July 2020

Labor Market Analysis

Logistics

California Community Colleges

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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

This study conducted by the Central Valley/Mother Lode Center of Excellence examines labor market demand, wages, skills, and postsecondary supply for logistics. Six occupations related to logistics were identified for Modesto Junior College:

- 43-5081, Stock Clerks and Order Fillers
- 43-5071, Shipping, Receiving, and Traffic Clerks
- 43-5061, Production, Planning, and Expediting Clerks
- 43-5111, Weighers, Measurers, Checkers, and Samplers, Recordkeeping
- 43-3061, Procurement Clerks
- 43-5011, Cargo and Freight Agents

Key findings:

- **Occupational demand —** More than 17,100 workers were employed in jobs related to logistics in 2019 in the North Central Valley/Northern Mother Lode (NCV/NML) subregion. The largest occupation is stock clerks and order fillers with 11,246 workers in 2019, a projected growth rate of 6% over the next five years, and 1,691 annual openings.

- **Wages —** Procurement clerks earn the highest entry-level wages, $22.70/hour in the subregion and $21.90/hour in the region.

- **Employers —** Employers with the most job postings in the subregion are The Home Depot Incorporated, Walmart / Sam's, and Ryder System Incorporated.

- **Occupational titles —** The most common occupational title in job postings in the subregion is shipping, receiving, and traffic clerks. The most common job title is shipping and receiving clerk.

- **Skills and certifications —** The top baseline skill is physical abilities, the top specialized skill is forklift operation, and the top software skill is Microsoft Excel. The most in-demand certification is a driver's license.

- **Education —** A high school diploma or the equivalent is typically required for all six occupations, along with either short-term or moderate-term on-the-job training.

- **Supply —** Analysis of postsecondary completions in the region shows that on average 23 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 736 trained workers in the subregion and 1,599 workers in the region. The Center of Excellence recommends that Modesto Junior College work with the college's advisory board, and local industry in the expansion of programs to address the shortage of logistics workers in the region.

Introduction

The Central Valley/Mother Lode Center of Excellence was asked by Modesto Junior College to provide labor market information for logistics. Review of the Taxonomy of Programs (TOP) and Classification of Instructional Programs (CIP) found the following programs are appropriate for this analysis:

- TOP 051000-Logistics and Materials Transportation

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

- 43-5081, Stock Clerks and Order Fillers[2]
- 43-5071, Shipping, Receiving, and Traffic Clerks
- 43-5061, Production, Planning, and Expediting Clerks
- 43-5111, Weighers, Measurers, Checkers, and Samplers, Recordkeeping
- 43-3061, Procurement Clerks
- 43-5011, Cargo and Freight Agents

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. O*NET data was not available for Stock Clerks and Order Fillers.

> **Shipping, Receiving, and Traffic Clerks**
> **Job Description:** Verify and maintain records on incoming and outgoing shipments. Prepare items for shipment. Duties include assembling, addressing, stamping, and shipping merchandise or material; receiving, unpacking, verifying and recording incoming merchandise or material; and arranging for the transportation of products.
> **Knowledge:** Clerical, Computers and Electronics, Production and Processing, English Language, Mathematics
> **Skills:** Speaking, Active Listening, Reading Comprehension, Critical Thinking, Monitoring
>
> **Production, Planning, and Expediting Clerks**
> **Job Description:** Coordinate and expedite the flow of work and materials within or between departments of an establishment according to production schedule. Duties include reviewing and distributing production, work, and shipment schedules; conferring with department supervisors to determine progress of work and completion dates; and compiling reports on progress of work, inventory levels, costs, and production problems.

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[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://insightcced.org/tools-metrics/self-sufficiency-standard-tool-for-california/.

[2] Please note: This occupation is not considered relevant to community college education; as a result, it has not been included in the demand-and-supply analysis at the end of this report.

Knowledge: Production and Processing, Administration and Management, English Language, Mathematics, Customer and Personal Service
Skills: Active Listening, Reading Comprehension, Speaking, Time Management, Critical Thinking

Weighers, Measurers, Checkers, and Samplers, Recordkeeping
Job Description: Weigh, measure, and check materials, supplies, and equipment for the purpose of keeping relevant records. Duties are primarily clerical by nature. Includes workers who collect and keep record of samples of products or materials.
Knowledge: Production and Processing, English Language, Mathematics, Administration and Management, Clerical
Skills: Critical Thinking, Reading Comprehension, Monitoring, Speaking, Active Listening

Procurement Clerks
Job Description: Compile information and records to draw up purchase orders for procurement of materials and services.
Knowledge: Clerical, Customer and Personal Service, Administration and Management, English Language, Education and Training
Skills: Reading Comprehension, Speaking, Active Listening, Writing, Complex Problem Solving

Cargo and Freight Agents
Job Description: Expedite and route movement of incoming and outgoing cargo and freight shipments in airline, train, and trucking terminals, and shipping docks. Take orders from customers and arrange pickup of freight and cargo for delivery to loading platform. Prepare and examine bills of lading to determine shipping charges and tariffs.
Knowledge: Transportation, Customer and Personal Service, English Language, Geography, Public Safety and Security
Skills: Speaking, Active Listening, Critical Thinking, Monitoring, Service Orientation

Occupational Demand

The North Central Valley/Northern Mother Lode subregion employed 17,136 workers in logistics occupations in 2019 (Exhibit 1). However, the provided stock clerks and order fillers occupation is considered low-skill and is not incorporated into overall demand. The largest middle-skill/community college relevant occupation is shipping receiving and traffic clerks with 3,359 workers in 2019. This occupation is projected to grow by 10% over the next five years and has the greatest number of projected annual openings, 416.

Exhibit 1. Logistics employment and occupational projections in the NCV/NML subregion

Occupation	2019 Jobs	2024 Jobs	5-Year Change	5-Year % Change	Annual Openings
Stock Clerks and Order Fillers	11,246	11,967	721	6%	1,691
Shipping, Receiving, and Traffic Clerks	3,359	3,684	325	10%	416
Production, Planning, and Expediting Clerks	1,349	1,469	120	9%	171
Weighers, Measurers, Checkers, and Samplers, Recordkeeping	759	821	62	8%	103
Procurement Clerks	262	266	4	2%	29
Cargo and Freight Agents	161	186	25	16%	22
Total	**17,136**	**18,393**	**1,257**	**7%**	**2,432**

Wages

Exhibit 2 compares the entry-level and experienced wages of the logistics occupations. Procurement clerks earn the highest entry-level wages, $22.70/hour in the subregion and $21.90/hour in the region.

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

Legend:
- CVML Median Hourly Wages
- CVML Pct. 25 Hourly Wages
- NCV/NML Median Hourly Wages
- NCV/NML Pct. 25 Hourly Wages

Procurement Clerks
- CVML Median Hourly Wages: $21.60
- CVML Pct. 25 Hourly Wages: $17.55
- NCV/NML Median Hourly Wages: $22.70
- NCV/NML Pct. 25 Hourly Wages: $17.53

Production, Planning, and Expediting Clerks
- CVML Median Hourly Wages: $21.62
- CVML Pct. 25 Hourly Wages: $16.74
- NCV/NML Median Hourly Wages: $21.10
- NCV/NML Pct. 25 Hourly Wages: $16.06

Cargo and Freight Agents
- CVML Median Hourly Wages: $17.25
- CVML Pct. 25 Hourly Wages: $15.33
- NCV/NML Median Hourly Wages: $16.64
- NCV/NML Pct. 25 Hourly Wages: $14.82

Shipping, Receiving, and Traffic Clerks
- CVML Median Hourly Wages: $16.02
- CVML Pct. 25 Hourly Wages: $13.15
- NCV/NML Median Hourly Wages: $17.27
- NCV/NML Pct. 25 Hourly Wages: $13.82

Weighers, Measurers, Checkers, and Samplers, Recordkeeping
- CVML Median Hourly Wages: $14.18
- CVML Pct. 25 Hourly Wages: $11.70
- NCV/NML Median Hourly Wages: $14.73
- NCV/NML Pct. 25 Hourly Wages: $12.45

Job Postings

There were 702 job postings for the six occupations in the NCV/NML subregion from January to June 2020. The employers with the most job postings are listed in Exhibit 3.

Exhibit 3. Top employers of logistics by number of job postings

Employer	Job Postings	% of Job Postings
The Home Depot Incorporated	40	7%
Walmart / Sam's	15	3%
Ryder System Incorporated	11	2%
Goodwill	10	2%
United States Postal Service	10	2%
Burlington Worldwide Apparel	9	2%
Kehe Distributors	9	2%
Burlington	8	1%
Simpson Strong Tie Company Incorporated	8	1%
Staples	8	1%

Exhibit 4 shows how job postings for the targeted occupations in the NCV/NML subregion are distributed across five O*NET OnLine occupations. The occupational title shipping, receiving, and traffic clerks is listed in 367 job postings, followed by production, planning, and expediting clerks, 151 job postings. Note how shipping, receiving, and traffic clerks dominate the job postings. Common job titles in postings include shipping and receiving clerk, 75 job postings, receiving associate, 54 job postings, and freight/receiving, 46 job postings.

Exhibit 4. Top occupational titles in job postings for logistics

Occupational Title	Job Postings	% of Job Postings
Shipping, Receiving, and Traffic Clerks	367	52%
Production, Planning, and Expediting Clerks	151	22%
Weighers, Measurers, Checkers, and Samplers, Recordkeeping	88	13%
Cargo and Freight Agents	68	10%
Procurement Clerks	28	4%

Education

Of the 702 job postings, 326 listed an education level preferred for the positions being filled. Of those, 90% requested high school or vocational training, and 16% requested an associate degree (Exhibit 5).

Exhibit 5. Education levels requested in job postings for logistics

Education level	% of Job Postings
High school or vocational training	90%
Associate degree	16%
Bachelor's degree	14%
Master's degree	3%
Doctoral degree	1%

Baseline and Specialized Skills

Exhibit 6 depicts the top baseline and specialized skills for the targeted occupations. The three most important baseline skills are physical abilities, 29% of job postings, communication, 23%, and Microsoft Excel, 23%. The top three specialized skills are forklift operation, 33% of job postings, shipping and receiving, 28%, and shipping, 26%.
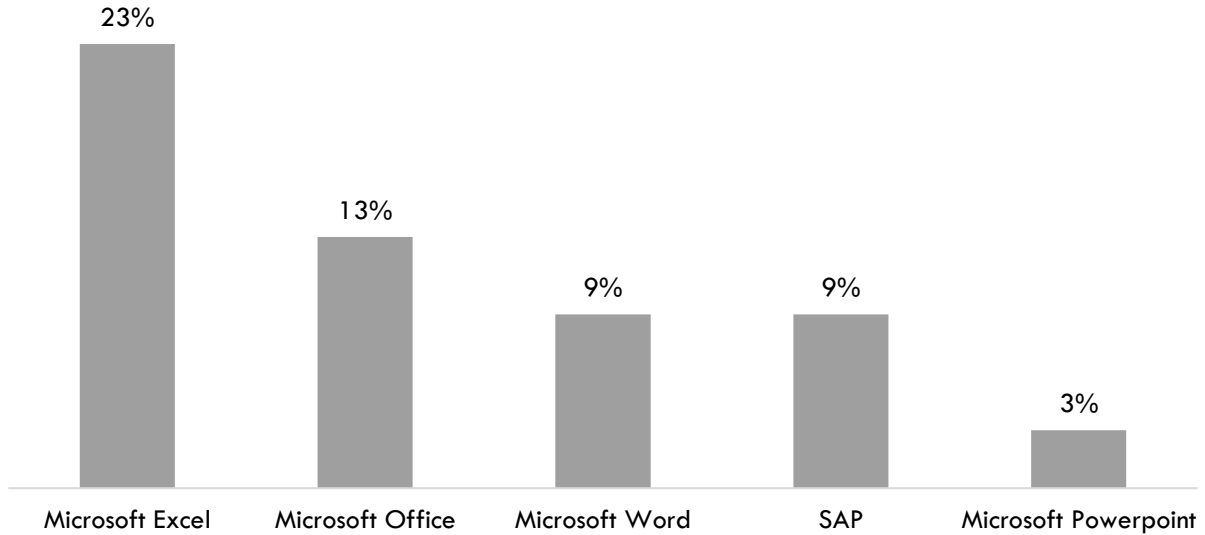
Exhibit 6. In-demand logistics baseline and specialized skills
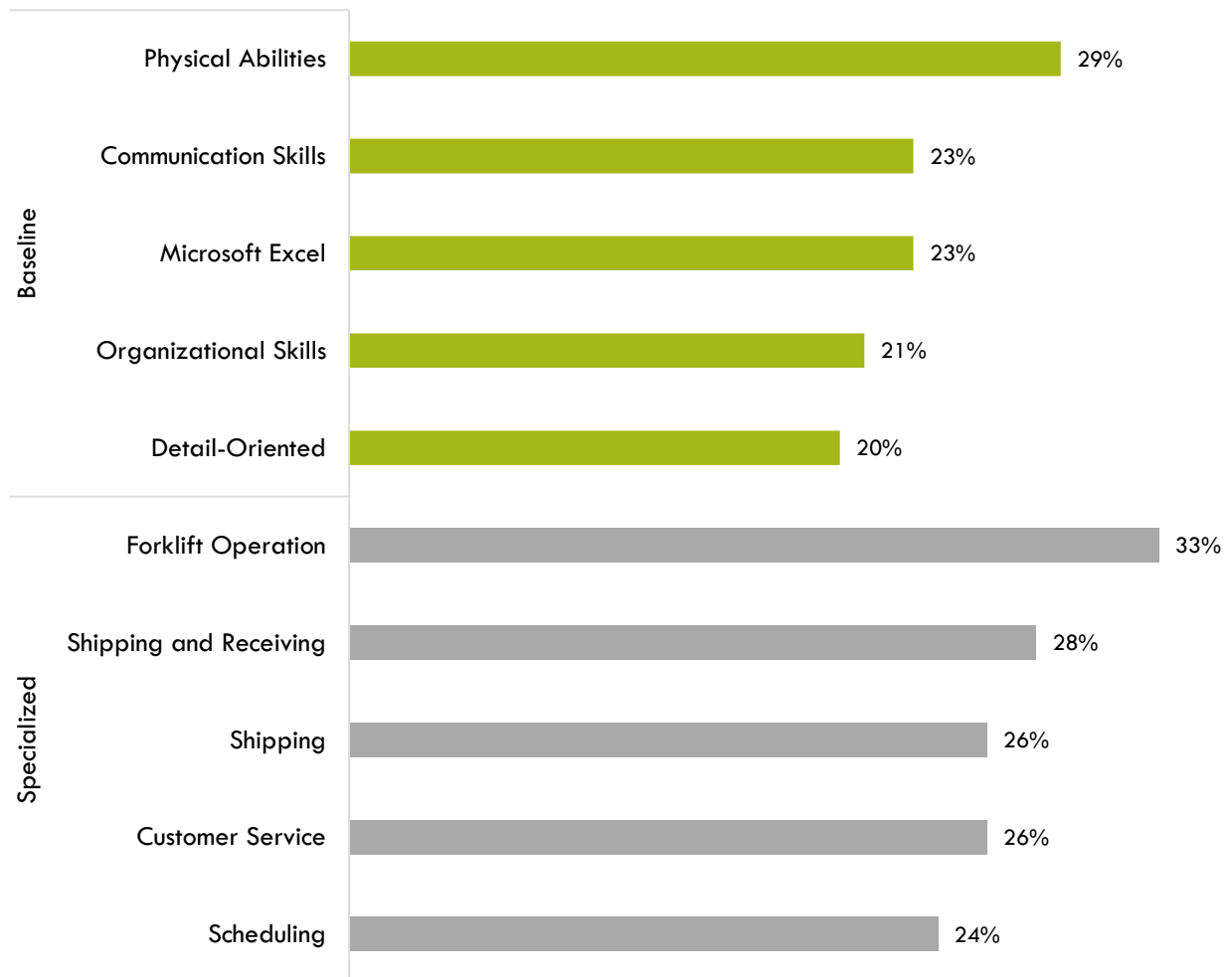
Software Skills

Analysis also included the software skills most in demand by employers. Microsoft Excel and Microsoft Office rank first and second (Exhibit 7).
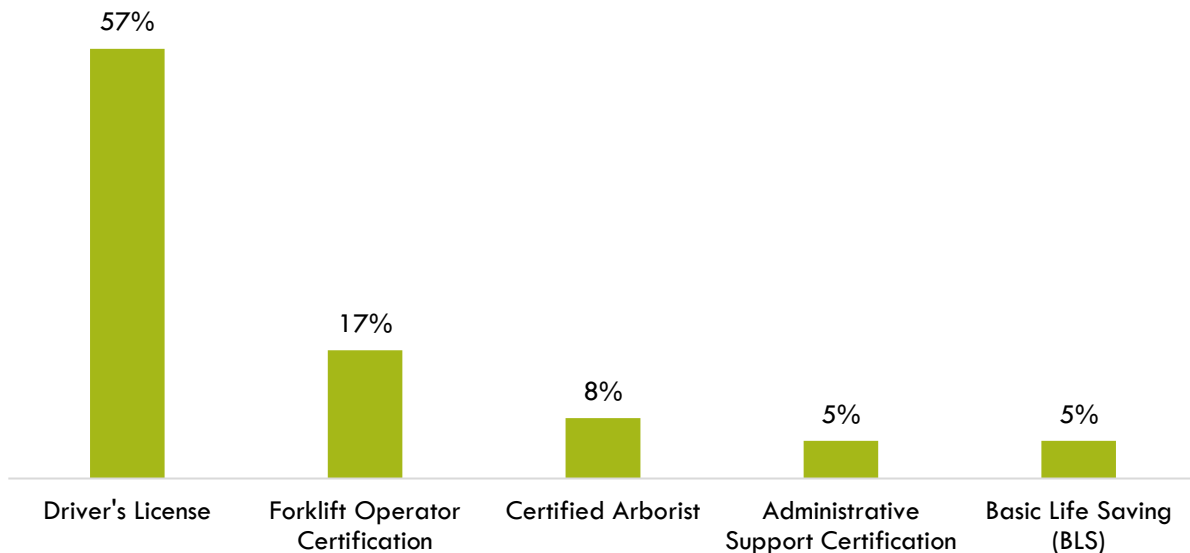
Exhibit 7. In-demand logistics software skills

| Microsoft Excel | Microsoft Office | Microsoft Word | SAP | Microsoft Powerpoint |
| 23% | 13% | 9% | 9% | 3% |

Certifications

Of the 702 job postings, 101 contained certification data. Of those, 57% indicated a need for a driver's license. The next top certifications are Forklift Operator Certification and Certified Arborist (Exhibit 8). (Due to the low number of job postings with certifications listed, the chart below may not be representative of the full sample.)

Exhibit 8. Top logistics certifications requested in job postings

| Driver's License | Forklift Operator Certification | Certified Arborist | Administrative Support Certification | Basic Life Saving (BLS) |
| 57% | 17% | 8% | 5% | 5% |

Education, Work Experience & Training

A high school diploma or the equivalent is typically required for all six occupations, along with either short-term or moderate-term on-the-job training (Exhibit 9).

Exhibit 9. Education, work experience, and training results for logistics occupations[3]

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training
Procurement Clerks	High school diploma or equivalent	None	Moderate-term
Cargo and Freight Agents	High school diploma or equivalent	None	Short-term
Production, Planning, and Expediting Clerks	High school diploma or equivalent	None	Moderate-term
Shipping, Receiving, and Traffic Clerks	High school diploma or equivalent	None	Short-term
Stock Clerks and Order Fillers	High school diploma or equivalent	None	Short-term
Weighers, Measurers, Checkers, and Samplers, Recordkeeping	High school diploma or equivalent	None	Short-term

Supply

Analysis of program data from the California Community Colleges Chancellor's Office Data Mart included the TOP code: 051000-Logistics and Materials Transportation. Analysis of the last three years of TOP code data shows that, on average, 23 awards were conferred in the Central Valley/Mother Lode region each year (Exhibit 10).

**Exhibit 10. Postsecondary supply for logistics occupations in the region**

TOP6 or CIP Program Code and Title	College	2016-17	2017-18	2019-20	3-Year Average
051000 - Logistics and Materials Transportation	Fresno City	20	21	11	17
	Modesto Junior	1	2	3	2
	San Joaquin Delta	2	8	-	3
	TOTAL	**23**	**31**	**14**	**23**

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

Gap Analysis

There is an undersupply of 736 logistics workers in the NCV/NML subregion and 1,599 workers in the region (Exhibit 11).

Exhibit 11. Logistics workforce annual demand and supply in the NCV/NML subregion and region

Legend: Demand · Gap · Supply

Region	Demand	Gap	Supply
NCV/NML	741	736	5
CVML	1,621	1,599	23
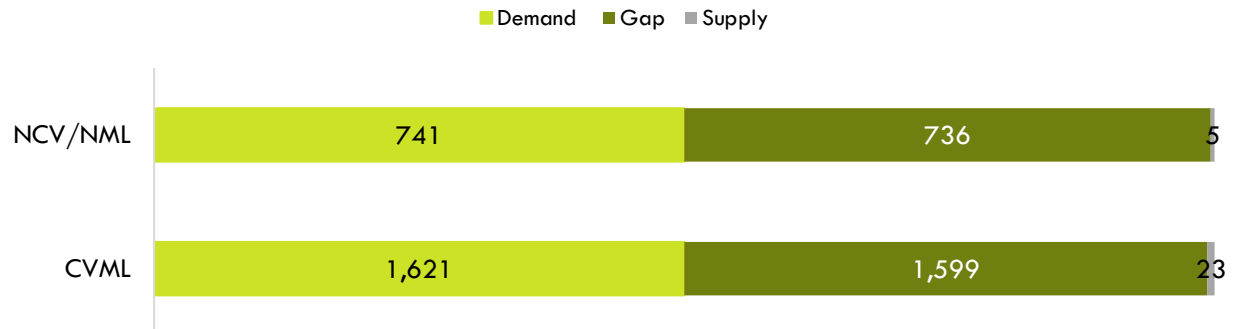
Student Outcomes

Please note: Metrics were not available for the relevant TOP code.

Conclusion

The entry-level wages of the six occupations exceed the NCV/NML subregion's average living wage. There were 702 job postings in the past six months for occupations related to logistics 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 forklift operation.
- 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 736 in the NCV/NML subregion and 1,599 in the region.

Recommendation

Based on these findings, it is recommended Modesto Junior College work with the college's advisory board, and local industry in the expansion of programs to address the shortage of logistics 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.