Logistics and Supply Chain Management Occupations

C·O·E CENTERS OF EXCELLENCE FOR LABOR MARKET RESEARCH

COMMUNITY COLLEGES
SAN DIEGO & IMPERIAL COUNTIES
CAREER EDUCATION

California Community Colleges

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Summary and Findings

The San Diego-Imperial Center of Excellence for Labor Market Research (COE) completed this study to assist the San Diego and Imperial Counties Community Colleges as they conduct program development and strategic planning around *Logistics and Supply Chain Management Occupations*. Due to the complexity in this industry, the San Diego-Imperial COE analyzed traditional labor market information (LMI) and online job postings (real-time LMI) for various *Logistics and Supply Chain Management Occupations* and grouped them into five categories or functions: 1) plan, 2) source, 3) make, 4) deliver, and 5) return & store. Based on the available LMI, the San Diego-Imperial COE found that:

- There is a large labor market supply gap for *Logistics and Supply Chain Management Occupations*.
- Occupations in the "plan" category increased by 94% in employment between 2009 and 2019, suggesting that occupations such as "Logisticians" and "Production, Planning, and Expediting Clerks" have become quite important to employers in San Diego County.
- While not many programs specific to *Logistics and Supply Chain Management Occupations* exist in the community college system, the few programs that are offered in *Logistics and Materials Transportation (0510.00)* tend to have good student employment and wage outcomes.
- Entry-level wages for some *Logistics and Supply Chain Management Occupations* are below the living wage for San Diego County. However, median wages for these occupations are all above the living wage, suggesting that with enough education and experience, workers in these positions could earn sustainable wages.
- According to traditional LMI (historical and projected data), the majority of *Logistics and Supply Chain Management Occupations* have a minimum educational requirement of an associate degree or less. However, according to real-time LMI, employers posted a minimum of a bachelor's degree for the majority of these occupations.

The next step in this research is to solicit feedback from employers and individuals who work in these positions about this study before proceeding with a recommendation for the region's community colleges.

Introduction

Logistics and supply chain management have become critical business functions in today's global economy. However, due to the COVID-19 pandemic, supply chain disruptions have severely impacted global trade as businesses scramble to find suppliers for raw materials and finished goods.[1] To better understand employers' workforce needs for logistics and supply chain management, the San Diego-Imperial COE reviewed existing labor market research and grouped the most commonly found occupations into five functions or categories:

Category	Description
Plan	Planning, scheduling and enabling
Source	Sourcing and purchasing
Make	Manufacturing operations, production and automation
Deliver	Transportation and logistics
Return & Store	Storage and warehousing

While there are some overlapping roles, the San Diego-Imperial COE adopted these categories from the Association for Supply Chain Management[2] to guide the region's community colleges as they conduct program development and strategic planning around *Logistics and Supply Chain Management Occupations*. The following sections provide an overview of the labor market need for these occupations as well as their varying job titles, wages, and knowledge, skills and abilities.

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[1] deloitte.com/global/en/pages/risk/articles/covid-19-managing-supply-chain-risk-and-disruption.html
[2] Association for Supply Chain Management (ASCM). 2020 Supply Chain Salary and Career Survey Report.
ascm.org/globalassets/documents--files/salary-survey/2020-salary-report.pdf

Supply Gap Analysis

To better understand the labor market in San Diego County for *Logistics and Supply Chain Management Occupations*, the San Diego-Imperial COE analyzed **traditional** labor market information for the following occupational codes in the Standard Occupational Classification (SOC)[3] system. (Traditional labor market research consists of a longitudinal analysis of historical and projected occupational data.) Collectively, these occupations are referred to as *Logistics and Supply Chain Management Occupations* and have been grouped into the aforementioned categories for this study:

Plan

- **Logisticians** (SOC 13-1081): Analyze and coordinate the 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.

- **Production, Planning, and Expediting Clerks** (SOC 43-5061): 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.

Source

- **Buyers and Purchasing Agents**[4] (SOC 13-1028): Purchase farm products either for further processing or resale. Includes tree farm contractors, grain brokers and market operators, grain buyers, and tobacco buyers. May negotiate contracts. Buy merchandise or commodities, other than farm products, for resale to consumers at the wholesale or retail level, including both durable and nondurable goods. Analyze past buying trends, sales records, price, and quality of merchandise to determine value and yield. Select, order, and authorize payment for merchandise according to contractual agreements. May conduct meetings with sales personnel and introduce new products. May negotiate contracts. Includes assistant wholesale and retail buyers of nonfarm products. Purchase machinery, equipment, tools, parts, supplies, or services necessary for the operation of an establishment. Purchase raw or semi-finished materials for manufacturing. May negotiate contracts.

- **Procurement Clerks** (SOC 43-3061): Compile information and records to draw up purchase orders for procurement of materials and services.

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[3] The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. bls.gov/soc.

[4] O*NET OnLine is in the process of updating its system to include 2018 SOC codes; therefore, a link is not yet available for this occupation. onetcenter.org/taxonomy.html

- **Purchasing Managers** (SOC 11-3061): Plan, direct, or coordinate the activities of buyers, purchasing officers, and related workers involved in purchasing materials, products, and services. Includes wholesale or retail trade merchandising managers and procurement managers.

Make
- **First-Line Supervisors of Production and Operating Workers** (SOC 51-1011): Directly supervise and coordinate the activities of production and operating workers, such as inspectors, precision workers, machine setters and operators, assemblers, fabricators, and plant and system operators.
- **Industrial Production Managers** (SOC 11-3051): Plan, direct, or coordinate the work activities and resources necessary for manufacturing products in accordance with cost, quality, and quantity specifications.
- **Inspectors, Testers, Sorters, Samplers, and Weighers** (SOC 51-9061): Inspect, test, sort, sample, or weigh nonagricultural raw materials or processed, machined, fabricated, or assembled parts or products for defects, wear, and deviations from specifications. May use precision measuring instruments and complex test equipment.

Deliver
- **Cargo and Freight Agents** (SOC 43-5011): 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.
- **Driver/Sales Workers** (SOC 53-3031): Drive truck or other vehicle over established routes or within an established territory and sell or deliver goods, such as food products, including restaurant take-out items, or pick up or deliver items such as commercial laundry. May also take orders, collect payment, or stock merchandise at point of delivery. Includes newspaper delivery drivers.
- **First-line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors[5]** (SOC 53-1047): Directly supervise and coordinate the activities of helpers, laborers, or material movers, hand. Directly supervise and coordinate activities of material-moving machine and vehicle operators and helpers.

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[5] O*NET OnLine is in the process of updating its system to include 2018 SOC codes; therefore, a link is not yet available for this occupation. onetcenter.org/taxonomy.html

- **Heavy and Tractor-Trailer Truck Drivers** (SOC 53-3032): Drive a tractor-trailer combination or a truck with a capacity of at least 26,000 pounds Gross Vehicle Weight (GVW). May be required to unload truck. Requires commercial drivers' license.
- **Shipping, Receiving, and Traffic Clerks** (SOC 43-5071): 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.

Return & Store
- **Transportation, Storage, and Distribution Managers** (SOC 11-3071): Plan, direct, or coordinate transportation, storage, or distribution activities in accordance with organizational policies and applicable government laws or regulations. Includes logistics managers.
- **Weighers, Measurers, Checkers, and Samplers, Recordkeeping** (SOC 43-5111): 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.

The San Diego-Imperial COE understands that *Logistics and Supply Chain Management Occupations* tend to have cross-functional roles. However, separating these occupations into specific categories allows the San Diego-Imperial COE to analyze labor market information and identify whether a labor market supply gap exists for these positions. The following sections provide details on employer demand, educational supply, and gap analysis. A supply gap suggests that employers have more labor market demand than workers supplied by educational institutions.

EMPLOYER DEMAND

Between 2019 and 2024, occupations in the "deliver" category of *Logistics and Supply Chain Management Occupations* have the most employment in San Diego County and are projected to increase the most by 925 net jobs or five percent (Exhibit 1). However, occupations in the "plan" category had the highest employment growth between 2009 and 2019. In 2009, there were 6,189 jobs in the "plan" category, and that number grew to 12,001 in 2019—a 94 percent increase (Exhibit 1). This significant employment increase suggests that occupations such as *Logisticians* and *Production, Planning, and Expediting Clerks* have become quite important to employers in San Diego County.

Exhibit 1: Number of Jobs (Employment) for *Logistics and Supply Chain Management Occupations* San Diego County, 2009-2024[6]
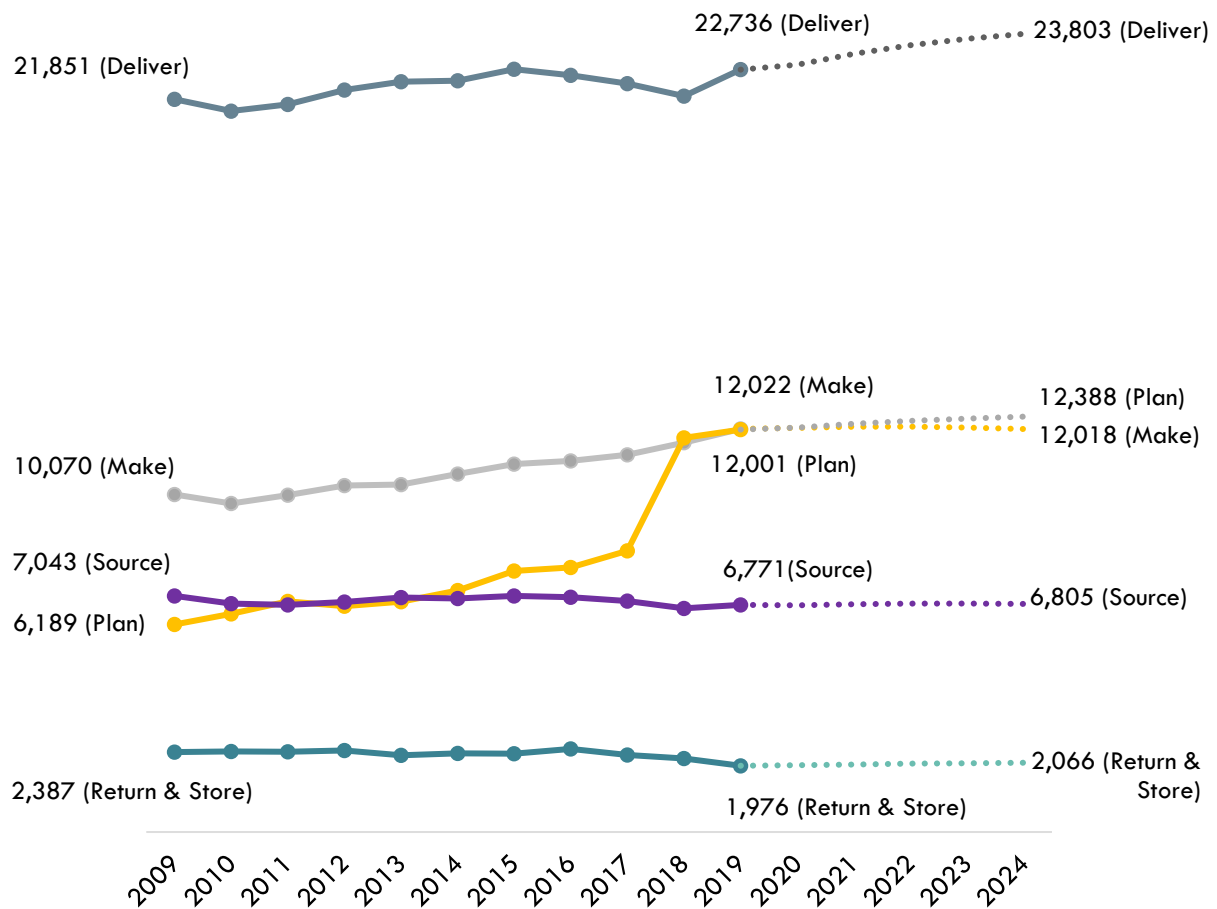
[6] Emsi 2020.04; QCEW, Non-QCEW, Self-Employed.

The following exhibit provides more detailed information for each occupation, including projected employment change and labor market demand between 2019 and 2024. Labor market demand is defined by the number of job openings that employers expect to fill due to attrition (caused by turnover and retirement, for example). Employers in San Diego County are projected to hire 6,248 workers annually between 2019 and 2024 for *Logistics and Supply Chain Management Occupations*.

Exhibit 2: Number of Jobs for *Logistics and Supply Chain Management Occupations* in San Diego County (2019-2024)[7]

Occupational Title	2019 Jobs	2024 Jobs	2019 - 2024 Net Jobs Change	2019-2024 % Net Jobs Change*	Annual Job Openings* (Demand)
Plan					
Logisticians	6,859	7,045	186	3%	700
Production, Planning, and Expediting Clerks	5,142	5,342	200	4%	584
Source					
Buyers and Purchasing Agents	5,051	5,042	-9	0%	530
Purchasing Managers	985	1,029	44	4%	92
Procurement Clerks	735	733	-2	0%	77
Make					
Inspectors, Testers, Sorters, Samplers, and Weighers	5,542	5,294	-248	-4%	674
First-Line Supervisors of Production and Operating Workers	4,506	4,668	162	4%	503
Industrial Production Managers	1,974	2,056	82	4%	164
Deliver					
Heavy and Tractor-Trailer Truck Drivers	9,341	10,057	716	8%	1,245
Shipping, Receiving, and Inventory Clerks	6,206	6,238	32	1%	625
Driver/Sales Workers	3,093	3,178	85	3%	377
First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	3,045	3,186	141	5%	360
Cargo and Freight Agents	1,051	1,144	93	9%	122
Return & Store					
Transportation, Storage, and Distribution Managers	1,531	1,596	65	4%	137
Weighers, Measurers, Checkers, and Samplers, Recordkeeping	445	470	25	6%	57
Total Projected (2019-2024) Annual Job Openings					**6,248**

*Percentages and numbers are rounded up

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[7] Emsi 2020.04; QCEW, Non-QCEW, Self-Employed.

EDUCATIONAL SUPPLY

Educational supply for an occupation can be estimated by analyzing the number of awards in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes.[8] There are five TOP codes and 10 CIP codes related to *Logistics and Supply Chain Management Occupations* (Exhibit 3).

Exhibit 3: Related TOP and CIP Codes for *Supply Chain and Logistics Occupations*

Logistics and Supply Chain Management Occupations
TOP 0501.00: Business and Commerce, General
TOP 0508.00: International Business and Trade
TOP 0509.70: E-Commerce (Business Emphasis)
TOP 0510.00: Logistics and Materials Transportation
TOP 0599.00: Other Business and Management
CIP 49.9999: Transportation and Materials Moving, Other
CIP 52.0101: Business/Commerce, General
CIP 52.0203: Logistics, Materials, and Supply Chain Management
CIP 52.0208: E-Commerce/Electronic Commerce
CIP 52.0211: Project Management
CIP 52.0299: Business Administration, Management and Operations, Other
CIP 52.0410: Traffic, Customs, and Transportation Clerk/Technician
CIP 52.0499: Business Operations Support and Secretarial Services, Other
CIP 52.1101: International Business/Trade/Commerce
CIP 52.9999: Business, Management, Marketing, and Related Support Services, Other

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[8] TOP data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data).

According to TOP data, seven community colleges have programs that could supply the region with awards for these occupations: Cuyamaca College, Grossmont College, MiraCosta College, Palomar College, San Diego Continuing Education, San Diego Mesa College, and Southwestern College. According to CIP data, seven non-community colleges could supply the region with awards: Alliant International University-San Diego, Argosy University-San Diego, Ashford University, California Miramar University, National University, San Diego State University, and University of San Diego (Exhibit 4).

Exhibit 4: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions (Program Year 2014-15 through PY2018-19 Average)[9]

TOP6 or CIP	TOP6 or CIP Title	3-Yr Annual Average CC Awards (PY16-17 to PY18-19)	Other Educational Institutions 3-Yr Annual Average Awards (PY14-15 to PY16-17)	3-Yr Total Average Supply (PY14-15 to PY18-19)
0501.00	Business and Commerce, General	**306**	**0**	**306**
	• Cuyamaca	6	0	
	• Grossmont	16	0	
	• MiraCosta	11	0	
	• Palomar	55	0	
	• San Diego Cont. Ed.	188	0	
	• San Diego Mesa	30	0	
0508.00	International Business and Trade	**5**	**0**	**5**
	• Grossmont	1	0	
	• Palomar	2	0	
	• Southwestern	2	0	
0509.70	E-Commerce (Business Emphasis)	**1**	**0**	**1**
	• Southwestern	1	0	
0510.00	Logistics and Materials Transportation	**6**	**0**	**6**
	• Southwestern	6	0	

TOP6 or CIP	TOP6 or CIP Title	3-Yr Annual Average CC Awards (PY16-17 to PY18-19)	Other Educational Institutions 3-Yr Annual Average Awards (PY14-15 to PY16-17)	3-Yr Total Average Supply (PY14-15 to PY18-19)
52.0101	Business/Commerce, General	**0**	**10**	**10**
	• Argosy University-San Diego	0	10	
52.0203	Logistics, Materials, and Supply Chain Management	**0**	**105**	**105**
	• Ashford University	0	105	
52.0208	E-Commerce/Electronic Commerce	**0**	**26**	**26**
	• Ashford University	0	26	
52.0211	Project Management	**0**	**100**	**100**
	• Ashford University	0	98	
	• California Miramar University	0	0	
	• National University	0	2	
52.0299	Business Administration, Management and Operations, Other	**0**	**1,254**	**1,254**
	• Ashford University	0	1,254	
52.1101	International Business/Trade/Commerce	**0**	**163**	**163**
	• Alliant International University-San Diego	0	1	
	• Ashford University	0	27	
	• San Diego State University	0	87	
	• University of San Diego	0	48	
			Total	**1,976**

STUDENT OUTCOMES

While not many programs specific to *Logistics and Supply Chain Management Occupations* exist at the community colleges, the few programs that the colleges do offer tend to have good student employment and wage outcomes. According to the California Community Colleges LaunchBoard, 65 percent of students from *Logistics and Materials Transportation (0510.00)* programs earned a living wage, compared to 52 percent of students in Career Education programs in general across the state (Exhibit 5).[10] (There was insufficient data for *Logistics and Materials Transportation* programs in the San Diego-Imperial region to conduct an analysis; however, other related TOP codes are provided in the exhibit below for context.)

Exhibit 5: Proportion of Students Who Earned a Living Wage, PY2017-18[11]

■ Business and Commerce, General (0501.00)   ▪ International Business and Trade (0508.00)
■ E-Commerce (Business Emphasis) (0509.70)   ▫ Logistics and Materials Transportation (0510.00)
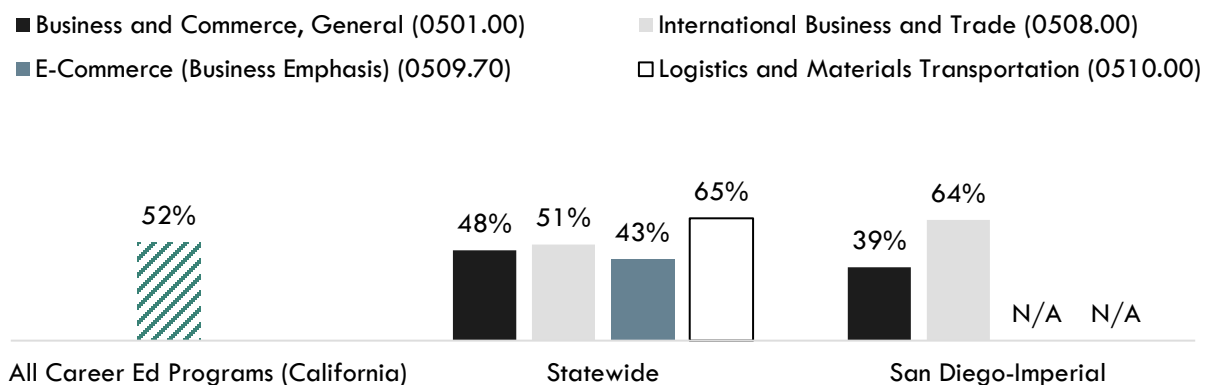
Similarly, according to the California Community Colleges LaunchBoard, 75 percent of students obtained a job closely related to their field of study after completing a *Logistics and Materials Transportation (0510.00)* program, compared to 75 percent of students in Career Education programs in general across the state (Exhibit 6).[12] Additionally, of the five students in the San Diego-Imperial region who completed a *Logistics and Materials Transportation (0510.00)* program, 80 percent reported they found a job closely related to their field of study (Exhibit 6).

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[10] California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.
[11] Among completers and skills builders who exited, the proportion of students who attained a living wage.
[12] California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

Exhibit 6: Percentage of Students in a Job Closely Related to Field of Study, PY2016-17[13]

- ■ Business and Commerce, General (0501.00)
- ■ International Business and Trade (0508.00)
- ■ E-Commerce (Business Emphasis) (0509.70)
- □ Logistics and Materials Transportation (0510.00)

Chart data:

All Career Ed Programs (California)
- 75%

Statewide
- 66%
- 66%
- 55%
- 75%

San Diego-Imperial
- 70%
- 100%
- N/A
- 80%
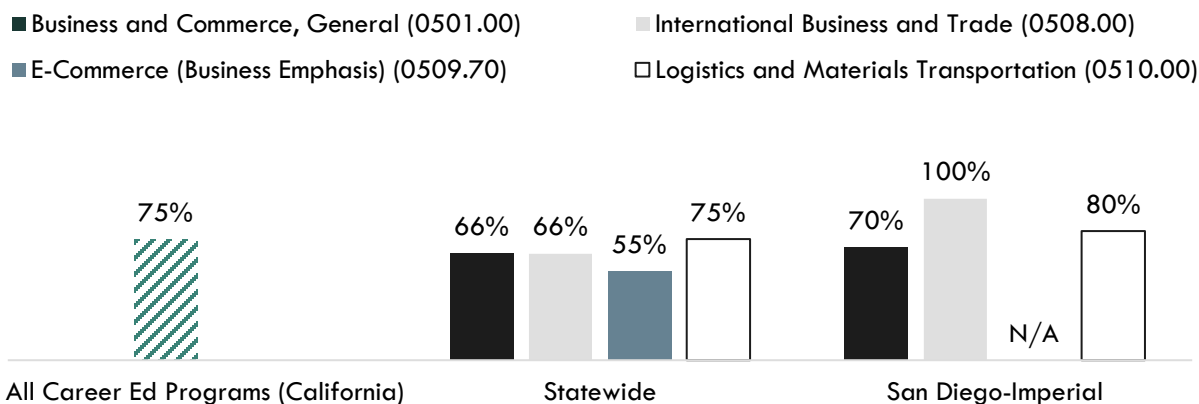
DEMAND VS. SUPPLY

Comparing labor demand (annual openings) with labor supply[14] suggests that there is a supply gap for these occupations in San Diego County, with 6,521 annual openings and 1,976 awards. Comparatively, there are 85,659 annual openings in California and 6,733 awards, suggesting that there is also a supply gap across the state (Exhibit 7).

Exhibit 7: Demand (Annual Openings) vs. Supply (Average Annual Awards)[15]

	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or Oversupply
San Diego	6,521	1,976	**4,545**
California	85,659	6,733	**78,926**

NOTE: This is a basic analysis of supply and demand of labor. The data does not include workers currently in the labor force who could fill these positions or workers who are not captured by publicly available data. This data should be used to discuss the potential gaps or oversupply of workers; however, it should not be the only basis for determining whether a program should be developed.

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[13] Most recent year in which data is available. Percentage of Students in a Job Closely Related to Field of Study: Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.
[14] Labor supply can be found from two different sources: EMSI or the California Community Colleges Chancellor's Office MIS Data Mart. EMSI uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.
[15] Supply and demand tables. coeccc.net/Supply-and-Demand.aspx.

Occupational Overview

Employers use a variety of job titles for *Logistics and Supply Chain Management Occupations*. Due to the complexity of the industry, the San Diego-Imperial COE analyzed both *traditional labor market information* and *online job postings* to better understand the educational requirements, wages, skills, etc. for these occupations. The following sections provide a comparison of these two data sources.

TYPICAL ENTRY-LEVEL EDUCATION

Traditional labor market information indicates that the majority of *Logistics and Supply Chain Management Occupations* require less than a bachelor's degree (Exhibit 8a).

Exhibit 8a: Typical Educational Requirements for *Logistics and Supply Chain Management Occupations* in San Diego County (Traditional Labor Market Information)

SOC Code	Occupational Title	Typical Entry-Level Education
Plan		
13-1081	Logisticians	Bachelor's degree
43-5061	Production, Planning, and Expediting Clerks	High school diploma or equivalent
Source		
13-1028	Buyers and Purchasing Agents	Bachelor's degree
43-3061	Procurement Clerks	High school diploma or equivalent
11-3061	Purchasing Managers	Bachelor's degree
Make		
51-1011	First-Line Supervisors of Production and Operating Workers	High school diploma or equivalent
11-3051	Industrial Production Managers	Bachelor's degree
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	High school diploma or equivalent
Deliver		
43-5011	Cargo and Freight Agents	High school diploma or equivalent
53-3031	Driver/Sales Workers	High school diploma or equivalent
53-1047	First-Line Supervisors of Transportation and Material Moving Workers	High school diploma or equivalent
53-3032	Heavy and Tractor-Trailer Truck Drivers	Postsecondary non-degree award
43-5071	Shipping, Receiving, and Inventory Clerks	High school diploma or equivalent
Return & Store		
11-3071	Transportation, Storage, and Distribution Managers	High school diploma or equivalent
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	High school diploma or equivalent

As previously mentioned, the San Diego-Imperial COE also analyzed online job postings for *Logistics and Supply Chain Management Occupations*. The San Diego-Imperial COE's primary data source for online job postings is Burning Glass Technologies (BGT), which has its own taxonomy of occupations.[16] The San Diego-Imperial COE grouped BGT's occupations into the same five categories and found that employers posted a minimum educational requirement of a bachelor's degree for most of these occupations (Exhibit 9b).

Exhibit 8b: Typical Minimum Educational Requirements for *Logistics and Supply Chain Management Occupations* in San Diego County (Percentage* of Online Job Postings, Jan 2015 - Sep 2020)[17]

Plan		
Occupational Title	Associate Degree or Less	Bachelor's Degree+
Logistics / Supply Chain Analyst	17.6%	82.4%
Logistician / Supply Chain Specialist	23.6%	76.4%
Scheduler / Operations Coordinator	57.7%	42.3%
Supply Chain / Logistics Manager	14.4%	85.6%
Source		
Occupational Title	Associate Degree or Less	Bachelor's Degree+
Buyer / Purchasing Agent	21.7%	78.3%
Procurement / Sourcing Manager	5.3%	94.7%
Purchasing Assistant	59.8%	40.2%
Make		
Occupational Title	Associate Degree or Less	Bachelor's Degree+
Manufacturing / Production Technician	90.9%	9.1%
Operations and Maintenance Specialist	50.0%	50.0%
Operations Manager / Supervisor	33.0%	67.0%
Production Worker	86.0%	14.0%
Production Supervisor	53.3%	46.7%
Quality Control Analyst	34.5%	65.5%
Quality Inspector / Technician	71.5%	28.5%

*May not add up to 100% due to rounding

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[16] Burning Glass developed its own labor market taxonomy to address the shortcomings of the federal O*NET and SOC occupational classification systems. Burning Glass Occupation (BGTOccs) are derived from the Bureau of Labor Statistics SOC and O*NET codes. Based on analysis of real-time job titles and requirements for skills and education, Burning Glass Technologies adopted BLS occupations to more accurately reflect current employer demand based on online job postings. burning-glass.com/specialized-occupations/
[17] Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." Jan 1, 2015-Sep 30, 2020.

Deliver		
Occupational Title	Associate Degree or Less	Bachelor's Degree+
Cargo Coordinator / Freight Forwarder	80.8%	19.2%
Light Truck Delivery Driver	100.0%	0.0%
Sales Delivery Driver	100.0%	0.0%
Shipping / Receiving Clerk	94.1%	5.9%
Transportation Manager	41.1%	58.9%
Transportation Supervisor	75.9%	24.1%
Return & Store		
Occupational Title	Associate Degree or Less	Bachelor's Degree+
Inventory Associate	93.7%	6.3%
Inventory / Supply Specialist	76.9%	23.1%
Laborer / Warehouse Worker	98.0%	2.0%
Storage / Distribution Manager	48.4%	51.6%
Warehouse / Distribution Supervisor	81.3%	18.7%

WAGES

According to traditional LMI, the entry-level hourly earnings of *Logistics and Supply Chain Management Occupations* range from $13.68 to $48.21 (Exhibit 10a). However, median hourly earnings for these occupations are higher than the living wage for a single adult in San Diego County, which is $15.99 per hour.[18]

Exhibit 9a: Hourly* Earnings for *Logistics and Supply Chain Management Occupations* in San Diego County (Traditional Labor Market Information)[19]

SOC Code	Occupational Title	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
Plan			
13-1081	Logisticians	$31.89	$39.01
43-5061	Production, Planning, and Expediting Clerks	$20.09	$25.34
Source			
13-1028	Buyers and Purchasing Agents	$24.06	$32.82
43-3061	Procurement Clerks	$19.35	$22.24
11-3061	Purchasing Managers	$48.21	$60.55
Make			
51-1011	First-Line Supervisors of Production and Operating Workers	$26.16	$33.67
11-3051	Industrial Production Managers	$40.00	$50.33
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	$17.11	$22.76
Deliver			
43-5011	Cargo and Freight Agents	$15.10	$20.93
53-3031	Driver/Sales Workers	$13.69	$17.37
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	$19.61	$25.05
53-3032	Heavy and Tractor-Trailer Truck Drivers	$16.39	$22.33
43-5071	Shipping, Receiving, and Inventory Clerks	$13.68	$16.75
Return & Store			
11-3071	Transportation, Storage, and Distribution Managers	$34.42	$45.43
43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	$13.72	$16.66

*To annualize these salaries, multiple by 2080 hours; however, not all employers offer full-time employment for these occupations

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[18] "California Family Needs Calculator (formerly the Self-Sufficiency Standard)," Insight: Center for Community Economic Development, last updated 2018. insightcced.org/2018-self-sufficiency-standard.
[19] Emsi 2020.04; QCEW, Non-QCEW, Self-Employed.

Exhibit 9b provides average salary estimates from Burning Glass Technologies for *Logistics and Supply Chain Management Occupations* between January 01, 2015 and September 30, 2020. "Actual compensation may vary based on individual employer salary practices and experience. Market salary is calculated using a machine learning model built off of millions of job postings every year, and accounting for adjustments based on locations, industry, skills, experience, education requirements, among other variables. Market salary provides insight into the likely salary of workers within a specific occupation, as well as further detail on the impact of additional skills on salary."[20]

Exhibit 9b: Estimated Market Salaries and Hourly Wages for *Logistics and Supply Chain Management Occupations* in San Diego County (Online Job Postings, Jan 2015 - Sep 2020)[21]

Occupational Title	Market Annual Salary (Median)	Estimated Hourly Wage*
Plan		
Logistics / Supply Chain Analyst	$64,886	$31.20
Logistician / Supply Chain Specialist	$60,693	$29.18
Scheduler / Operations Coordinator	$39,109	$18.80
Supply Chain / Logistics Manager	$74,458	$35.80
Source		
Buyer / Purchasing Agent	$55,502	$26.68
Procurement / Sourcing Manager	$83,569	$40.18
Purchasing Assistant	$39,348	$18.92
Make		
Manufacturing / Production Technician	$35,099	$16.87
Operations and Maintenance Specialist	$51,070	$24.55
Operations Manager / Supervisor	$62,132	$29.87
Production Worker	$29,123	$14.00
Production Supervisor	$54,366	$26.14
Quality Control Analyst	$50,688	$24.37
Quality Inspector / Technician	$38,112	$18.32

The San Diego-Imperial COE derived hourly wages by dividing the median market annual salaries by 2080 hours.

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[20] Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." Jan 1, 2015-Sep 30, 2020.
[21] Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." Jan 1, 2015-Sep 30, 2020.

Occupational Title	Market Annual Salary (Median)	Estimated Hourly Wage*
Deliver		
Cargo Coordinator / Freight Forwarder	$44,176	$21.24
Light Truck Delivery Driver	$31,171	$14.99
Sales Delivery Driver	$30,275	$14.56
Shipping / Receiving Clerk	$28,842	$13.87
Transportation Manager	$61,424	$29.53
Transportation Supervisor	$47,678	$22.92
Return & Store		
Inventory Associate	$29,466	$14.17
Inventory / Supply Specialist	$37,031	$17.80
Laborer / Warehouse Worker	$27,119	$13.04
Storage / Distribution Manager	$52,661	$25.32
Warehouse / Distribution Supervisor	$39,099	$18.80

*The San Diego-Imperial COE derived hourly wages by dividing the median market annual salaries by 2080 hours.

KNOWLEDGE, SKILLS AND ABILITIES

Based on the list of occupations from traditional LMI, Exhibit 10a lists the top specialized, soft, and software skills in online job postings between January 1, 2015 and September 30, 2020.

Exhibit 10a: Top Skills for *Logistics and Supply Chain Management Occupations* in San Diego County (Traditional Labor Market Information)[22]

Specialized Skills	Soft Skills	Software Skills
1. Scheduling	1. Communication Skills	1. Microsoft Excel
2. Quality Assurance and Control	2. Planning	2. Microsoft Office
3. Customer Service	3. Organizational Skills	3. Microsoft Word
4. Logistics	4. Physical Abilities	4. Enterprise Resource Planning (ERP)
5. Quality Management	5. Computer Literacy	5. Microsoft PowerPoint
6. Purchasing	6. Detail-Oriented	6. SAP
7. Budgeting	7. Teamwork / Collaboration	7. Oracle
8. Procurement	8. Problem Solving	8. Microsoft Access
9. Repair	9. English	9. Microsoft Project
10. Forklift Operation	10. Writing	10. Word Processing
11. Project Management	11. Written Communication	11. Microsoft Outlook
12. Enterprise Resource Planning (ERP)	12. Multi-Tasking	12. Microsoft Windows
13. Truck Driving	13. Research	13. Primavera
14. Inventory Management	14. Leadership	14. Microsoft SharePoint
15. Customer Contact	15. Building Effective Relationships	15. Microsoft Visio
16. Shipping and Receiving	16. Time Management	16. SQL
17. SAP	17. Verbal / Oral Communication	17. Software Development
18. Inventory Control	18. Troubleshooting	18. Salesforce
19. Data Entry	19. Creativity	19. Pivot Tables
20. Lifting Ability	20. Typing	20. Adobe Acrobat
21. Supply Chain Knowledge	21. Spanish	21. Primavera P6
22. HAZMAT	22. Analytical Skills	22. Adobe Photoshop
23. Packaging	23. Meeting Deadlines	23. Software Quality Assurance
24. Commercial Driving	24. Presentation Skills	24. Active Server Pages (ASP)
25. Supply Chain Management	25. Bilingual	25. QuickBooks

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[22] Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." Jan 1, 2015-Sep 30, 2020.

Based on the list of occupations from Burning Glass Technologies, Exhibit 10b lists the top specialized, soft, and software skills in online job postings between January 1, 2015 and September 30, 2020.

Exhibit 10b: Top Skills for *Logistics and Supply Chain Management Occupations* in San Diego County (Burning Glass Technologies Occupations, Jan 2015 - Sep 2020)[23]

Specialized Skills	Soft Skills	Software Skills
1. Scheduling	1. Communication Skills	1. Microsoft Excel
2. Customer Service	2. Physical Abilities	2. Microsoft Office
3. Quality Assurance and Control	3. Organizational Skills	3. Microsoft Word
4. Forklift Operation	4. Detail-Oriented	4. Enterprise Resource Planning (ERP)
5. Purchasing	5. Planning	5. Microsoft PowerPoint
6. Repair	6. Computer Literacy	6. SAP
7. Procurement	7. Teamwork / Collaboration	7. Oracle
8. Inventory Management	8. Problem Solving	8. Microsoft Access
9. Enterprise Resource Planning (ERP)	9. English	9. Microsoft Outlook
10. Budgeting	10. Writing	10. Word Processing
11. Logistics	11. Written Communication	11. Microsoft Project
12. Lifting Ability	12. Multi-Tasking	12. Microsoft Windows
13. Inventory Control	13. Research	13. Microsoft SharePoint
14. Packaging	14. Building Effective Relationships	14. Microsoft Visio
15. Project Management	15. Time Management	15. SQL
16. Data Entry	16. Troubleshooting	16. Salesforce
17. SAP	17. Leadership	17. Primavera
18. Shipping and Receiving	18. Verbal / Oral Communication	18. Adobe Acrobat
19. Customer Contact	19. Creativity	19. Pivot Tables
20. Operations Management	20. Work Area Maintenance	20. Software Development
21. Quality Management	21. Typing	21. Adobe Photoshop
22. Good Manufacturing Practices (GMP)	22. Analytical Skills	22. QuickBooks
23. Supply Chain Knowledge	23. Meeting Deadlines	23. JD Edwards
24. Supply Chain Management	24. Positive Disposition	24. Tableau
25. Cleaning	25. Self-Starter	25. Active Server Pages (ASP)

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[23] Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." Jan 1, 2015-Sep 30, 2020.

TOP CERTIFICATIONS

Based on the list of occupations from traditional LMI, Exhibit 11a lists the top certifications that appeared in online job postings between January 1, 2015 and September 30, 2020.

Exhibit 11a: Top 25 Certifications for *Logistics and Supply Chain Management Occupations* in San Diego County (Traditional Labor Market Information, Jan 2015 - Sep 2020)[24]

Top Certifications in Online Job Postings
1. CDL Class A
2. Driver's License
3. Security Clearance
4. CDL Class B
5. OSHA Forklift Certification
6. Certified in Production and Inventory Management (CPIM)
7. Project Management Certification
8. American Production and Inventory Control Society (APICS) Certification
9. CDL Class C
10. American Society for Quality (ASQ) Certification
11. IPC Certification
12. Air Brake Certified
13. Six Sigma Certification
14. Six Sigma Black Belt Certification
15. Certified Quality Auditor (CQA)
16. First Aid CPR AED
17. Project Management Professional (PMP)
18. Certified Quality Engineer (CQE)
19. Certified Supply Chain Professional (CSCP)
20. Purchasing Certification
21. Certified Professional in Supply Chain Management (CPSM)
22. Department of Transportation (DOT) Medical Certification
23. Hazardous Materials Certification
24. PMI Scheduling Professional (PMI-SP)
25. Food Handler Certification

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[24] Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." Jan 1, 2015-Sep 30, 2020.

Based on the list of occupations from Burning Glass Technologies, Exhibit 11b lists the top certifications that appeared in online job postings between January 1, 2015 and September 30, 2020.

Exhibit 11b: Top 25 Certifications for *Logistics and Supply Chain Management Occupations* in San Diego County (Burning Glass Technologies Occupations, Jan 2015 - Sep 2020)[25]

Top Certifications in Online Job Postings
1. Driver's License
2. Security Clearance
3. OSHA Forklift Certification
4. Certified in Production and Inventory Management (CPIM)
5. CDL Class A
6. American Production and Inventory Control Society (APICS) Certification
7. Project Management Certification
8. CDL Class B
9. IPC Certification
10. CDL Class C
11. Project Management Professional (PMP)
12. American Society for Quality (ASQ) Certification
13. Six Sigma Certification
14. Purchasing Certification
15. Certified Professional in Supply Management (CPSM)
16. Certified Supply Chain Profession (CSCP)
17. First Aid CPR AED
18. Certified Purchasing Manager (CPM)
19. Air Brake Certified
20. Food Handler Certification
21. Certified A+ Technician
22. Good Conduct
23. Six Sigma Black Belt Certification
24. Occupational Safety and Health Administration Certification
25. CompTIA Security+

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[25] Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." Jan 1, 2015-Sep 30, 2020.

TOP EMPLOYERS

Based on the list of occupations from traditional LMI, Exhibit 12a lists the top employers who posted online job postings between January 1, 2015 and September 30, 2020.

Exhibit 12a: Top 25 Employers for *Logistics and Supply Chain Management Occupations* in San Diego County (Traditional Labor Market Information, Jan 2015 - Sep 2020)[26]

Top Employers in Online Job Postings
1. C.R. England, Inc
2. General Atomics
3. CRST International
4. Northrop Grumman
5. Swift
6. The Home Deport Incorporated
7. Swift Transportation
8. General Dynamics
9. Amazon
10. Pizza Hut
11. Scripps Health
12. CACI
13. Werner Enterprises
14. JBS Carriers
15. Illumina Incorporated
16. Schneider
17. United Technologies Corporation
18. Best Buy
19. Penske
20. Domino's Pizza
21. Booz Allen Hamilton Inc.
22. US Government
23. Becton Dickinson
24. Thermo Fisher Scientific Inc
25. Heartland Express Incorporated

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[26] Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." Jan 1, 2015-Sep 30, 2020.

Based on the list of occupations from Burning Glass Technologies, Exhibit 12b lists the top employers who posted online job postings between January 1, 2015 and September 30, 2020.

Exhibit 12b: Top 25 Employers for *Logistics and Supply Chain Management Occupations* in San Diego County (Burning Glass Technologies Occupations, Jan 2015 - Sep 2020)[27]

Top Employers in Online Job Postings
1. Amazon
2. General Atomics
3. The Home Depot Incorporated
4. Northrop Grumman
5. United Parcel Service Incorporated
6. WIS International
7. Scripps Health
8. Lowe's Companies, Inc.
9. United Technologies Corporation
10. FedEx
11. General Dynamics
12. Illumina Incorporated
13. Sprouts Farmers Markets
14. Thermo Fisher Scientific
15. CACI
16. Accenture
17. Becton Dickinson
18. University of California, San Diego
19. Cobham
20. Booz Allen Hamilton
21. Pizza Hut
22. U.S. Government
23. Viasat
24. Builders FirstSource
25. Petco

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[27] Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." Jan 1, 2015-Sep 30, 2020.

Appendix A: Most Commonly Used Job Titles

The San Diego-Imperial COE used a combination of the following key words to identify job titles that employers commonly post online for *Logistics and Supply Chain Management Occupations* (Exhibit A).

Exhibit A: Keyword Queries for Most Commonly Used Job Titles in Online Job Postings

Keyword
Plan
• Logistics   • Logistics Resource   • Planning (Planner)   • Resource   • Scheduling (Scheduler)   • Supply Chain
Source
• Buyer   • Procurement   • Purchasing   • Capacity   • Commodities   • Demand   • Strategic Sourcing   • Sourcing
Make
• Automation   • Lean Operations   • Maintenance   • Materials   • Operations   • Production   • Quality   • Quality Control
Deliver
• Distribution   • Inventory Moving   • Material Moving   • Moving   • Transportation
Return & Store
• Inventory   • Storage   • Warehouse   • Warehousing

+

Level
Supervisorial or Management
• Administrator   • Director   • Lead   • Manager   • Supervisor
Non-Supervisorial or Non-Management
• Agent   • Analyst   • Assistant   • Associate   • Clerk   • Consultant   • Coordinator   • Operative   • Planner   • Specialist   • Technician

Based on the combination of keywords above and conversations with industry, the San Diego-Imperial COE queried the following job titles below to determine which ones were most commonly used by employers. Between January 1, 2015 and September 30, 2020, there were 2,132,133 job postings in San Diego County, and the job title with the most online job postings was "Operations Manager" (Exhibit B1through B9).[28]

Exhibit B1: Alternative Job Titles for *Logistics and Supply Chain Management Occupations* by Number of Online Job Postings in San Diego County (Jan 2015 - Sep 2020)

Job Title	#	Job Title	#
Automation Tech	0	Buying Director	22
Automation Administrator	9	Buying Lead	2
Automation Agent	0	Buying Manager	3
Automation Analyst	109	Buying Operative	0
Automation Assistant	68	Buying Planner	1
Automation Associate	76	Buying Specialist	5
Automation Clerk	30	Buying Supervisor	2
Automation Consultant	70	Buying Technician	0
Automation Coordinator	11	Capacity Administrator	0
Automation Director	41	Capacity Agent	4
Automation Lead	277	Capacity Analyst	3
Automation Manager	288	Capacity Assistant	0
Automation Operative	0	Capacity Associate	1
Automation Planner	0	Capacity Clerk	0
Automation Specialist	220	Capacity Consultant	0
Automation Supervisor	10	Capacity Coordinator	5
Automation Technician	230	Capacity Director	0
Buyer	4,504	Capacity Lead	0
Buying Administrator	0	Capacity Manager	6
Buying Agent	6	Capacity Operative	0
Buying Analyst	5	Capacity Planner	18
Buying Assistant	2	Capacity Specialist	7
Buying Associate	0	Capacity Supervisor	0
Buying Clerk	1	Capacity Technician	0
Buying Consultant	0	Category Manager	247
Buying Coordinator	0	Commodities Administrator	0

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[28] Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." Jan 1, 2015-Sep 30, 2020.

Exhibit B2: Alternative Job Titles for *Logistics and Supply Chain Management Occupations* by Number of Online Job Postings in San Diego County (Jan 2015 - Sep 2020)

Job Title	#	Job Title	#
Commodities Agent	0	Demand Assistant	0
Commodities Analyst	1	Demand Associate	15
Commodities Assistant	0	Demand Clerk	1
Commodities Associate	0	Demand Consultant	15
Commodities Clerk	0	Demand Coordinator	4
Commodities Consultant	0	Demand Director	32
Commodities Coordinator	0	Demand Lead	20
Commodities Director	0	Demand Manager	144
Commodities Lead	2	Demand Operative	0
Commodities Manager	3	Demand Planner	195
Commodities Operative	0	Demand Specialist	27
Commodities Planner	0	Demand Supervisor	2
Commodities Specialist	1	Demand Technician	2
Commodities Supervisor	0	Distribution Administrator	13
Commodities Technician	0	Distribution Agent	13
Commodity Administrator	4	Distribution Analyst	51
Commodity Agent	0	Distribution Assistant	32
Commodity Analyst	57	Distribution Associate	64
Commodity Assistant	0	Distribution Clerk	33
Commodity Associate	12	Distribution Consultant	14
Commodity Clerk	0	Distribution Coordinator	68
Commodity Consultant	11	Distribution Director	41
Commodity Coordinator	0	Distribution Lead	41
Commodity Director	4	Distribution Manager	264
Commodity Lead	9	Distribution Operative	0
Commodity Manager	173	Distribution Planner	63
Commodity Operative	0	Distribution Specialist	58
Commodity Planner	0	Distribution Supervisor	72
Commodity Specialist	37	Distribution Technician	204
Commodity Supervisor	2	Industrial Production Managers	0
Commodity Technician	0	Inventory Administrator	16
Demand Administrator	1	Inventory Agent	2
Demand Agent	143	Inventory Analyst	405
Demand Analyst	71	Inventory Assistant	87

Exhibit B3: Alternative Job Titles for *Logistics and Supply Chain Management Occupations* by Number of Online Job Postings in San Diego County (Jan 2015 - Sep 2020)

Job Title	#	Job Title	#
Inventory Associate	923	Lean Clerk	0
Inventory Clerk	606	Lean Consultant	25
Inventory Consultant	22	Lean Coordinator	3
Inventory Controller	41	Lean Director	11
Inventory Coordinator	281	Lean Lead	6
Inventory Director	28	Lean Manager	49
Inventory Lead	34	Lean Operations Administrator	0
Inventory Manager	309	Lean Operations Agent	0
Inventory Moving Administrator	0	Lean Operations Analyst	0
Inventory Moving Agent	0	Lean Operations Assistant	0
Inventory Moving Analyst	0	Lean Operations Associate	0
Inventory Moving Assistant	0	Lean Operations Clerk	0
Inventory Moving Associate	0	Lean Operations Consultant	0
Inventory Moving Clerk	0	Lean Operations Coordinator	0
Inventory Moving Consultant	0	Lean Operations Director	2
Inventory Moving Coordinator	0	Lean Operations Lead	0
Inventory Moving Director	0	Lean Operations Manager	0
Inventory Moving Lead	0	Lean Operations Operative	0
Inventory Moving Manager	0	Lean Operations Planner	0
Inventory Moving Operative	0	Lean Operations Specialist	2
Inventory Moving Planner	0	Lean Operations Supervisor	0
Inventory Moving Specialist	0	Lean Operations Technician	0
Inventory Moving Supervisor	0	Lean Operative	0
Inventory Moving Technician	0	Lean Planner	4
Inventory Operative	0	Lean Specialist	15
Inventory Planner	50	Lean Supervisor	0
Inventory Specialist	1,157	Lean Technician	2
Inventory Supervisor	138	Load Planner	4
Inventory Technician	63	Logistician	330
Lean Administrator	0	Logistics Administrator	25
Lean Agent	0	Logistics Agent	12
Lean Analyst	26	Logistics Analyst	1,185
Lean Assistant	2	Logistics Assistant	104
Lean Associate	0	Logistics Associate	274

Exhibit B4: Alternative Job Titles for *Logistics and Supply Chain Management Occupations* by Number of Online Job Postings in San Diego County (Jan 2015 - Sep 2020)

Job Title	#	Job Title	#
Logistics Clerk	153	Maintenance Automation Technician	41
Logistics Consultant	90	Maintenance Clerk	64
Logistics Coordinator	444	Maintenance Consultant	20
Logistics Director	78	Maintenance Coordinator	232
Logistics Engineer	291	Maintenance Director	487
Logistics Lead	98	Maintenance Lead	383
Logistics Manager	655	Maintenance Manager	943
Logistics Operative	0	Maintenance Operative	0
Logistics Planner	106	Maintenance Planner	83
Logistics Resource Director	0	Maintenance Specialist	291
Logistics Resource Administrator	0	Maintenance Supervisor	1,333
Logistics Resource Agent	0	Maintenance Technician	7,521
Logistics Resource Analyst	0	Master Planner	88
Logistics Resource Assistant	0	Material Moving Administrator	0
Logistics Resource Associate	0	Material Moving Agent	0
Logistics Resource Clerk	0	Material Moving Analyst	0
Logistics Resource Consultant	0	Material Moving Assistant	0
Logistics Resource Coordinator	0	Material Moving Associate	0
Logistics Resource Lead	0	Material Moving Clerk	0
Logistics Resource Manager	0	Material Moving Consultant	0
Logistics Resource Operative	0	Material Moving Coordinator	0
Logistics Resource Planner	0	Material Moving Director	0
Logistics Resource Specialist	0	Material Moving Lead	1
Logistics Resource Supervisor	0	Material Moving Manager	0
Logistics Resource Technician	0	Material Moving Operative	0
Logistics Resources Planner	0	Material Moving Planner	0
Logistics Specialist	876	Material Moving Specialist	0
Logistics Supervisor	170	Material Moving Supervisor	0
Logistics Technician	94	Material Moving Technician	0
Maintenance Administrator	26	Materials Administrator	3
Maintenance Agent	8	Materials Agent	2
Maintenance Analyst	78	Materials Analyst	154
Maintenance Assistant	664	Materials Assistant	77
Maintenance Associate	229	Materials Associate	172

Exhibit B5: Alternative Job Titles for *Logistics and Supply Chain Management Occupations* **by Number of Online Job Postings in San Diego County (Jan 2015 - Sep 2020)**

Job Title	#	Job Title	#
Materials Clerk	54	Operation Coordinator	22
Materials Consultant	9	Operation Director	11
Materials Coordinator	126	Operation Lead	7
Materials Director	49	Operation Manager	114
Materials Lead	33	Operation Operative	0
Materials Manager	306	Operation Planner	4
Materials Operative	0	Operation Specialist	45
Materials Planner	66	Operation Supervisor	10
Materials Specialist	128	Operation Technician	10
Materials Supervisor	81	Operations Administrator	245
Materials Technician	187	Operations Agent	112
Moving Administrator	0	Operations Analyst	2,322
Moving Agent	1	Operations Assistant	1,717
Moving Analyst	1	Operations Associate	1,472
Moving Assistant	16	Operations Clerk	213
Moving Associate	2	Operations Consultant	266
Moving Clerk	2	Operations Coordinator	1,159
Moving Consultant	8	Operations Director	2,609
Moving Coordinator	2	Operations Lead	999
Moving Director	0	Operations Manager	8,150
Moving Lead	2	Operations Operative	0
Moving Manager	33	Operations Planner	115
Moving Operative	0	Operations Specialist	3,011
Moving Planner	0	Operations Supervisor	1,883
Moving Specialist	5	Operations Technician	341
Moving Supervisor	6	Planning Administrator	33
Moving Technician	3	Planning Agent	2
Operation Administrator	7	Planning Analyst	1,188
Operation Agent	1	Planning Assistant	104
Operation Analyst	39	Planning Associate	176
Operation Assistant	12	Planning Clerk	15
Operation Associate	31	Planning Consultant	97
Operation Clerk	0	Planning Coordinator	93
Operation Consultant	6	Planning Director	441

Exhibit B6: Alternative Job Titles for *Logistics and Supply Chain Management Occupations* by Number of Online Job Postings in San Diego County (Jan 2015 - Sep 2020)

Job Title	#	Job Title	#
Planning Lead	46	Production Planner	769
Planning Manager	1,133	Production Scheduler	184
Planning Operative	0	Production Specialist	557
Planning Specialist	189	Production Supervisor	0
Planning Supervisor	87	Production Technician	1,182
Planning Technician	44	Production Warehouse Manager	7
Procurement Administrator	49	Purchasing Administrator	41
Procurement Agent	29	Purchasing Agent	283
Procurement Analyst	330	Purchasing Analyst	12
Procurement Assistant	80	Purchasing and Inventory Clerk	2
Procurement Associate	67	Purchasing Assistant	387
Procurement Clerk	8	Purchasing Associate	85
Procurement Consultant	50	Purchasing Clerk	159
Procurement Coordinator	82	Purchasing Consultant	14
Procurement Director	122	Purchasing Coordinator	202
Procurement Lead	37	Purchasing Director	95
Procurement Manager	539	Purchasing Lead	4
Procurement Operative	0	Purchasing Manager	478
Procurement Planner	13	Purchasing Operative	0
Procurement Specialist	532	Purchasing Planner	21
Procurement Supervisor	17	Purchasing Specialist	202
Procurement Technician	68	Purchasing Supervisor	46
Production Administrator	43	Purchasing Technician	18
Production Agent	3	Quality Administrator	88
Production Analyst	159	Quality Agent	26
Production Assistant	643	Quality Analyst	2,120
Production Associate	797	Quality Assistant	296
Production Clerk	111	Quality Associate	1,365
Production Consultant	19	Quality Clerk	56
Production Coordinator	298	Quality Consultant	157
Production Director	82	Quality Control Administrator	11
Production Lead	271	Quality Control Agent	1
Production Manager	1,277	Quality Control Analyst	238
Production Operative	0	Quality Control Assistant	48

Exhibit B7: Alternative Job Titles for *Logistics and Supply Chain Management Occupations* by Number of Online Job Postings in San Diego County (Jan 2015 - Sep 2020)

Job Title	#	Job Title	#
Quality Control Associate	343	Resource Specialist	482
Quality Control Clerk	26	Resource Supervisor	11
Quality Control Consultant	5	Resource Technician	59
Quality Control Coordinator	85	Reverse Logistics Manager	3
Quality Control Director	112	Scheduling Administrator	11
Quality Control Lead	51	Scheduling Agent	3
Quality Control Manager	483	Scheduling Analyst	291
Quality Control Operative	0	Scheduling Assistant	71
Quality Control Planner	0	Scheduling Associate	12
Quality Control Specialist	399	Scheduling Clerk	22
Quality Control Supervisor	67	Scheduling Consultant	3
Quality Control Technician	517	Scheduling Coordinator	346
Quality Coordinator	507	Scheduling Director	4
Quality Director	1,151	Scheduling Lead	13
Quality Lead	728	Scheduling Manager	63
Quality Manager	3,195	Scheduling Operative	0
Quality Operative	0	Scheduling Planner	1
Quality Planner	14	Scheduling Specialist	400
Quality Specialist	2,661	Scheduling Supervisor	7
Quality Supervisor	441	Scheduling Technician	35
Quality Technician	1,481	Sourcing Manager	457
Resource Administrator	18	Souring Administrator	0
Resource Agent	4	Souring Agent	0
Resource Analyst	136	Souring Analyst	0
Resource Assistant	114	Souring Assistant	0
Resource Associate	236	Souring Associate	1
Resource Clerk	18	Souring Clerk	0
Resource Consultant	4	Souring Consultant	0
Resource Coordinator	88	Souring Coordinator	0
Resource Director	50	Souring Director	0
Resource Lead	26	Souring Lead	0
Resource Manager	233	Souring Manager	0
Resource Operative	0	Souring Operative	0
Resource Planner	18	Souring Planner	0

Exhibit B8: Alternative Job Titles for *Logistics and Supply Chain Management Occupations* by Number of Online Job Postings in San Diego County (Jan 2015 - Sep 2020)

Job Title	#	Job Title	#
Souring Specialist	0	Strategic Sourcing Supervisor	0
Souring Supervisor	0	Strategic Sourcing Technician	0
Souring Technician	0	Supply Automation Tech	0
Storage Administrator	60	Supply Automation Technician	0
Storage Agent	0	Supply Chain Administrator	20
Storage Analyst	13	Supply Chain Agent	2
Storage and Distribution Managers	0	Supply Chain Analyst	523
Storage Assistant	74	Supply Chain Assistant	45
Storage Associate	49	Supply Chain Associate	109
Storage Clerk	11	Supply Chain Automation Tech	0
Storage Consultant	33	Supply Chain Clerk	11
Storage Coordinator	4	Supply Chain Consultant	149
Storage Director	5	Supply Chain Coordinator	181
Storage Lead	19	Supply Chain Director	174
Storage Manager	261	Supply Chain Lead	59
Storage Operative	0	Supply Chain Manager	909
Storage Planner	0	Supply Chain Operative	0
Storage Specialist	44	Supply Chain Planner	111
Storage Supervisor	10	Supply Chain Specialist	382
Storage Technician	28	Supply Chain Supervisor	35
Strategic Sourcing Administrator	0	Supply Chain Tech	1
Strategic Sourcing Agent	0	Supply Chain Technician	79
Strategic Sourcing Analyst	44	Transport Administrator	1
Strategic Sourcing Assistant	0	Transport Manager	20
Strategic Sourcing Associate	10	Transportation Administrator	4
Strategic Sourcing Clerk	0	Transportation Agent	9
Strategic Sourcing Consultant	10	Transportation Analyst	36
Strategic Sourcing Coordinator	0	Transportation Assistant	173
Strategic Sourcing Director	22	Transportation Associate	49
Strategic Sourcing Lead	19	Transportation Clerk	32
Strategic Sourcing Manager	181	Transportation Consultant	17
Strategic Sourcing Operative	0	Transportation Coordinator	128
Strategic Sourcing Planner	0	Transportation Director	62
Strategic Sourcing Specialist	36	Transportation Lead	33

Exhibit B9: Alternative Job Titles for *Logistics and Supply Chain Management Occupations* by Number of Online Job Postings in San Diego County (Jan 2015 - Sep 2020)

Job Title	#	Job Title	#
Transportation Manager	245	Warehouse Specialist	667
Transportation Operative	0	Warehouse Supervisor	623
Transportation Planner	103	Warehouse Technician	326
Transportation Specialist	0	Warehousing Administrator	1
Transportation Supervisor	130	Warehousing Agent	3
Transportation Technician	38	Warehousing Analyst	0
Warehouse Administrator	16	Warehousing Assistant	0
Warehouse Agent	46	Warehousing Associate	4
Warehouse Analyst	80	Warehousing Clerk	0
Warehouse Assistant	381	Warehousing Consultant	3
Warehouse Associate	3,139	Warehousing Coordinator	0
Warehouse Clerk	890	Warehousing Director	4
Warehouse Consultant	31	Warehousing Lead	0
Warehouse Coordinator	179	Warehousing Manager	3
Warehouse Director	17	Warehousing Operative	0
Warehouse Lead	332	Warehousing Planner	0
Warehouse Manager	772	Warehousing Specialist	4
Warehouse Operative	9	Warehousing Supervisor	0
Warehouse Planner	0	Warehousing Technician	0

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