Net OnLine. This report's findings were determined using labor market data from the Bureau of Labor Statistics (BLS), U.S. Census Bureau data from Emsi, and jobs posting data from Burning Glass.

"The Chancellor's Office Curriculum Inventory System (COCI)." California Community Colleges Curriculum Inventory (COCI), 2023. <https://coci2.ccctechcenter.org/>.

Glasmeier, Amy K. "Living Wage Calculator." Living Wage Calculator, 2023. <https://livingwage.mit.edu/>.

Integrated Postsecondary Education Data System (IPEDS). National Center for Education Statistics. U.S. Department of Education. <https://nces.ed.gov/ipeds/>.

Labor Market Information Division. California Employment Development Department. <https://labormarketinfo.edd.ca.gov/>.

Lightcast (Formerly EMSI/Burning Glass) 2023.3; QCEW Employees, Non-QCEW Employees, and Self-Employed. <https://www.economicmodeling.com/>. (Note: 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)).

Management Information Systems (MIS) Data Mart. California Community Colleges Chancellor's Office. <https://datamart.cccco.edu/>.

O\*NET OnLine. U.S. Department of Labor/Employment and Training Administration (DOL ETA). <https://www.onetonline.org/>.

Self-Sufficiency Standard Tool for California. The University of Washington. <http://www.selfsufficiencystandard.org/>

"Taxonomy of Programs." California Community Colleges Chancellor's Office. June 2012, 6<sup>th</sup> Edition. <https://www.cccco.edu/-/media/CCCCO-Website/About-Us/Divisions/Educational-Services-and-Support/Academic-Affairs/What-we-do/Curriculum-and-Instruction-Unit/Files/TOPmanual6200909corrected12513pdf.ashx>

"TOP-CIP-SOC Crosswalk." Centers of Excellence for Labor Market Research. June 2021 Edition. <http://coecc.net/>

## APPENDIX B. GLOSSARY

Key Terms	Definition
<b>Occupation</b>	<p>Occupation refers to a category of similar jobs, careers, or professions regarding the work performed and the skills the workers possess. Workers who perform essentially the same tasks are in the same occupation, whether in the same industry. Some occupations are concentrated in a few industries, while others are found in many industries.</p> <p>Occupations differ from jobs in that jobs show the number of positions held in each occupation.</p>
<b>Jobs</b>	<p>A job is a specific instance of employment and includes any position where a worker provides labor for monetary compensation.</p> <p>Job numbers include employees (those who work for businesses) and proprietors (those who work for themselves). Full- and part-time jobs are included and counted equally (i.e., not adjusted to full-time equivalents). Data for jobs, or employment, are annual averages.</p>
<b>Employment</b>	<p>Employment refers to filled jobs, whether full- or part-time, temporary or permanent. The scope of "who" is counted as employed is noted in Appendix A. Methodology and Sources.</p>
<b>Job Change</b>	<p>Job change is the net increase or decrease of jobs over a given timeframe.</p>
<b>Job Opening</b>	<p>Job openings are the projected number of positions available for workers entering an occupation.</p> <p>Openings include growth and replacement job counts. Growth job counts are the positive change in the total number of workers employed. Replacement job counts are the estimates of new workers needed to replace workers permanently leaving the occupation.</p>
<b>Percentile Wage (or wages)</b>	<p>A percentile wage is the value of a wage at which a certain percentage of workers falls below. For example, a 25<sup>th</sup> percentile hourly wage of \$15.00 indicates that 25% of workers earn less than \$15.00, while 75% earn more. Percentile wages are specific to the geography shown in the report.</p> <p>The 25th-percentile and 75th-percentile hourly wages are used as a proxy for entry-level and experienced-level wages.</p>
<b>Living Wage</b>	<p>The living wage is the level of income a single, working adult with no children must earn to meet basic needs. The living wage is calculated using basic allowances for food, housing, transportation, healthcare, taxes, and other miscellaneous basic needs and assumes full-time employment (40 hours per week, 52 weeks a year).</p>

Key Terms	Definition
	Beginning in 2023-24, NFN COE adopted the MIT calculations for a living wage better aligned to the economic conditions following the pandemic. For additional information, please visit <a href="https://livingwage.mit.edu/">https://livingwage.mit.edu/</a> .
<b>Educational Attainment</b>	Educational attainment is the highest level of education achieved by workers in an occupation. The data include workers aged 25 years and older.
<b>Typical Entry-level Education</b>	<p>The education level most workers need to gain employment in an occupation. Categories range from "no formal educational credential" and "high school diploma or equivalent" to "doctoral or professional degree." The types most relevant to community training are "some college, no degree," "postsecondary nondegree award," and "associate degree."</p> <p>The typical entry-level education may differ from the actual educational levels attained by workers employed in an occupation.</p>
<b>Typical Work Experience</b>	The relevant prior experience a worker needs to gain employment in an occupation. Categories include "5 years or more", "less than five years," and "none."
<b>Typical On-The-Job (OTJ) Training</b>	The level of on-the-job training a worker needs to obtain for competency in the skills required for an occupation. Categories include "none," "short-term (1 month or less)," "moderate-term (more than one month but less than 12 months)," "long-term (more than 12 months)," "apprenticeship," and "internship/residency."
<b>Awards</b>	Awards are the number of certificates and degrees conferred for a specific course of study each year. Awards count "papers" and, as a result, may be greater than the number of students who complete a program.

## APPENDIX C. LMI FOR LAKE COUNTY

**Exhibit C1. Employment and projected demand of the three agricultural mechanics and operators-related occupations in Lake County, 2022-2027**

Occupation	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change	2022-2027 Annual Openings	25 <sup>th</sup> Pct. Hourly Earnings
Agricultural Equipment Operators	52	55	3	6%	9	\$14.97
Farm Equipment Mechanics and Service Technicians	<10	<10	Insf. Data	Insf. Data	1	Insf. Data
Outdoor Power Equipment and Other Small Engine Mechanics	<10	<10	Insf. Data	Insf. Data	1	Insf. Data
<b>Lake County Totals</b>	<b>65</b>	<b>69</b>	<b>4</b>	<b>6%</b>	<b>11</b>	<b>--</b>

**Exhibit C2. Job postings by occupation, Lake County, January 2023 to December 2023**

Occupation	Job Postings	Share of Job Postings
Agricultural Equipment Operators	0	0%
Farm Equipment Mechanics and Service Technicians	0	0%
Outdoor Power Equipment and Other Small Engine Mechanics	0	0%
<b>Total Job Postings</b>	<b>0</b>	<b>0%</b>

**Funding Acknowledgement:** This report was made available with Strong Workforce Program funding from the North Far North Regional Consortium.

**COVID-19 Statement:** This report includes employment projection data produced by Lightcast (formerly EMSI). Employment projections are developed using models based on historical data, which in this set of projections covers the period through 2021. Most input data, therefore, precedes the pandemic. Employment projections are long-term projections intended to capture structural changes in the economy, not cyclical fluctuations. As such, projections data are not intended to capture the impacts of the recession that began in February 2020. Cyclical fluctuations, like recessions, impact projections when they become part of the historical data set.

**Important Disclaimer:** 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. Efforts have been made to qualify and validate the accuracy of the data and the reported findings; however, neither the Centers of Excellence, COE host District, nor California Community Colleges Chancellor's Office are responsible for applications or decisions made by recipient community colleges, or their representatives based upon components or recommendations contained in this study.

© 2023 California Community Colleges Chancellor's Office,  
Centers of Excellence for Labor Market Research, Economic and  
Workforce Development Program



CENTERS OF EXCELLENCE  
FOR LABOR MARKET RESEARCH

**FOR MORE INFORMATION,  
PLEASE CONTACT:**

Ebony J. Benzing,  
Interim Director  
North (Greater Sacramento)  
Center of Excellence

[Ebony.Benzing@losrios.edu](mailto:Ebony.Benzing@losrios.edu)

(916) 563 - 3215