

May 2021

Labor Market Analysis

Logistics

POWERED BY

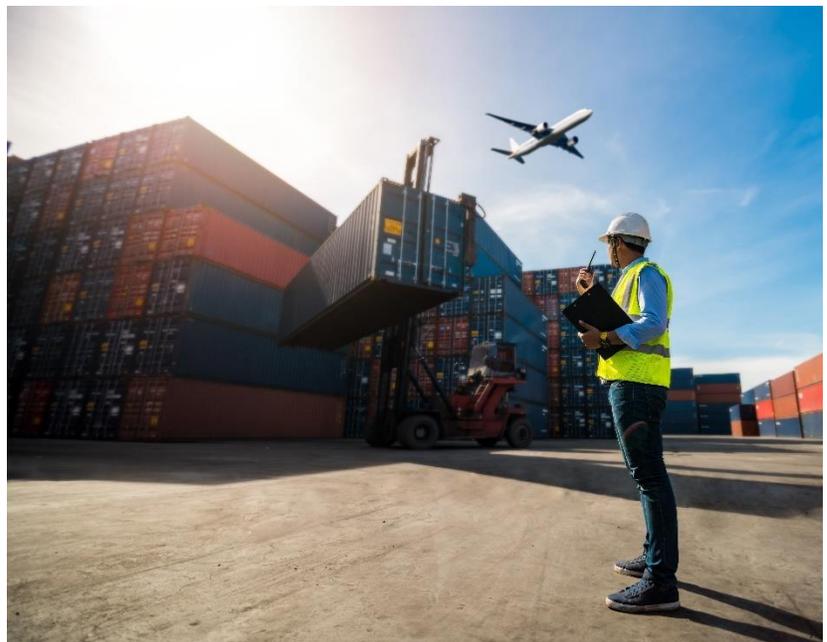


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Prepared by the Central Valley/Mother Lode Center of Excellence

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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.

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 Nora Seronello by phone at (209) 575-6894 or by email seronellon@mjc.edu.

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 logistics. Seven occupations related to logistics were identified for Bakersfield College:

- 11-3051, Industrial Production Managers
- 11-3071, Transportation, Storage, and Distribution Managers
- 13-1081, Logisticians
- 43-5011, Cargo and Freight Agents
- 43-5061, Production, Planning, and Expediting Clerks
- 43-5071, Shipping, Receiving, and Inventory Clerks
- 53-1047, First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors

Key findings:

- **Occupational demand** — More than 13,275 workers were employed in jobs related to logistics in 2019 in the South Central Valley/Southern Mother Lode (SCV/SML) subregion. The largest occupation is shipping, receiving, and inventory clerks with 4,403 workers in 2019, a projected growth rate of 10% over the next five years, and 510 annual openings.
- **Wages** — Industrial production managers earn the highest entry-level wage, \$36.98/hour in the subregion and \$36.86/hour in the region.
- **Employers** — Employers with the most job postings in the subregion are The Home Depot Incorporated, Burlington, and Goodwill.
- **Occupational titles** — The most common occupational title in job postings in the subregion is shipping, receiving, and inventory clerks. The most common job title is shipping clerks.
- **Skills and certifications** — The top baseline skill is communication, the top specialized skill is scheduling, 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 five of the seven occupations.
- **Supply** — Analysis of postsecondary completions in the region shows that on average four 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 1,396 trained workers in the subregion and 2,557 workers in the region. The Center of Excellence recommends that Bakersfield College work with the college's advisory board, and local industry in the development of programs to address the shortage of logistics workers in the region.

Introduction

The Central Valley/Mother Lode Center of Excellence was asked by Bakersfield College to provide labor market information for logistics. 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 logistics resulted in the identification of applicable occupations. The Standard Occupational Classification (SOC) System codes and titles used in this report are:

- 11-3051, Industrial Production Managers
- 11-3071, Transportation, Storage, and Distribution Managers
- 13-1081, Logisticians
- 43-5011, Cargo and Freight Agents
- 43-5061, Production, Planning, and Expediting Clerks
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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.

Industrial Production Managers

Job Description: Plan, direct, or coordinate the work activities and resources necessary for manufacturing products in accordance with cost, quality, and quantity specifications.

Knowledge: Production and Processing, Administration and Management, Customer and Personal Service, Personnel and Human Resources, English Language

Skills: Critical Thinking, Monitoring, Speaking, Coordination, Time Management

Transportation, Storage, and Distribution Managers

Job Description: Plan, direct, or coordinate transportation, storage, or distribution activities in accordance with organizational policies and applicable government laws or regulations. Includes logistics managers.

Knowledge: Transportation, Administration and Management, Customer and Personal Service, English Language, Mathematics

Skills: Critical Thinking, Speaking, Monitoring, Reading Comprehension, Active Listening

Logisticians

Job Description: Analyze and coordinate the ongoing logistical functions of a firm or organization.

Responsible for the entire life cycle of a product, including acquisition, distribution, internal allocation, delivery, and final disposal of resources.

Knowledge: Transportation, English Language, Administration and Management, Customer and Personal Service, Mathematics

Skills: Critical Thinking, Active Listening, Coordination, Monitoring, Reading Comprehension

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/>.

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

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.

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

Skills: Active Listening, Reading Comprehension, Speaking, Time Management, Critical Thinking

Shipping, Receiving, and Inventory Clerks

Job Description: Verify and maintain records on incoming and outgoing shipments involving inventory. Duties include verifying and recording incoming merchandise or material and arranging for the transportation of products. May prepare items for shipment.

Knowledge: Clerical, Computers and Electronics, Production and Processing, English Language, Mathematics

Skills: Speaking, Active Listening, Reading Comprehension, Critical Thinking, Monitoring

First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft

Job Description: Directly supervise and coordinate activities of material-moving machine and vehicle operators and helpers.

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

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

Occupational Demand

The South Central Valley/Southern Mother Lode subregion employed 13,278 workers in logistics occupations in 2019 (Exhibit 1). The largest occupation is shipping, receiving, and inventory clerks with 4,403 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, 510.

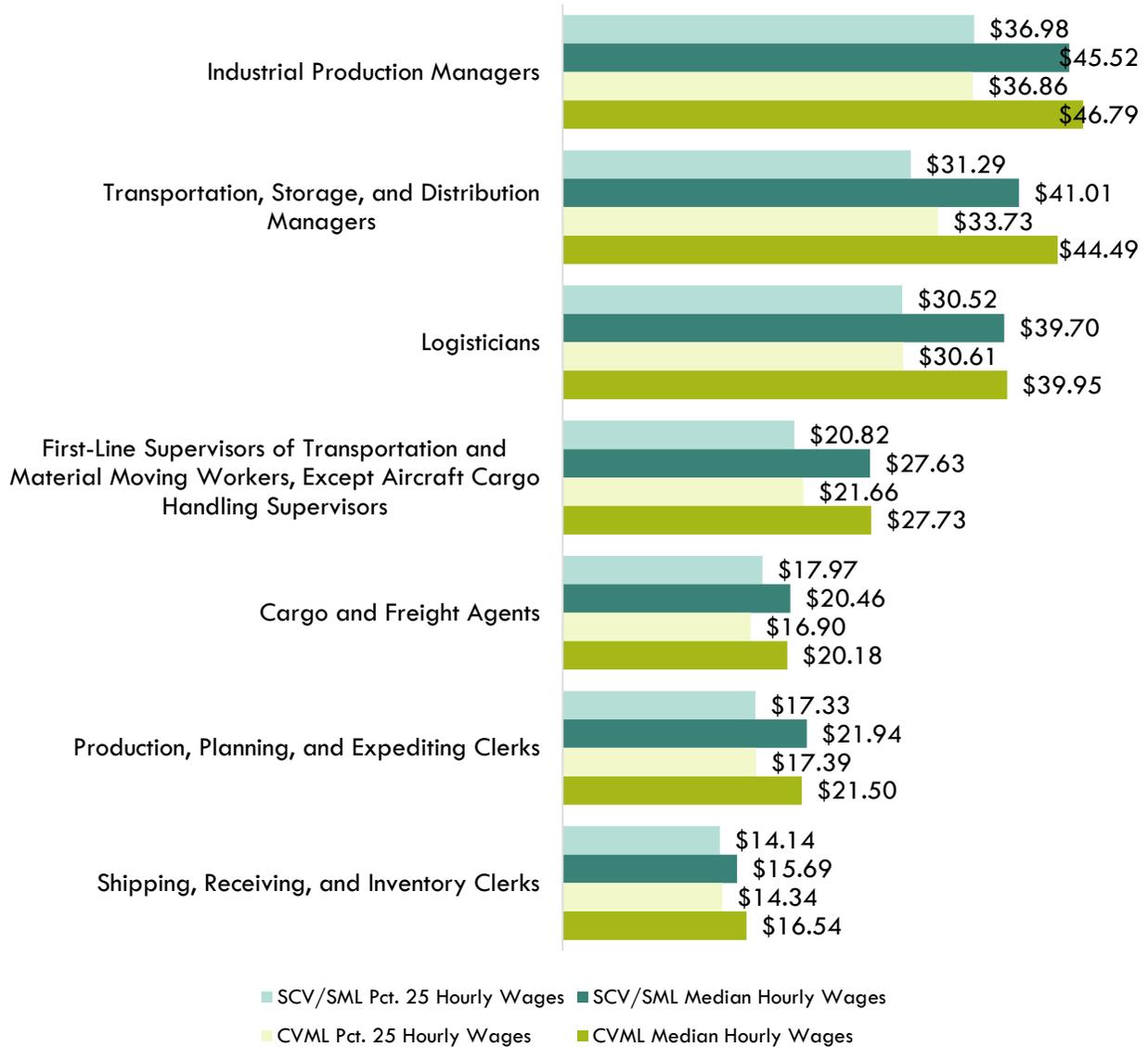
Exhibit 1. Logistics employment and occupational projections in the SCV/SML subregion

Occupation	2019 Jobs	2024 Jobs	5-Year Change	5-Year % Change	Annual Openings
Shipping, Receiving, and Inventory Clerks	4,403	4,856	453	10%	510
First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	3,241	3,605	364	11%	382
Production, Planning, and Expediting Clerks	2,002	2,078	76	4%	210
Logisticians	1,374	1,420	45	3%	128
Transportation, Storage, and Distribution Managers	1,062	1,151	89	8%	91
Industrial Production Managers	904	890	(14)	(2%)	60
Cargo and Freight Agents	291	304	13	4%	32
TOTAL	13,278	14,304	1,026	8%	1,415

Wages

Exhibit 2 compares the entry-level and experienced wages of the logistics occupations. Industrial production managers earn the highest entry-level wage, \$36.98/hour in the subregion and \$36.86/hour in the region.

Exhibit 2. Entry-level and experienced wage comparison in the SCV/SML subregion and region



Job Postings

There were 1,501 job postings for the eight occupations in the SCV/SML subregion from November 2020 to April 2021.² The employers with the most job postings are listed in Exhibit 3.

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

Employer	Job Postings	% Job Postings
The Home Depot Incorporated	35	3%
Burlington	25	2%
Goodwill	19	2%
United States Postal Service	18	2%
Walmart / Sam's	16	1%
Burlington Worldwide Apparel	12	1%
Foster Farms	12	1%
Teleflora	11	1%
Anthem Blue Cross	10	1%
Dollar General	10	1%

Exhibit 4 shows how job postings for the targeted occupations in the SCV/SML subregion are distributed across 10 O*NET OnLine occupation. The occupational title shipping, receiving, and inventory clerks is listed in 449 job postings. Note how this occupational title dominates the job posting results. Common job titles in postings include shipping clerk in 52 job postings, quality assurance manager in 43 job postings, and shipping and receiving clerk in 36 job postings.

Exhibit 4. Top occupational titles in job postings for logistics

Occupational Title	Job Postings	% of Job Postings
Shipping, Receiving, and Traffic Clerks	449	30%
Production, Planning, and Expediting Clerks	293	20%
Quality Control Systems Managers	181	12%
Storage and Distribution Managers	124	8%
Industrial Production Managers	108	7%
Cargo and Freight Agents	91	6%
First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	83	6%
Logisticians	53	4%
Transportation Managers	42	3%
Logistics Managers	41	3%

Salaries

Exhibit 5 shows the “Market Salaries” for logistics 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.

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 5. Salaries for logistics occupations

Market Salary Percentile	Salary Amount
10th Percentile	\$25,726
25th Percentile	\$29,144
50th Percentile	\$37,674
75th Percentile	\$60,739
90th Percentile	\$82,205

Education

Of the 1,501 job postings, 886 listed an education level preferred for the positions being filled. Of those, 58% requested high school or vocational training, 48% requested a bachelor's degree, and 14% requested an associate 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%.

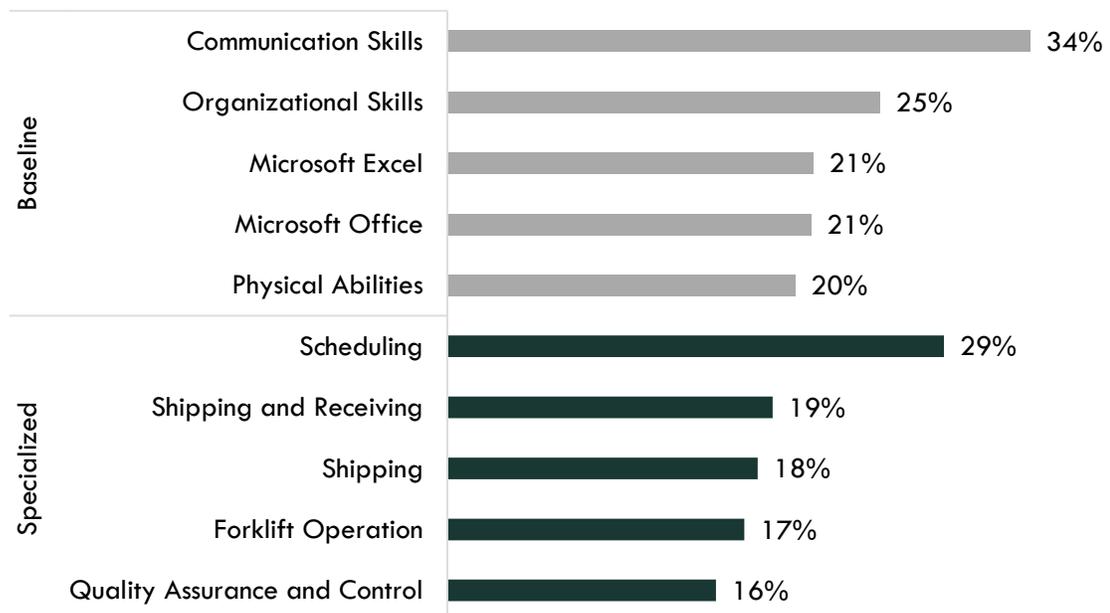
Exhibit 6. Education levels requested in job postings for logistics

Education Level	Job Postings	% of Job Postings
High school or vocational training	514	58%
Bachelor's degree	427	48%
Associate degree	120	14%
Master's degree	38	4%
Doctoral degree	7	1%

Baseline and Specialized Skills

Exhibit 7 depicts the top baseline and specialized skills for the targeted occupations. The three most important baseline skills are communication, 34% of job postings, organizational skills, 25%, and Microsoft Excel, 21%. The top three specialized skills are scheduling, 29% of job postings, shipping and receiving, 19%, and shipping, 18%.

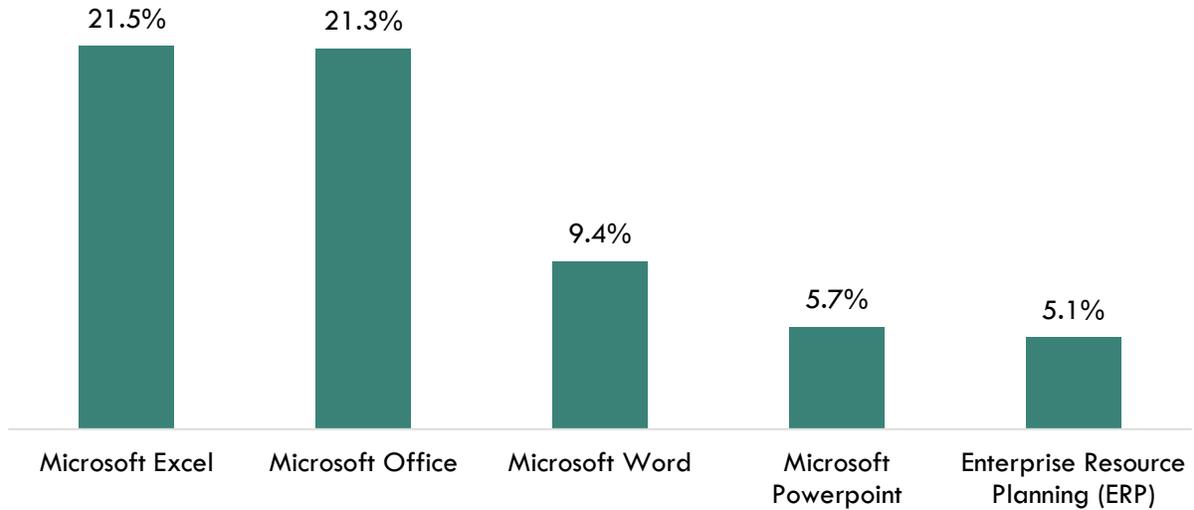
Exhibit 7. In-demand logistics baseline and specialized skills



Software Skills

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

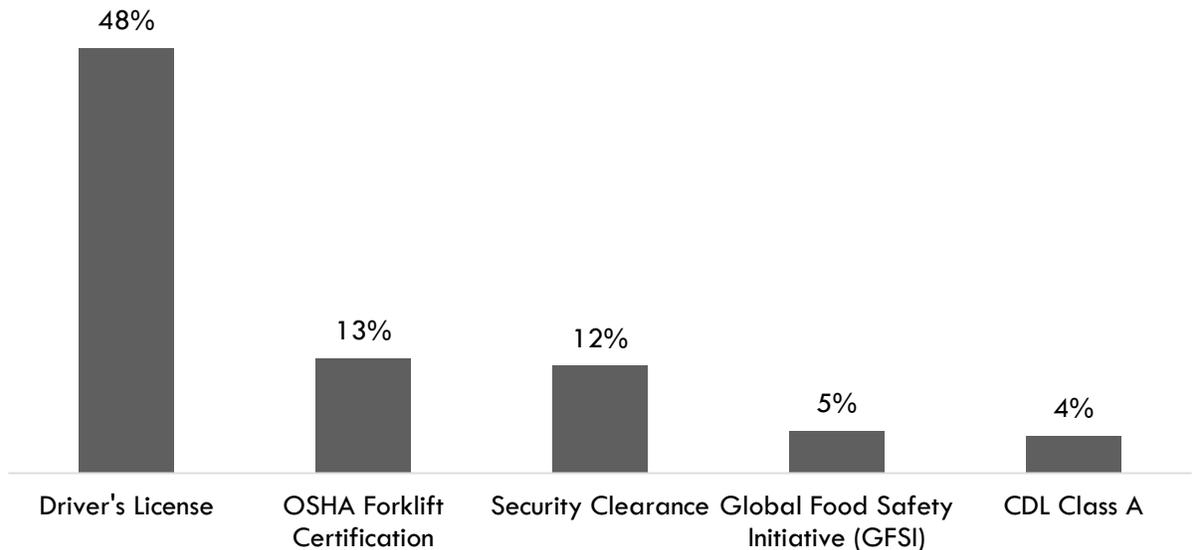
Exhibit 8. In-demand logistics software skills



Certifications

Of the 1,501 job postings, 178 contained certification data. Among those, 49% indicated a need for a driver's license. The next top certifications are OSHA Forklift Certification and security clearance (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 logistics certifications requested in job postings



Education, Work Experience & Training

A high school diploma or equivalent is typically required for five of the seven occupations (Exhibit 10). A bachelor's degree is typically required for industrial production managers and logisticians, but more than a third of workers in each of these occupations have less than a bachelor's degree, qualifying these as middle-skill occupations.

Exhibit 10. Education, work experience, training, and Current Population Survey results for logistics occupations³

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training	CPS
Industrial Production Managers	Bachelor's degree	5 years or more	None	30.2%
Transportation, Storage, and Distribution Managers	High school diploma or equivalent	5 years or more	None	35.0%
Logisticians	Bachelor's degree	None	None	38.2%
Cargo and Freight Agents	High school diploma or equivalent	None	Short-term	48.4%
Production, Planning, and Expediting Clerks	High school diploma or equivalent	None	Moderate-term	39.7%
Shipping, Receiving, and Inventory Clerks	High school diploma or equivalent	None	Short-term	33.7%
First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	High school diploma or equivalent	Less than 5 years	None	39.1%

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: 051000 - Logistics and Materials Transportation. Analysis of the last three years of data shows that, on average, four awards were conferred in the Central Valley/Mother Lode region each year (Exhibit 11).

Exhibit 11. Postsecondary supply for logistics occupations in the region

TOP Code - Title	Colleges	Associate Degree	Certificate 18 < 30 Semester Units	Certificate 6 < 18 Semester Units	Noncredit Award 144 < 192 Hours	Subtotal
051000 - Logistics and Materials Transportation	Fresno City				17	17
	Modesto	0	1	1		2
	San Joaquin Delta	1	3			3
TOTAL		1	4	1	17	23

There is an undersupply of 1,396 logistics workers in the SCV/SML subregion and 2,557 workers in the region (Exhibit 12).

Exhibit 12. Logistics workforce annual demand and supply 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 codes related to logistics. Of note, there were 28 logistics and materials transportation students who received a degree or certificate or attained apprenticeship journey status; 83% of students obtained a job closely related to their field of study; 20% reported a median change in earnings; and 67% attained a living wage.

Exhibit 13. Regional metrics for the TOP codes related to logistics

Metric	Logistics and Materials Transportation 051000
Students Who Got a Degree or Certificate or Attained Apprenticeship Journey Status	28
Number of Students Who Transferred	*
Job Closely Related to Field of Study	83%
Median Change in Earnings	20%
Attained a Living Wage	67%
* denotes data not available.	

Conclusion

The entry-level wages of the eight occupations exceed the SCV/SML subregion’s average living wage. There were 1,501 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 communication, and the top specialized skill is scheduling.
- 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 1,396 in the SCV/SML subregion and 2,557 in the region.

Recommendation

Based on these findings, it is recommended that Bakersfield 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 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.