CENTER OF EXCELLENCE
FOR LABOR MARKET RESEARCH
ORANGE COUNTY

ORANGE COUNTY SECTOR PROFILE:

ADVANCED TRANSPORTATION AND LOGISTICS

2024

ORANGE COUNTY REGIONAL CONSORTIUM | WORKFORCE DEVELOPMENT ALLIANCE

California Community Colleges

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INTRODUCTION

This report is the tenth in a series of 12 sector profiles that aim to provide a comprehensive analysis of Orange County's occupational landscape. This series dives into each of the 12 community college sectors, offering historical and projected occupational insights while building upon foundational research established through the Orange County Labor Market Overview.[2] This sector profile focuses on Advanced Transportation and Logistics, which the Orange County Region has ranked tenth out of the 12 sectors based on the Orange County Labor Market Overview and corresponding region-wide survey of community colleges and key partners.

The Advanced Transportation and Logistics sector comprises a wide range of occupations essential to the movement of people and goods. The majority of these jobs are classified as middle-skill, requiring specific technical knowledge and training, such as *Automotive Service Technicians and Mechanics (49-3023)#* and *Air Traffic Controllers (53-2021)*. These jobs often involve operating complex machinery or systems to ensure efficient and safe transportation. Other jobs, like *Shipping, Receiving, and Inventory Clerks (43-5071)**, *Logisticians (13-1081)#*, and *Transportation Inspectors (53-6051)*, are involved in the logistics chain, including acquisition, distribution, and delivery of goods. Some occupations, such as *Driver/Sales Workers (53-3031)** or *Automotive Glass Installers and Repairers (43-3022)**, are categorized as below-middle-skill, indicating they require less formal training but are still important in the overall transportation infrastructure. The sector also includes highly specialized roles such as *Airline Pilots, Copilots, and Flight Engineers (53-2011)^*, which is the only above middle-skill occupation due to the advanced technical expertise required and extensive training.

On the other end of the spectrum, below middle-skill roles like *Laborers and Freight, Stock, and Material Movers, Hand (53-7062)**, are essential for the smooth operation of warehouses and shipping facilities. This sector is a key driver of the economy, providing opportunities for individuals at various skill levels to contribute to essential services. It not only supports the movement of goods and passengers but also plays a role in maintaining the infrastructure that keeps global supply chains running.

The Advanced Transportation and Logistics sector is comprised of 62 occupations, 19 of which were highlighted in the Orange County Labor Market Overview. These 62 occupations account for 8% of the total number of occupations in the federal Bureau of Labor Statistics (BLS) Standard Occupational Classification (SOC) system and 8% (5) are on the U.S. News & World Report's 100 Best Jobs of 2024 list.[3]

Occupations are denoted throughout this report in italics, with their corresponding SOC code in parentheses, with below middle-skill occupations denoted with an * and above middle-skill occupations denoted with a ^ and occupations that are on the U.S. News & World Report's 2024 100 Best Jobs list denoted by #, such as *Automotive Service Technicians and Mechanics (49-3023)#*.

By examining key aspects such as occupational trends, major employers, skills, program completions, and opportunities, the OC COE seeks to highlight underlying dynamics and intricacies shaping the Advanced Transportation and Logistics sector in Orange County. Community colleges and regional stakeholders can use this information for strategic planning and data-informed decision making to address workforce needs in this sector.

ADVANCED TRANSPORTATION AND LOGISTICS OCCUPATIONAL DATA ANALYSIS

Orange County's Occupational Landscape

The Advanced Transportation and Logistics sector is comprised of 62 occupations that accounted for 151,962 jobs in 2022, representing 8% of all jobs in Orange County. These jobs are expected to grow by 5% through 2027, resulting in 21,234 projected annual openings.

Advanced Transportation and Logistics Sector Key Facts

151,962
Number of Jobs in 2022

7,158
5-Year Change through 2027

5%
5-Year Percent Change

21,234
Annual Openings

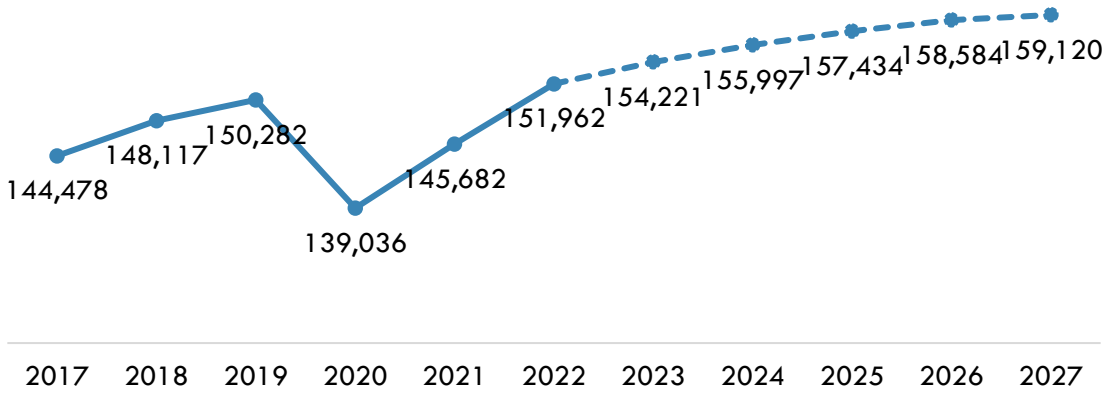
5,043
Establishments

$8.11 - $54.92
Occupational Entry-Level Wage Range

Historical and Projected Employment

Over a 10-year period, from 2017 projected through 2027, Advanced Transportation and Logistics jobs have been and are projected to continue steadily rising at a consistent pace, except for a drop during the State's shutdown in 2020 due to the COVID-19 pandemic-related economic downturn (Exhibit 1).

Exhibit 1: Historical and Projected Advanced Transportation and Logistics Employment in Orange County (2017-2027)



The 62 occupations in the Advanced Transportation and Logistics sector are categorized into one above middle-skill, 38 middle-skill, and 23 below middle-skill occupations (Exhibit 2). In 2022, the 23 below middle-skill occupations accounted for 100,064 jobs, constituting 66% of the total Advanced Transportation and Logistics workforce, followed by the 38 middle-skill occupations with 51,473 jobs, representing 34% of the total workforce (Exhibit 3).

Exhibit 2: Skill-Level for Advanced Transportation and Logistics Occupations

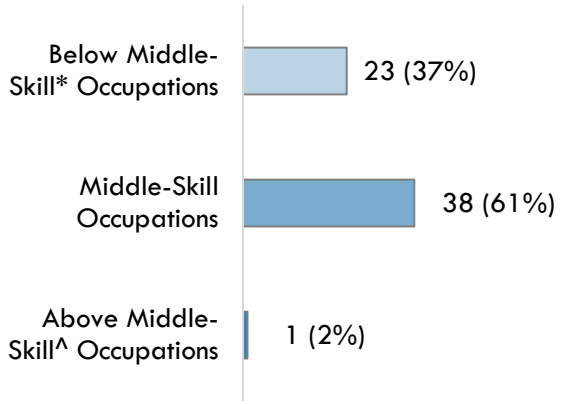
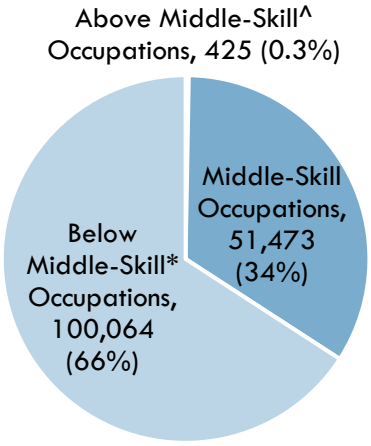


Exhibit 3: Breakdown of 2022 Jobs for Advanced Transportation and Logistics Occupations by Skill-Level



*Note: Throughout this report, Below Middle-Skill Occupations are denoted with an * and Above Middle-Skill Occupations are denoted with a ^.*

Trends In Occupational Demand

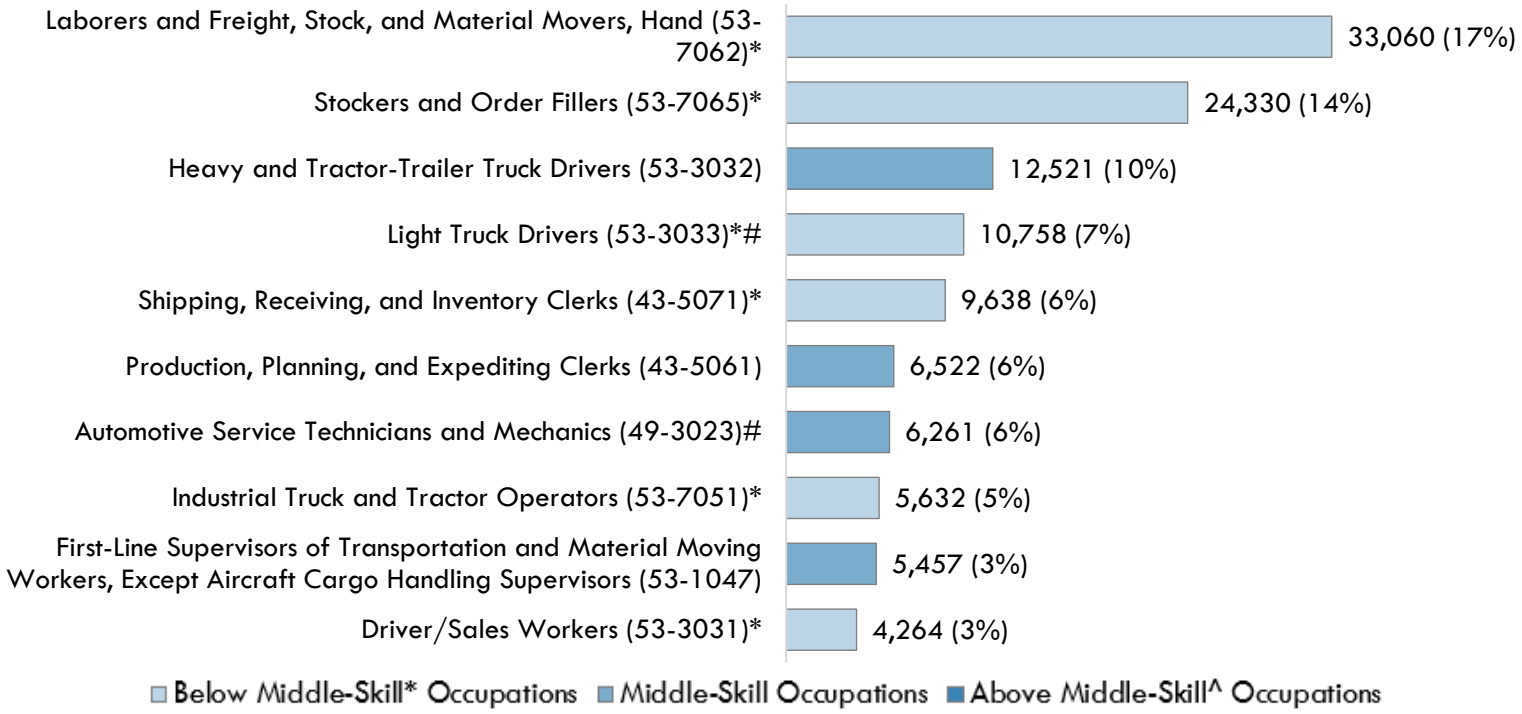
Southern California's transportation-distribution-logistics industry, driven in large part by the adjacent ports of Los Angeles and Long Beach – the largest seaport complex in the Western Hemisphere, along with the thousands of warehouses in San Bernardino and Riverside Counties, continue to be a major source of employment. However, many jobs in logistics, particularly in warehouse work, often pay less than the regional average, which raises concerns among labor advocates about the disparity between job growth, wage growth, and the rising cost of living. Despite these concerns, the demand for workers remains steady due to the industry's essential role in global trade. Furthermore, to mitigate the environmental impacts of the plethora of diesel trucks traversing the transportation corridor, environmental regulations are becoming stricter and there is growing interest in implementing cleaner technologies like zero-emissions vehicles, which could reshape the types of skills required for future transportation and logistics jobs.[4]

Regionally, the 62 occupations in this sector accounted for nearly 152,000 jobs in 2022 and are estimated to have over 21,000 annual openings through 2027 in Orange County. Jobs in this sector are projected to grow at a slower rate compared to all occupations in Orange County through 2027 and nearly one-fifth (19%) of the occupations have entry-level wages above the MIT Living Wage for Orange County of $30.48.[5] Approximately two-thirds (66%) of Advanced Transportation and Logistics jobs are for below middle-skill occupations while one-third (34%) are for middle-skill occupations.

Jobs

Jobs equate to the number of people currently in an occupation as opposed to unmet demand, which refers to the number of people still needed in an occupation. Comprising 17% of all jobs in the Advanced Transportation and Logistics sector, *Laborers and Freight, Stock, and Material Movers, Hand (53-7062)**, a below middle-skill occupation, ranks first with the most jobs (33,060), followed by *Stockers and Order Fillers (53-7065)**, another below middle-skill occupation (24,330), and *Heavy and Tractor-Trailer Truck Drivers (53-3032)*, a middle-skill occupation (12,521). All top 10 Advanced Transportation and Logistics jobs, 2022 are shown in Exhibit 4.

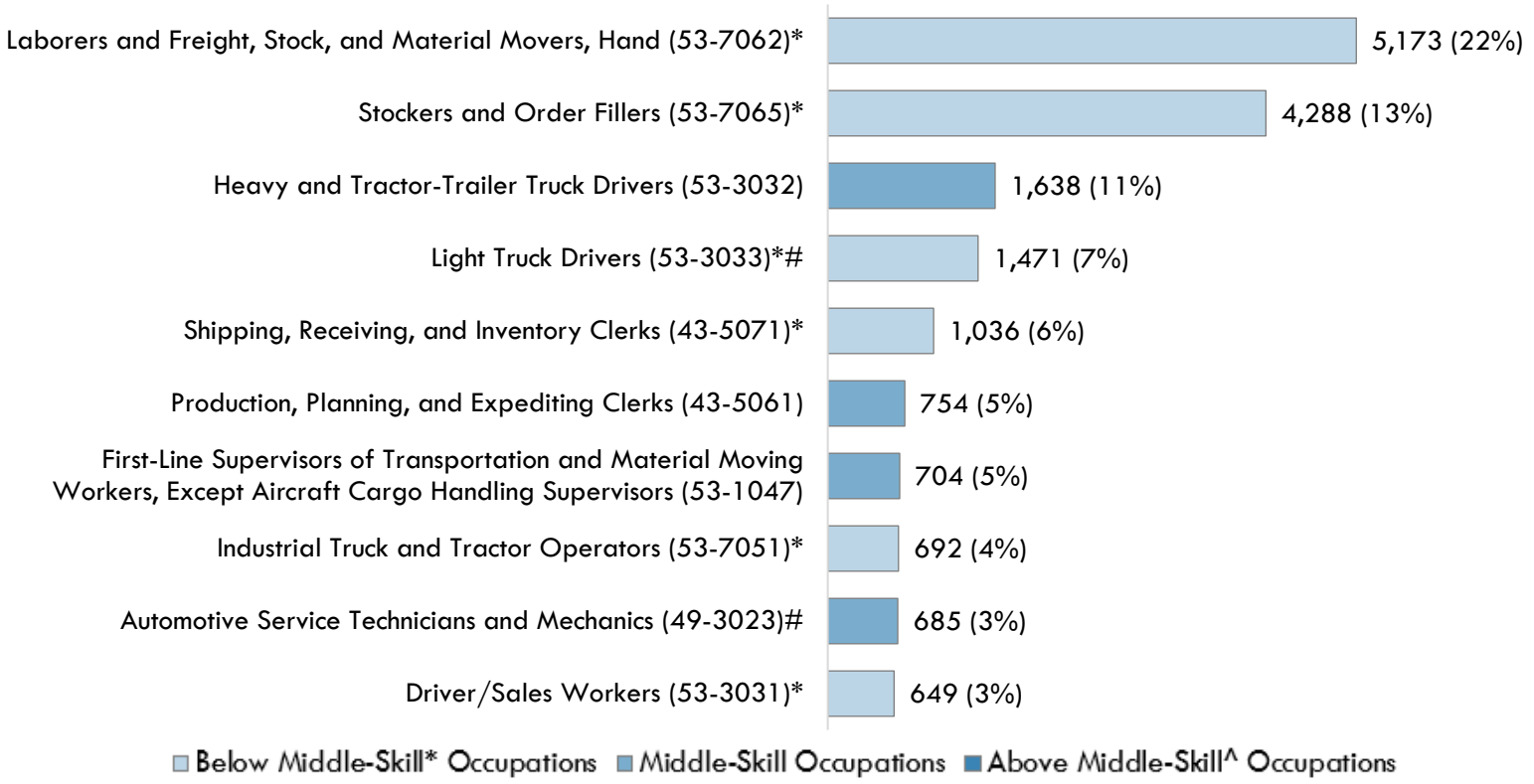
Exhibit 4: Top 10 Advanced Transportation and Logistics Jobs, 2022



Annual Openings

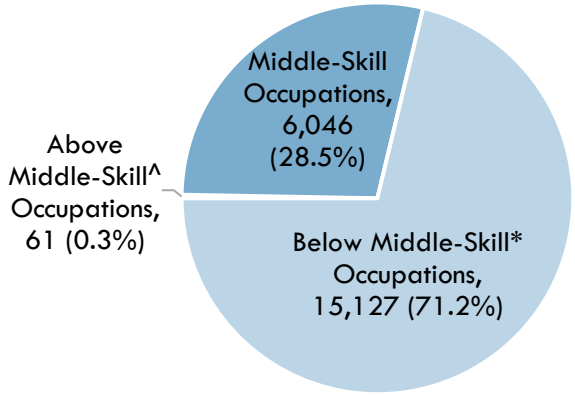
There are 21,234 Advanced Transportation and Logistics annual openings, also known as "demand" or "unmet demand", in Orange County. *Laborers and Freight, Stock, and Material Movers, Hand (53-7062)** accounts for the largest percentage of Advanced Transportation and Logistics annual openings (22%), with *Automotive Service Technicians and Mechanics (49-3023)#* and *Driver/Sales Workers (53-3031)** (3% each) rounding out Advanced Transportation and Logistics' top 10 annual openings, as shown in Exhibit 5.

Exhibit 5: Top 10 Annual Openings by Advanced Transportation and Logistics Occupation



Below middle-skill occupations comprise 71.2% of all annual openings in the Advanced Transportation and Logistics sector, followed by middle-skill occupations (28.5%). Exhibit 6 shows the annual openings by skill-level.

Exhibit 6: Distribution of All Advanced Transportation and Logistics Annual Openings by Skill-Level

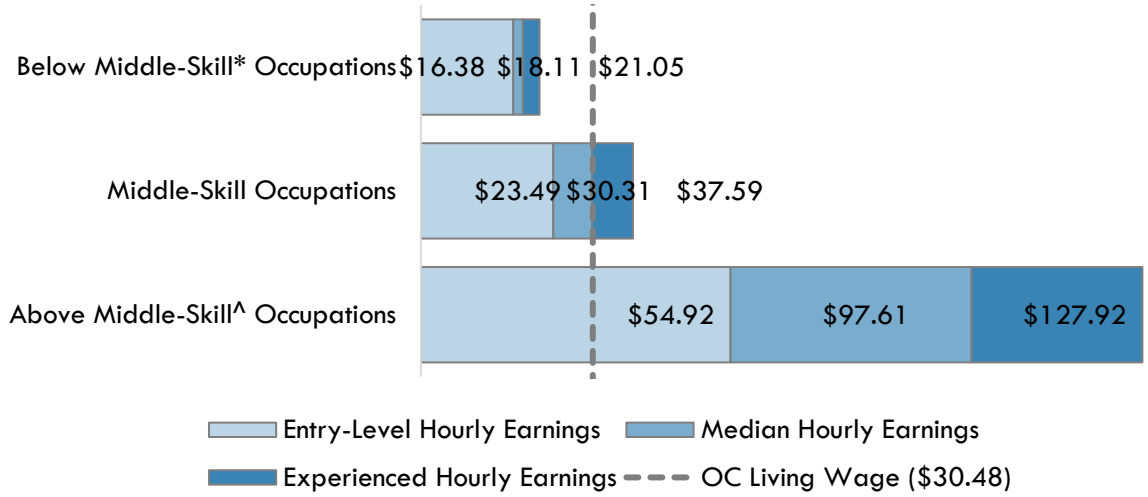


Earnings

In Orange County, the MIT Living Wage for one adult is $30.48 per hour, which is the floor benchmark for wages in the county. Of the 62 occupations in this sector, nearly one-fifth (12) have entry-level wages above Orange County's living wage. Entry-level wages across all 62 Advanced Transportation and Logistics occupations range from $8.11 to $54.92 per hour, with *Taxi Drivers (53-3054)*#* and *Airline Pilots, Copilots, and Flight Engineers (53-2011)^* at the lower- and upper-end of this range, respectively.

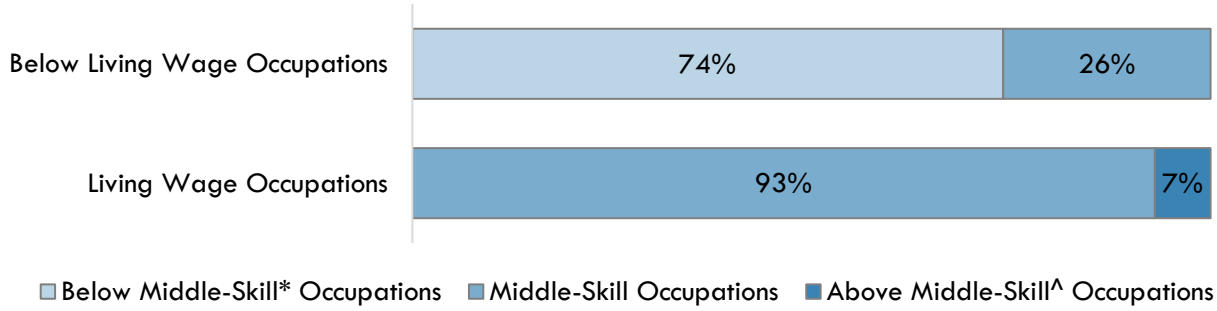
To better understand Advanced Transportation and Logistics sector wages in Orange County, wages are weighted by the number of 2022 jobs. This accounts for wage variation between occupations by normalizing the data based on the number of jobs. It adjusts for situations like a large number of low-wage jobs, a small number of high-wage jobs, or any combination of the two. Exhibit 7 shows the full spectrum of weighted wages (from entry-level to experienced) by skill level for the 62 Advanced Transportation and Logistics occupations, ranging from below-middle-skill entry-level wages of $16.38 to above middle-skill experienced wages of $127.92.

Exhibit 7: Advanced Transportation and Logistics Occupational Wages by Skill Level, Weighted by 2022 Jobs



Notably, only 4% of the annual job openings in this sector have entry-level wages above the living wage; 93% are for middle-skill occupations, 7% are for above middle-skill occupations, and none are for below middle-skill occupations, as shown in Exhibit 8.

Exhibit 8: Comparison of Living Wages by Advanced Transportation and Logistics Annual Openings and Skill Level

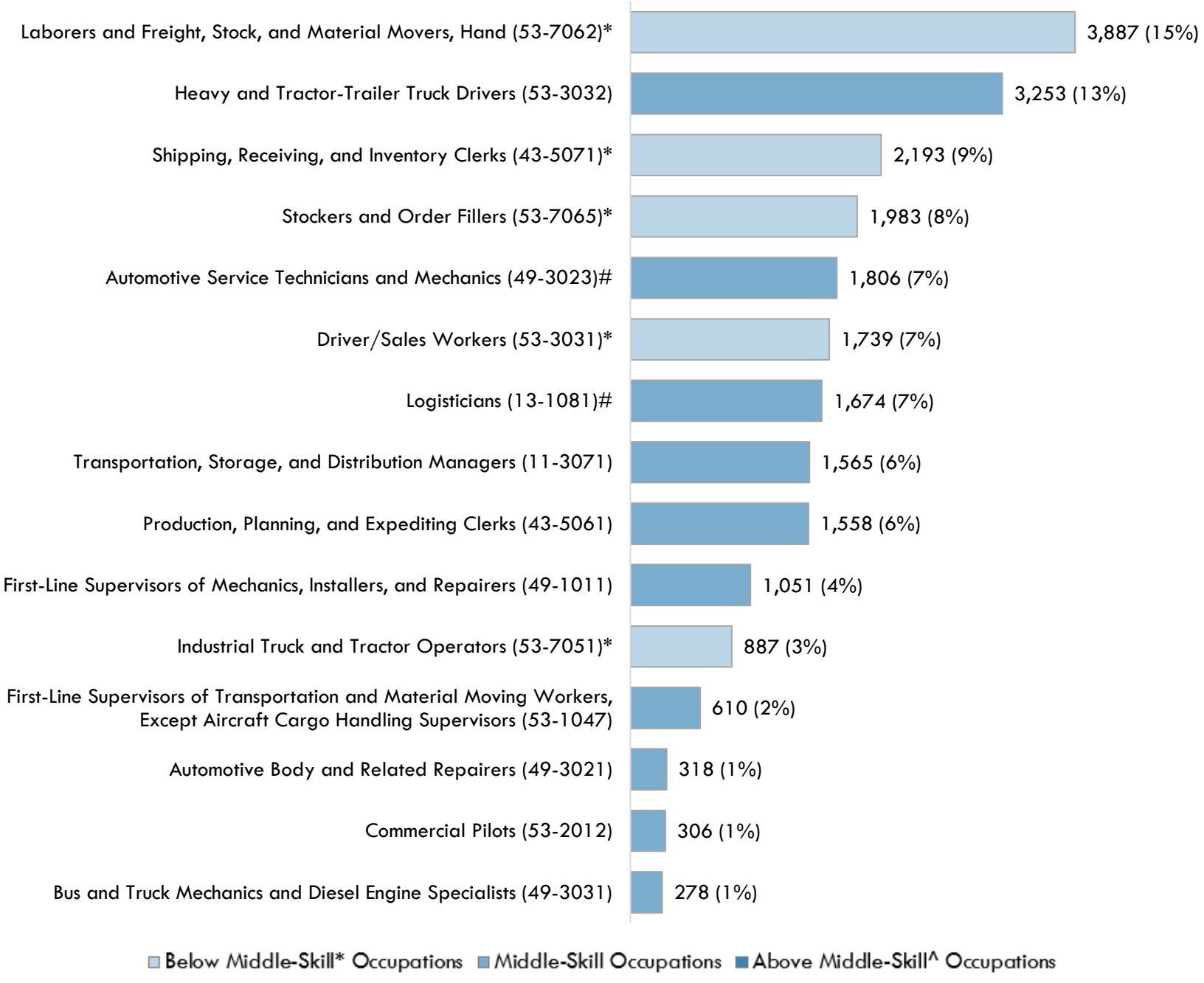


JOB POSTINGS INFORMATION

Job Postings in Orange County

Over the past 12 months (October 2023 - September 2024), there were 25,613 employer job postings within Orange County for all Advanced Transportation and Logistics occupations. Exhibit 9 shows the 15 occupations with the highest number of job postings, which represents approximately 90% of all job postings within the sector. Most notably, *Laborers and Freight, Stock, and Material Movers, Hand (53-7062)**, a below middle-skill occupation, comprise 15% of the job postings.

Exhibit 9: Top 15 Advanced Transportation and Logistics Media Occupations by Number of Job Postings



Top Employers

Orange County's Advanced Transportation and Logistics employers are very diverse, as shown in Exhibit 10. Employers with postings for below middle-skill occupations, such as Aerotek, Randstad, and Kimco Staffing are staffing agencies and focus on general labor positions. Employers with postings for middle-skill occupations include a mix of transportation and logistics companies, large corporations, and staffing agencies, such as Marten Transport, Amazon, and Aerotek. These jobs typically require more specialized skills, vocational training, apprenticeship, and/or an associate degree. Employers in the above middle-skill category offer jobs that demand higher levels of expertise, often requiring advanced degrees or extensive experience for employers including the United States Departments of Homeland Security (DHS) and Defense (DoD). No employer appears in all three groups.

Exhibit 10: Top 10 Advanced Transportation and Logistics Regional Employers with the Most Job Postings by Skill Level

Below Middle-Skill*	Middle-Skill	Above Middle-Skill^
1. Aerotek	1. Marten Transport	1. United States DHS
2. Amazon	2. Geopaq Logic	2. Sta Jets
3. Kroger	3. Heartland Express	3. Dynamic Aviation
4. Sprouts Farmers Market	4. Amazon	4. Netjets
5. HD Supply	5. Crash Champions	5. Helistream
6. Walmart	6. Aerotek	6. Jet Aviation
7. Kimco Staffing Services	7. System Transport	7. Air Methods
8. Randstad	8. Anduril Industries	8. United States DoD
9. The Salvation Army	9. Disney	9. General Dynamics
10. Kimco Staffing	10. American Tire Depot	10. Flying Lion

Top Job Titles

Below middle-skill job titles such as Warehouse Associates, Shipping and Receiving Clerks, and Stock Associates typically require minimal training and focus primarily on manual labor and basic technical skills. Middle-skill job titles such as Logistics Coordinators and Warehouse Supervisors reflect positions that involve more responsibility, such as overseeing production processes or working with specialized equipment. Above middle-skill job titles typically require technical complexity and advanced education or specialized training, such as Captains and Helicopter Pilots. Job titles by skill level are shown in Exhibit 11.

Exhibit 11: Top Advanced Transportation and Logistics Job Titles in Orange County by Skill Level

Below Middle-Skill *	Middle-Skill	Above Middle-Skill^
1. Warehouse Associates	1. CDL-A Truck Drivers	1. Customs and Border Protection Officers
2. Delivery Drivers	2. Automotive Technicians	2. Captains
3. Forklift Operators	3. Drivers	3. Pilots Captain
4. Material Handlers	4. Regional CDL-A Truck Drivers	4. Contract Pilots
5. Warehouse Workers	5. Maintenance Supervisors	5. Line Pilots
6. Shipping and Receiving Clerks	6. OTR CDL-A Truck Drivers	6. Pilots First Officer
7. Warehouse Clerks	7. Logistics Coordinators	7. Helicopter Pilots
8. Shipping Clerks	8. Warehouse Supervisors	8. Military Pilots
9. Stock Associates	9. Auto Body Technicians	9. Team Captains
10. Produce Clerks	10. Automotive Technicians/Mechanics	10. Line Captains

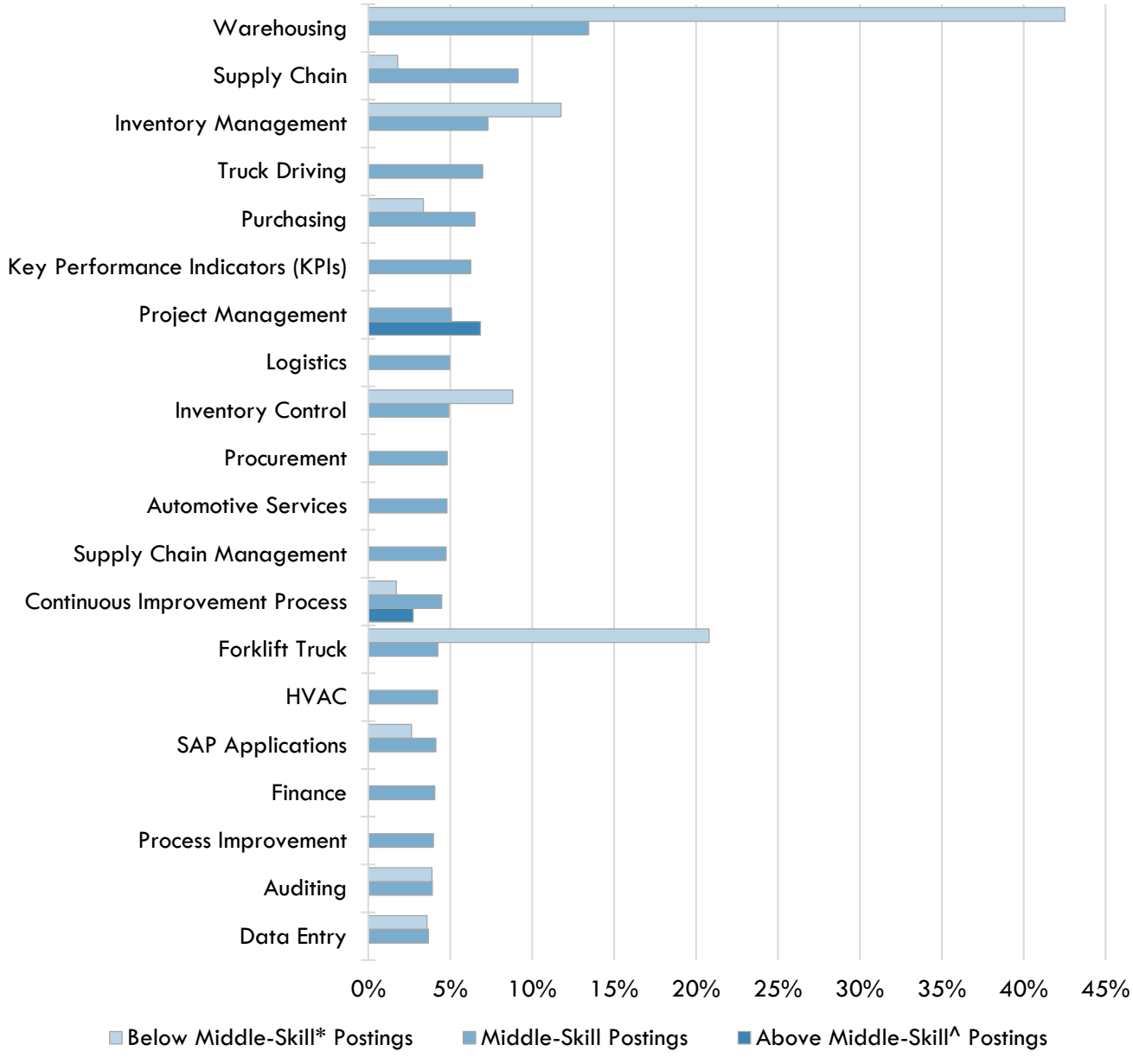
Skills in Job Postings

There are three types of skills listed in job postings: specialized ("technical" or "hard"), common ("soft" or "human"), and computer skills.

Top Specialized Skills

Among the 20 specialized skills listed, only one (1) is common across all three occupational skill levels: continuous improvement process. Warehousing (43%) and forklift truck (21%) are the highest requested skills in below middle-skill postings, indicating their significance in jobs such as *Laborers and Freight, Stock, and Material Movers, Hand (53-7062)** and *Shipping, Receiving, and Inventory Clerks (43-5071)**. Similarly, skills like warehousing (13%) and supply chain (9%) are prevalent in middle-skill occupations, such as *Transportation, Storage, and Distribution Managers (11-3071)* and *Logisticians (13-1081)#*. Notably, the only two skills for above middle-skill postings are project management (7%) and continuous improvement process (3%) as shown in Exhibit 12.

Exhibit 12: Top 20 Specialized Skills in Advanced Transportation and Logistics Occupations



Top Common Skills

Among the top 10 common skills listed in Exhibit 13, there are notable differences in the most frequently demanded overall. Communication is more highly requested for middle-skill (36%) than in above middle-skill (29%) and below middle-skill (26%) postings. Also notable is operations which is requested in 58% of above middle-skill, 23% of middle-skill postings, and 12% of below middle-skill postings. Below middle-skill postings rank customer service (28%), communication (26%), and management (20%) as the most requested common skills.

Exhibit 13: Top 10 Common Skills in Advanced Transportation and Logistics Occupations

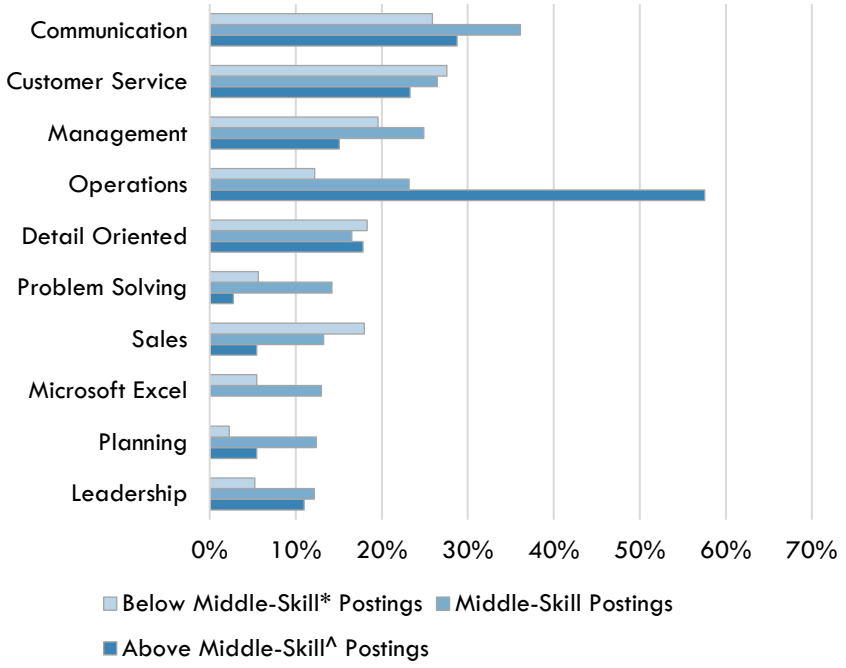
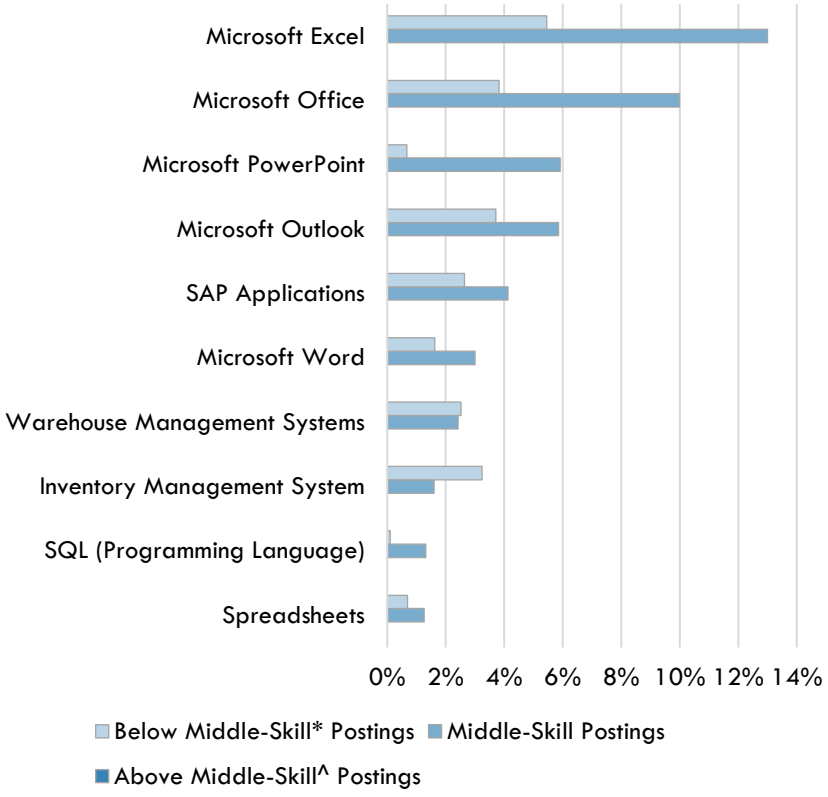


Exhibit 14: Top 10 Computer Skills in Advanced Transportation and Logistics Occupations



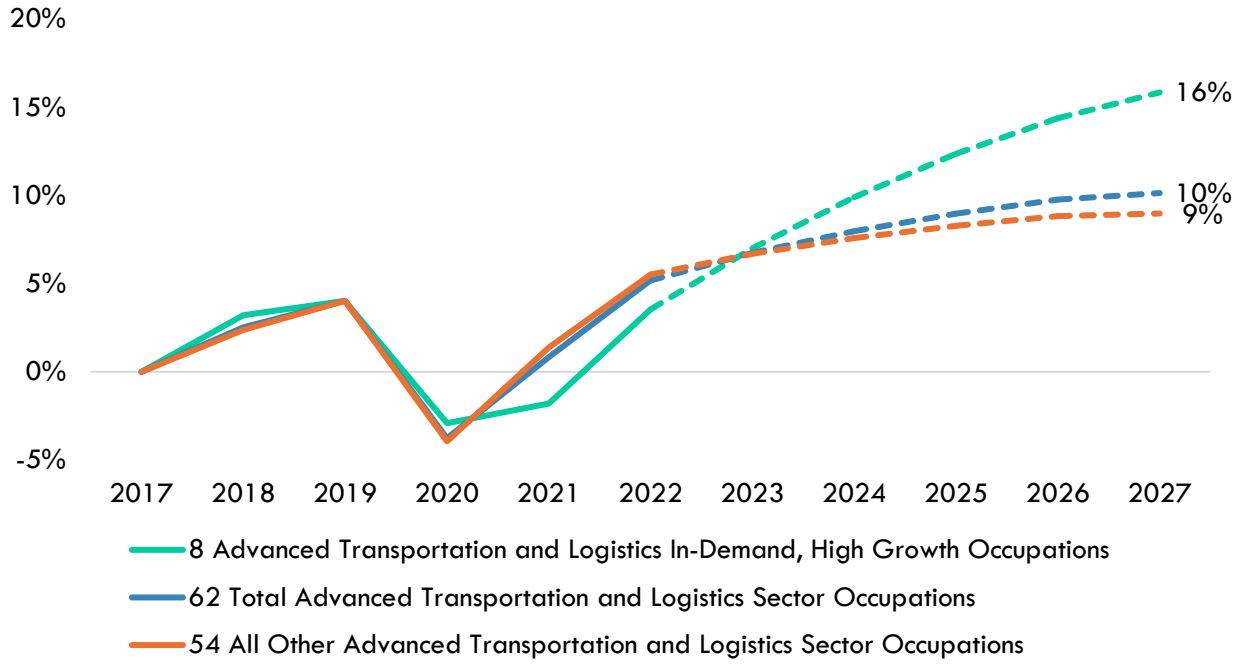
Top Computer Skills

Computer skills are not requested nearly as often as those in the other skills categories within the Advanced Transportation and Logistics sector. However, in general, they are most frequently requested in middle-skill job postings. Microsoft Excel is mentioned in 13% of middle-skill postings and 5% of below middle-skill postings. Similarly, Microsoft Office is the highest in middle-skill postings (10%), compared to 4% in below middle-skill postings. Notably, there are no skills represented for above middle-skill postings. The top 10 computer skills are shown in Exhibit 14.

KEY OCCUPATIONS DRIVING EMPLOYMENT

There are eight Advanced Transportation and Logistics Sector occupations, 13% of the total 62 occupations in the sector, that have a significant number of jobs and annual openings and are projected to have high growth through 2027. These eight key occupations are anticipated to drive employment with a projected 16% increase from 2017 to 2027; during the same period, employment for the 54 other occupations in the Advanced Transportation and Logistics Sector is projected to increase 9%, as shown in Exhibit 15.

Exhibit 15: Advanced Transportation and Logistics Employment Change, 2017-2027

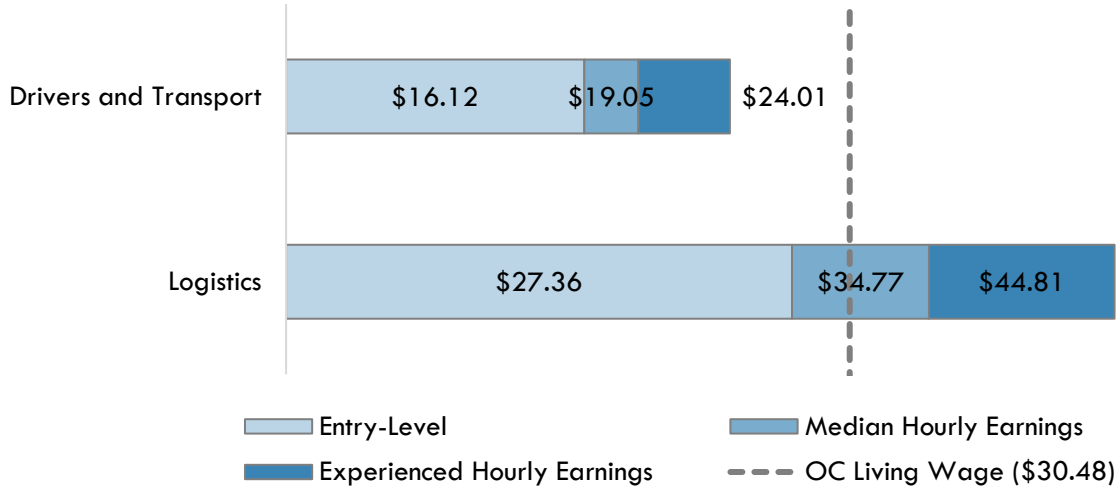


Key occupations driving employment in the Advanced Transportation and Logistics sector can be grouped into two broad categories:

Logistics	• *Logisticians (13-1081)#* • *Cargo and Freight Agents (43-5011)*
Drivers and Transport	• *Couriers and Messengers (43-5021)** • *Driver/Sales Workers (53-3031)** • *Light Truck Drivers (53-3033)*#* • *Bus Drivers, School (53-3051)*#* • *Shuttle Drivers and Chauffeurs (53-3053)** • *Taxi Drivers (53-3054)*#*

Wages for these high-growth occupations vary, with the Drivers and Transport group of occupations having the lowest entry-level hourly wages ($16.54) and Logistics having the highest ($27.36). Notably, entry-level, median, and experienced wages are significantly below the living wage for the Drivers and Transport group. Exhibit 16 shows the wage range for these two groups.

Exhibit 16: Wages by Key Advanced Transportation and Logistics Occupation Group, Weighted by 2022 Jobs



Though these two key occupations groups comprise 13% of the total number of occupations, they accounted for 16% of the Advanced Transportation and Logistics Sector's online job postings over the past 12 months, as shown in Exhibit 17.

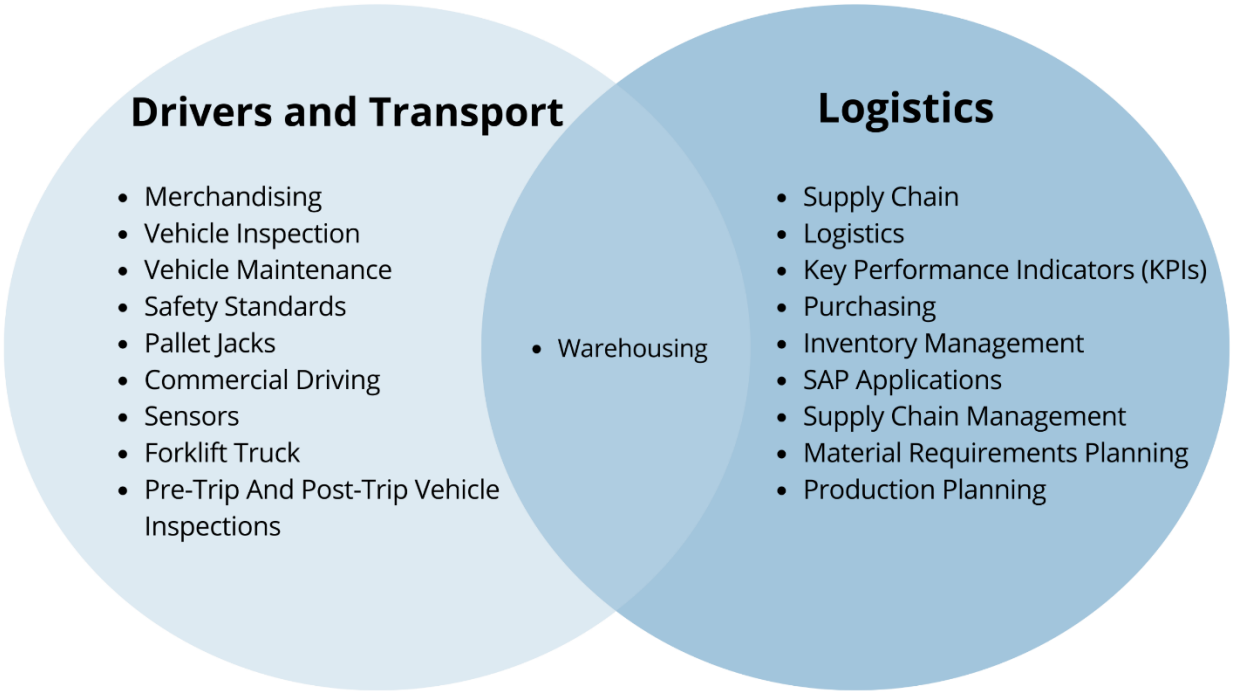
Exhibit 17: Number of Job Postings by Key Advanced Transportation and Logistics Occupation Group

Key Occupation Group	Number of Postings	% of Total Other Sector Postings
Drivers and Transport	2,206	9%
Logistics	1,901	7%
Total	**4,107**	**16%**

The skills requested by employers in online job postings for these occupations vary significantly. When considering the top 10 skills for each group, only one skill, warehousing, overlaps between the two groups. However, there are numerous unique skills requested in online job postings for each group, as shown in Exhibit 18.

- **Drivers and Transport** skills include vehicle operation, maintenance, and safety, as well as safety standards for operating and transporting equipment.
- **Logistics** skills are related to supply chain and inventory management, as well as demand and production planning.

Exhibit 18: Advanced Transportation and Logistics Key Occupations Unique Skills Analysis



The following sections highlight trends, specific occupations, and examine emerging topics and areas for each of the three groups of key occupations driving employment in the Advanced Transportation and Logistics Sector.

Drivers and Transport

There are six occupations in the Drivers and Transport key occupation group:

- *Couriers and Messengers (43-5021)**
- *Driver/Sales Workers (53-3031)**
- *Light Truck Drivers (53-3033)*#*
- *Bus Drivers, School (53-3051)**
- *Shuttle Drivers and Chauffeurs (53-3053)**
- *Taxi Drivers (53-3054)*#*

Though all six occupations are below middle-skill, three are U.S. News & World Report 2024 Best Jobs: *Light Truck Drivers (53-3033)*#, Bus Drivers, School (53-3051)*, and Taxi Drivers (53-3054)*#*.

Autonomous and Self-Driving Vehicles

With advances in automatous and self-driving vehicles, workers in the Drivers and Transport key occupation group could be greatly impacted. Two 2017 studies from the U.S. Department of Commerce and Center for Global Policy Solutions show that workers in these Drivers and Transport occupations will be impacted but disagree at how fast those impacts will occur. The Department of Commerce notes that widespread adoption of autonomous vehicles will likely take several years, while the Center for Global

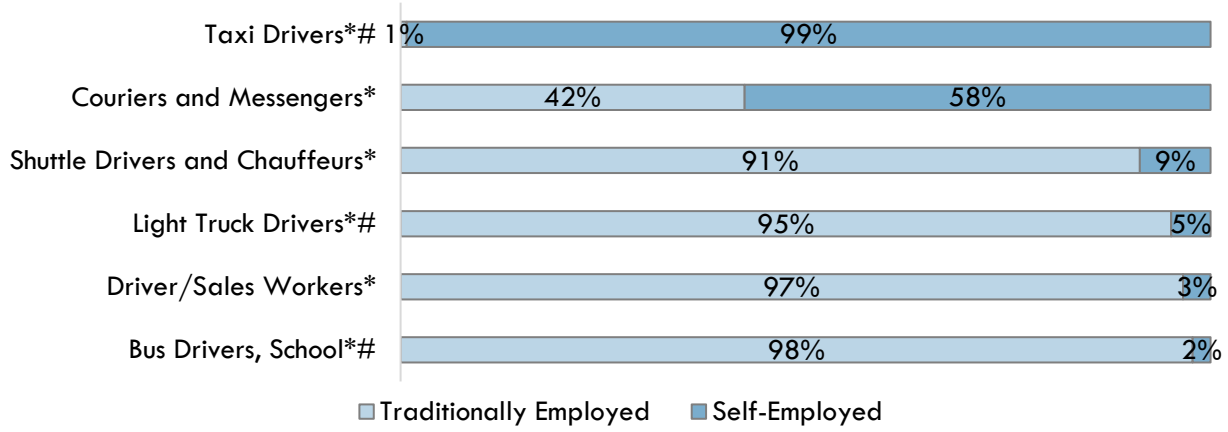
Policy Solutions states that more "than four million jobs will likely be lost with a rapid transition to autonomous vehicles."[6,7]

Notably, both studies conclude that the workers that will be most impacted by autonomous vehicles are older men with low levels of formal education. According to the Department of Commerce, "workers in motor vehicle operator jobs are older, less educated, and for the most part have fewer transferable skills than other workers, especially the kinds of skills required for non-routine cognitive tasks."[8] Both organizations recommend developing education and retraining programs if these workers lose their jobs due to the rise of autonomous vehicles.

Self-Employment for Drivers

Though 80% of workers in these Drivers and Transport occupations are traditionally employed, there is a high percentage of self-employed workers in two occupations. Approximately 99% of *Taxi Drivers (53-3054)*#* and 58% of *Couriers and Messengers (43-5021)** are considered self-employed, as shown in Exhibit 19.

Exhibit 19: Percentage of Self-Employed Workers for Drivers and Transport Occupations



Since 2018, there has been an ongoing effort in California to classify app-based drivers, such as those that provide rideshare and delivery services, as employees, rather than self-employed independent contractors. Exhibit 20 shows a timeline of significant events that have impacted drivers.

Exhibit 20: Assembly Bill 5 and Proposition 22 Timeline[9,10,11]

April 30, 2018

- California Supreme Court issued opinion in *Dynamex Operations West Inc. v. The Superior Court of Los Angeles County* that "effectively expanded the number of workers that will be deemed as employees...ultimately granting such workers benefits, minimum wage, and overtime compensation, as well as rest and meal breaks."

Sept. 18, 2019

- Governor Newsom signed Assembly Bill 5 Worker Status: employees and independent contractors (AB-5) into law.
- AB-5 established rules, commonly known as the ABC Test, to determine if a worker should be considered an employee or independent contractor.

October 22, 2020

- In *People v. Uber Technologies, Inc.*, California Court of Appeals "prohibited Uber and Lyft from misclassifying their drivers as independent contractors under Assembly Bill 5."

Nov. 3, 2020

- California voters approve Proposition 22, which:
  - exempted app-based drivers from AB-5 rules
  - established labor and wage rules for app-based drivers, "including an earnings floor, limits on working hours, healthcare subsidies, and occupational insurance benefits."

July 25, 2024

- Afer a series of legal challenges, the California Supreme Court unanimously upheld Propsition 22, marking a victory for companies that use app-based drivers.

After years of competing legislation and propositions, as well as court cases, the California Supreme Court unanimously upheld Proposition 22 on July 25, 2024. However, the Court also noted that the "Legislature might be able to pass a statute that adds app-based drivers to the state's workers' compensation system without classifying them as employees."[12] These efforts could have a significant impact on self-employment, benefits, and other forms of compensation for drivers in the future.

Logistics

The Logistics group includes two key occupations: *Logisticians (13-1081)#* and *Cargo and Freight Agents (43-5011)*. Both occupations are considered middle-skill and *Logisticians (13-1081)#* is a U.S. News & World Report 2024 Best Job.

Supply Chain Worker Shortage

According to Harvard Business Review, skills shortages for supply chain and logistics workers "are now seen across all points of the supply-chain continuum, from sourcing to production, logistics, and delivery of goods and services."[13] Additionally, recruiting and retaining qualified workers was cited as the number-one challenge for supply chain executives in 2023 and logistic employee turnover was up 33% compared to pre-pandemic levels.[14]

To help address supply chain and logistics worker shortages, companies are investing heavily in technology, including artificial intelligence, to automate routine and repetitive tasks and free up workers to

focus on more complex and higher value tasks. Though logistics companies are interested in upskilling and reskilling workers, "training bottlenecks across industries are constraining companies' capacities to upskill workers who can fill roles involving greater complexity."[15] Orange County community colleges with existing supply chain and logistics programs should consider working with local employers experiencing supply chain and logistics worker shortages to help them meet their training needs.

Additional Advanced Transportation and Logistics Sector Trends

Drone Technology

Previous research from the OC COE has demonstrated that uncrewed systems applications and drone technology cut across multiple occupational areas including construction, maintenance and repair, photography, public safety, software development, and more.[16] While drones were originally developed for military applications, the Federal Aviation Administration issued its first commercial drone permit in 2006, opening the door for private companies, government agencies, and individuals to use drones for a wide variety of activities.

Within Orange County, the Irvine Police Department and Orange County Sheriff's Department launched drone programs in 2018 and 2019, respectively. These programs include civilian and uniformed drone pilots who use drones to assist with ongoing police and fire operations.[17,18] To control the local mosquito population and lower the risk of West Nile Virus, the Orange County Mosquito and Vector Control District used drones to drop larvicide at several locations throughout the county in 2021.[19] The Disneyland Resort – the largest employer in the county – is exploring how to incorporate drones into "nighttime spectaculars" as they do in Paris; as of 2022, the potential use of drones is in the "blue sky" phase of development, meaning the very early stages of exploration.[20]

Exhibit 21 shows the top drone technology occupations in Orange County, by number of job postings, over the past 12 months. Orange County community colleges should consider aligning current and future drone technology program offerings with programs that train for these occupations.

Exhibit 21: Top Drone Technology Occupations in Orange County by Number of Job Postings, Last 12 Months (n=392)

Occupation	Job Postings	Percentage of Job Postings
Software Developers	30	8%
Operating Engineers and Other Construction Equipment Operators	25	6%
Computer Occupations, All Other	24	6%
Postsecondary Teachers	15	4%
Aerospace Engineers	13	3%
Surveying and Mapping Technicians	13	3%
Mechanical Engineers	11	3%
Photographers	11	3%
Electrical and Electronic Engineering Technologists and Technicians	10	3%
Retail Salespersons	10	3%

Green Jobs

Exhibit 22 show's O*NET's definitions of the Green Economy and Green Jobs. Notably, the Green Economy and its related activities impact how work is conducted for various occupations. Rather than a job being labeled "green" or not, it is better to understand the "greening" of existing jobs. Notably, 24% (15) of the 62 Advanced Transportation and Logistics occupations are considered Green Jobs by O*NET.

Exhibit 22: Green Economy and Green Jobs Definitions, O*NET[21]

Green Economy

- Encompasses the economic activity related to reducing the use of fossil fuels, decreasing pollution and greenhouse gas emissions, increasing the efficiency of energy usage, recycling materials, and developing and adopting renewable sources of energy

Green Jobs

- The "greening" of occupations refers to the extent to which green economy activities and technologies increase the demand for existing occupations, shape the work and worker requirements needed for occupational performance, or generate unique work and worker requirements

A report from the Brookings Institute notes that "hiring and training more workers in the green transition to a cleaner, more resilient economy represents a huge challenge, but also a huge opportunity," and that "millions of additional workers will likely be needed in the years to come."[22] Orange County's draft Climate Action Plan, published in August 2024, notes that "green technology presents exciting opportunities. Orange County holds a unique position, boasting a 50% higher concentration in green technology employment compared to the state of California."[23] Furthermore, "according to the Orange County Workforce Development Board, Orange County is particularly strong in the green transportation cluster and more concentrated in employment in this industry sector relative to the state.[24]

Green Jobs represent 56% of the total Advanced Transportation and Logistics jobs in Orange County. Additionally, entry-level, median, and experienced level wages for Green Jobs are higher than those for non-Green Jobs. These Green Jobs will play a critical role as both California and Orange County continues to decarbonize and reduce their reliance on fossil-fuels. Exhibit 23 compares labor market demand data for Advanced Transportation and Logistics Non-Green Jobs and Green Jobs in Orange County.

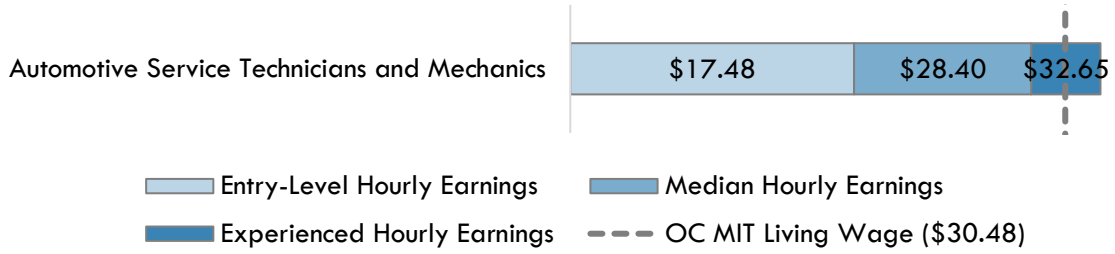
Exhibit 23: Non-Green vs. Green Advanced Transportation and Logistics Jobs in Orange County, 2022-2027

Job Type	2022 Jobs	2027 Jobs	2022 - 2027 Change	2022 - 2027 % Change	Annual Openings	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
Non-Green	66,108	69,791	3,681	6%	9,951	$18.26	$21.43	$25.68
Green	85,854	89,329	3,474	4%	11,283	$19.38	$23.26	$27.93

Wages for Automotive Service Technicians and Mechanics

Exhibit 24 shows the wage range for *Automotive Service Technicians and Mechanics (49-3023)#*, one of the largest Advanced Transportation and Logistics occupations in Orange County for which community colleges offer training programs. Notably, typical entry-level ($17.48) and median ($28.40) wages are below the OC MIT Living wage of $30.48.

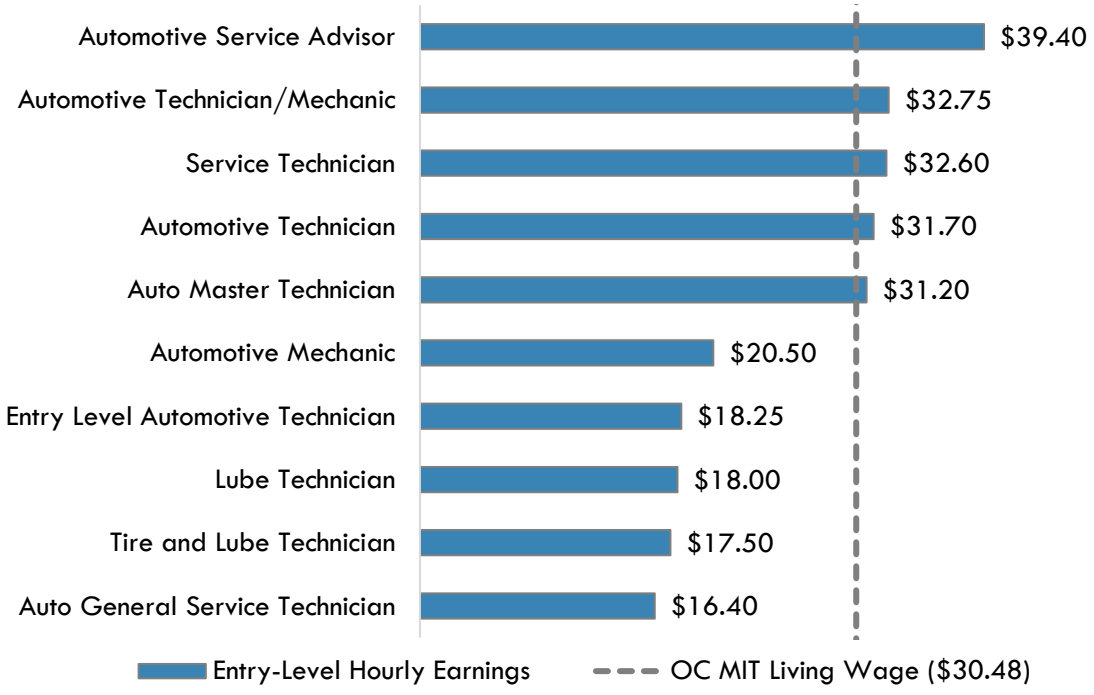
Exhibit 24: Wages for Automotive Service Technicians and Mechanics



Though wages are below the living wage, there is significant variation in wages when considering different job titles. Generally, workers employed as lube technicians, tire and lube technicians, or similar titles have wages that are significantly lower than those for automotive service advisors and automotive technicians. The skills and certifications for these job titles vary and there is typically a wage premium for workers with Automotive Service Excellence (ASE) certifications.

Exhibit 25 shows the median advertised wages for the various top posted job titles related to *Automotive Service Technicians and Mechanics (49-3023)* since January 2022 in Orange County.[25] Notably, there is a significant jump in advertised wages between auto master technician ($31.20) and automotive mechanic ($20.50). Orange County community colleges should consider this information when advertising potential earnings for automotive technician programs and when developing educational pathways to higher-level automotive service positions.

Exhibit 25: Median Advertised Wages for Automotive Service Technicians and Mechanics Job Titles in Orange County, January 2022 to October 2024



Zero-Emissions Vehicles

In 2022, the California Air Resources Board (CARB) released a climate action plan to cut air pollution, reduce greenhouse gas emissions and fossil-fuel consumption, and achieve carbon neutrality by 2045.[26] Additionally, the Advanced Clean Cars II program "lays out California's legally binding path to achieving 100% zero-emission vehicle (ZEV) sales in 2035."[27] California is currently the largest zero-emissions vehicle market in the nation and the Advanced Clean Cars II program requires more use of battery-electric, hydrogen fuel cell electric, and plug-in hybrid electric vehicles to meet California's climate goals.[28]

To incentivize adoption of zero-emission vehicles, CARB developed rebates for clean cars, funding for charging options, and more. There are projected to be 180 zero-emission and plug-in hybrid electric vehicles by 2025. In Orange County, the Orange County Automobile Dealers Association (OCADA) notes that the "battery electric vehicle (BEV) market share has increased" and that "hybrid and plug-in vehicle sales out-pace [the] industry so far this year."[29] However, there is a global shortage of qualified technicians to fix and repair electric vehicles, which could undermine zero-emissions efforts.[30] Orange County community colleges should make sure automotive technology programs prepare students for working with zero-emissions vehicles.

ADVANCED TRANSPORTATION AND LOGISTICS SUPPLY

Orange County's educational institutions provide programs tailored to equip students with skills suited for different levels of occupations within the Advanced Transportation and Logistics sector. The following visuals outline the number of awards conferred by both community colleges and non-community colleges, program observations from COCI[31], as well as the regional programs and institutions that have conferred the most awards.

4,288
community college awards

4,897
non-community college awards

9,185
total awards conferred

COCI Observations

- There are 131 unique Advanced Transportation and Logistics programs offered by Orange County community colleges.
- Most programs (68%) are for Certificates of Achievement, distantly followed by associate and associate for transfer degrees (25%) and noncredit awards (7%).
- Cypress offers the most Advanced Transportation and Logistics programs (43), followed by Saddleback (22) and Santa Ana (21).
- The majority of awards are listed under the 0948.00 Automotive Technology (56%) TOP code, distantly followed by 3020.20 Piloting (9%) and 3020.10 Aviation and Airport Management (5%).

Top Program Awards

Community College:
Business Administration: 2,538
Automotive Technology: 371
Business Management: 345
Office Technology/Office Computer Applications: 326
Management Development and Supervision: 143

Non-Community College:
Business Administration and Management, General: 4,679
Public Administration: 117
Truck and Bus Driver/Commercial Vehicle Operator and Instructor: 44
General Office Occupations and Clerical Services: 29
Automobile/Automotive Mechanics Technology/Technician: 24

Most Awards

Community College:
Coastline: 710
Cypress: 547
Orange Coast: 516
Santa Ana: 500
Saddleback: 495

Non-Community College:
California State University-Fullerton: 2,467
University of California-Irvine: 528
Chapman University: 524
Westcliff University: 473
University of Massachusetts Global: 453

Community College Student Outcomes

Orange County community college students account for 15% of all Advanced Transportation and Logistics community college students in California. The visuals below show the Strong Workforce Program (SWP) metrics for the Advanced Transportation and Logistics sector in Orange County.[32]

3,073
SWP Students (2021-22)

379
SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status (2021-22)

51
SWP Students Who Transferred to a Four-Year Postsecondary Institution (2019-20)

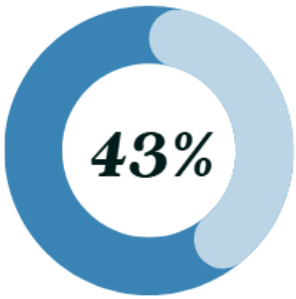
$38,260
Median Annual Earnings for SWP Exiting Students (2020-21)

SWP Students Who Earned 9 or More Career Education Units in the District in a single Year (2021-22)

SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course (2021-22)

SWP Students with a Job Closely Related to Their Field of Study (2019-20)

Median Change (Gain) in Earnings for SWP Exiting Students (2020-21)



SWP Exiting Students Who Attained the Living Wage (2020-21)

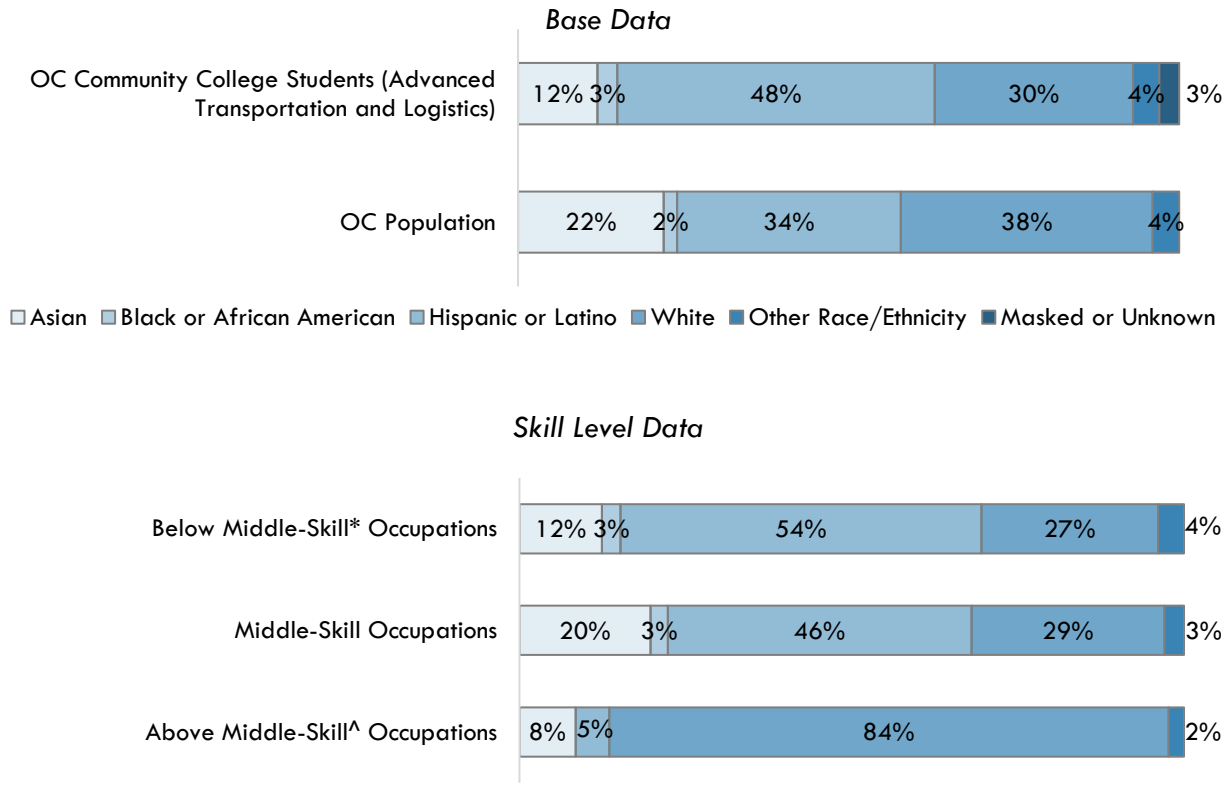
DEMOGRAPHICS

Ethnicity

Exhibit 26 shows the ethnicity of Orange County community college students enrolled in Advanced Transportation and Logistics programs compared to the overall Orange County population and the three skill-level occupational groups. Notably, 48% of Advanced Transportation and Logistics students are Hispanic or Latino, which is higher than the population (34%), and significantly higher than workers in above middle-skill occupations (5%). Conversely, 84% of workers in these above middle-skill occupations are white, which is higher than the population (38%), and community college Advanced Transportation and Logistics students (30%).

More than half (54%) of workers in below middle-skill occupations are Hispanic or Latino; nearly half (46%) of workers in middle-skill occupations are Hispanic or Latino.

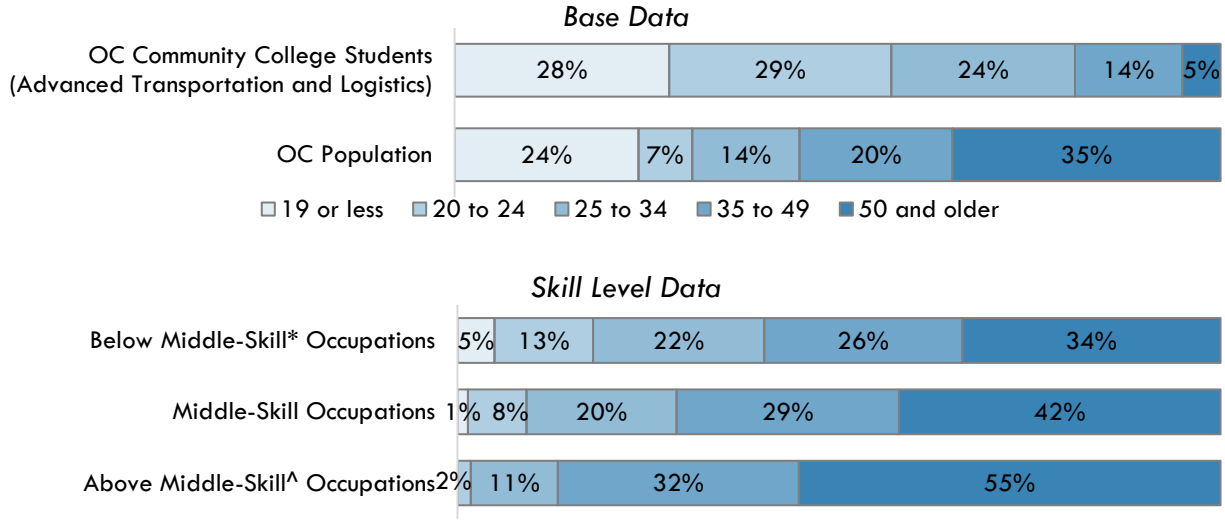
Exhibit 26: Advanced Transportation and Logistics Sector Demographics by Ethnicity



Age Group

Exhibit 27 shows the age of Orange County community college students enrolled in Advanced Transportation and Logistics programs compared to the overall Orange County population and the three skill-level occupational groups. At least 60% of workers in each of the three skill level occupations are 35 and older, which is higher than the population (55%) and community college Advanced Transportation and Logistics students (19%). Notably, nearly half of middle-skill workers (42%) and more than half of above middle-skill workers (55%) are 50 and older, which is higher than Orange County population of the same age group (35%).

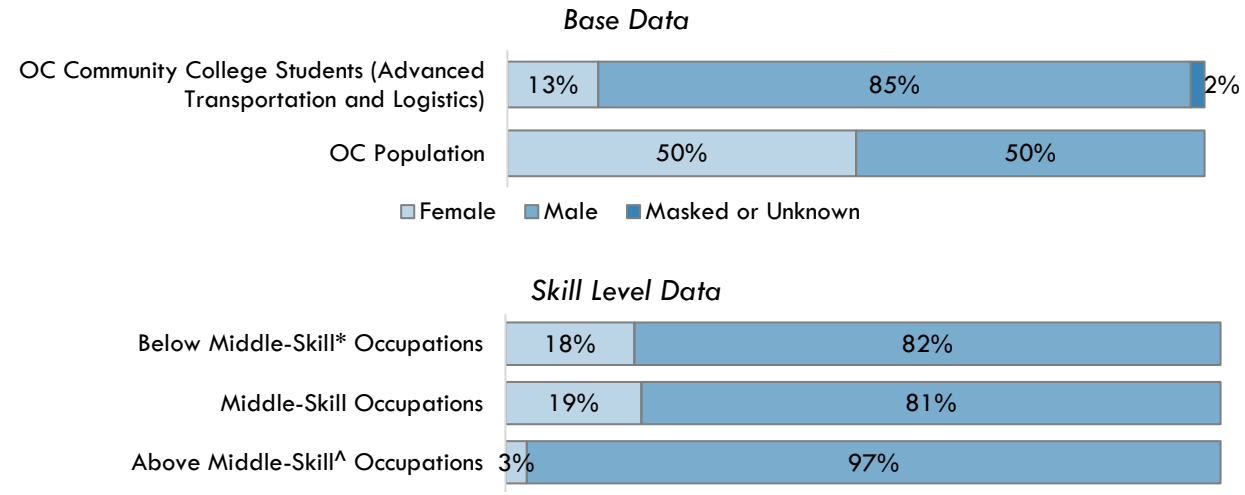
Exhibit 27: Advanced Transportation and Logistics Sector Demographics by Age Group



Sex

Exhibit 28 shows the sex of Orange County community college students enrolled in Advanced Transportation and Logistics programs compared to the overall Orange County population and the three skill-level occupational groups. Though the population is split evenly, 85% of Advanced Transportation and Logistics students and between 81% and 97% of workers in these occupations are men.

Exhibit 28: Advanced Transportation and Logistics Sector Demographics by Sex



PUBLIC POLICY AND FUNDING OPPORTUNITIES

Green and Air Quality Policy

Federal transportation regulations span decades; however, recent policies have been enacted to specifically address clean energy and air quality. The Energy Policy Act of 2005 focuses on energy production from alternative sources and included several provisions related to alternative fuels and vehicles, air quality, and fuel efficiency.[33] The Energy Independence and Security Act of 2007 aimed to increase clean and renewable fuel production and established the renewable fuel standard to promote the use of alternative vehicle fuels such as hydrogen, natural gas, and electricity.[34]

The California legislature has also taken significant steps to reduce greenhouse gas (GHG) emissions. Senate Bill (SB) 350, known as the Clean Energy and Pollution Reduction Act of 2015, set clean air and objectives, including the reduction of "GHG to 40% below 1990 levels by 2030 and to 80% below 1990 levels by 2050".[35] SB 350 also directed state agencies to identify barriers for customers to adopt zero-emission transportation.[36] The 100 Percent Clean Energy Act of 2018 (SB 100) requires that renewable energy and zero-carbon resources supply 100% of electricity by 2045 to help reduce air pollution.[37]

On September 16, 2022, Governor Newsom signed a package of legislative measures addressing energy and GHG emissions, including the Clean Energy, Jobs, and Affordability Act of 2022 (SB 1020) and the California Climate Crisis Act (Assembly Bill [AB] 1279). SB 1020 provided interim targets for reducing GHG emissions and AB 1279 requires the state to reach net zero GHG emissions by 2045 at the latest.[38]

Some of the specific actions to achieve these goals, and their potential impacts on labor market demand, are further discussed in the Additional Advanced Transportation and Logistics Sector Trends section.

Public Law No.: 109-58	**Energy Policy Act of 2005**	
Federal	Enacted: 2005	Est. Completion: N/A
• Focus on energy production, including climate change technology		
Public Law No.: 110-140	**Energy Independence and Security Act of 2007**	
Federal	Enacted: 2007	Est. Completion: N/A
• Focus on energy production, energy security, and GHG emission reduction		
Senate Bill 350	**Clean Energy and Pollution Reduction Act of 2015**	
State	Enacted: 2015	Est. Completion: 2030 & 2050
• Reduce GHG emissions by 40% and 80% below 1990-levels by 2030 and 2050, respectively		
Senate Bill 1	**Road Repair and Accountability Act of 2017**	
State	Enacted: 2017	Est. Completion: N/A
• Invest billions of dollars into state transit infrastructure		
Senate Bill 100	**100 Percent Clean Energy Act of 2018**	
State	Enacted: 2018	Est. Completion: 2045
• Requires zero-carbon and renewable resources supply all electric retail sales by 2045		
Public Law No.: 117-58	**Infrastructure Investment and Jobs Act or Bipartisan Infrastructure Act**	
Federal	Enacted: 2021	Est. Completion: 2026
• Provides $1.2 trillion dollars in funding for infrastructure across the U.S.		
Senate Bill 1020	**Clean Energy, Jobs, and Affordability Act of 2022**	
State	Enacted: 2022	Est. Completion: 2035 & 2040
• Provides interim objectives to achieve Senate Bill 100 goals		
Assembly Bill 1279	**California Climate Crisis Act**	
State	Enacted: 2022	Est. Completion: 2045
• Reduce GHG emissions by 85% relative to 1990 levels		

Other Federal Laws and Regulations

Alongside federal laws protecting workers' civil rights and workplace safety, sector-specific policies offer added safeguards for Advanced Transportation and Logistics workers and provide significant investments in infrastructure projects nationwide. Below is a sample of related policies:

- **Railway Labor Act:** Legislation aimed at circumventing any interruption to interstate commerce by providing for quick dispute resolution between airline or rail carriers and their employees, all while safeguarding employees' right to bargain collectively and organize.[39]
- **Infrastructure Investment and Jobs Act (IIJA):** Passed into law in 2021, the IIJA provides significant sums of funding to infrastructure projects, including initiatives aimed towards public transit, freight and passenger rails, waterways, and ports.[40]
- **Fixing America's Surface Transportation Act (FAST Act):** Law passed in December 2015 which provided more than $305 billion in funding for surface transportation initiatives from fiscal years 2016 through 2020.[41]

Federal agencies, such as the Surface Transportation Board (STB) and the Federal Motor Carrier Safety Administration (FMCSA), issue regulations and guidance on surface transportation matters nationwide. The STB has authority over economic regulations impacting numerous forms of surface transportation, including freight rail, and rate standards concerning domestic marine freight shipping.[42] Furthermore, the FMCSA establishes testing and licensing standards for commercial motor vehicle standards and contributes to safety initiatives through collaborations with public, private, and safety interest groups and organizations.[43]

Other State Laws and Regulations

At the state-level, various agencies work in conjunction with one another to promote clean energy usage, including spearheading regulations with implications on the Advanced Transportation and Logistics sector. The California Air Resources Board (CARB) holds the authority to set emissions standards on pollution sources, such as consumer products, fuels, and vehicles.[44] It is also the principal agency overseeing the Advanced Clean Trucks (ACT) Regulation, which is a policy that expedites a significant reduction in tailpipe emissions by establishing zero-emission truck sales requirements for manufacturers through 2035 and reporting standards for qualified businesses and fleet owners.[45] More information regarding zero-emissions vehicles is included in the Zero-Emissions Vehicles section of this report.

State laws provide an additional set of standards or requirements specific to this sector and its workers. With respect to logistics infrastructure, Assembly Bill (AB) 98, signed into law in September 2024, establishes new standards pertaining to the design and build of new logistics uses and the expansion of related facilities.[46] Recent policy developments pertaining to self-employment could impact drivers in this sector. For more information, please see the Self-Employment for Drivers section of this report.

Funding Opportunities

Several federal and state financial initiatives are available for further investment in the Advanced Transportation and Logistics sector. While not an exhaustive list, the following provides a sample of available sector-specific funding opportunities:

- **Advanced Hydrogen and Fuel Cell Technologies to Drive National Decarbonization:** This grant will focus on research, development, and demonstration (RD&D) essential for growing hydrogen infrastructure and amplifying the usage of clean hydrogen across industries, especially in applications in which heavy-duty vehicle and transportation are used.[47]
- **Aviation Workforce Development Grants:** Two grants aimed at supporting the recruitment of aircraft pilots, unmanned aircraft systems operators, and aviation maintenance technical workers through education, outreach, and career transition opportunities.[48]
- **Sales Tax Exclusion (STE) Program:** This program provides for the exclusion of sales and use taxes on eligible purchases made for items to be used for qualified activities, such as manufacturing technologies in advanced transportation.[49]
- **Trade Corridor Enhancement Program:** Grant providing funds for the infrastructural improvement of California's section of the National Highway Freight Network, federally recognized Trade Corridors of National and Regional Significance, and other corridors with a significant volume of freight usage.[50]

APPENDIX A: METHODOLOGY

Traditional Labor Market Data Methodology

The COE analyzed traditional labor market demand information, which includes job counts, projections, wages, typical education requirements, for the Advanced Transportation and Logistics sector. Traditional labor market demand data was sourced from Lightcast (Datarun 2023.4), a labor market analytics firm that aggregates data from public statistical agencies including the Bureau of Labor Statistics, Census Bureau, and the California Employment Development Department. Living wage data was sourced from the Insight Center California Family Needs Calculator.[51] The traditional labor market demand data analyzed in this report includes:

- **2022 Jobs:** the number of jobs by industry and occupation in 2022.
- **2027 Jobs:** the projected number of jobs by industry and occupation in 2027. Projections are based on the assumption that past trends will continue into the future, including the assumption that the economy, during the projection period, will be at approximately full employment. Projections do not consider potential recessions or labor shocks, such as natural disasters or pandemics, and are intended to capture structural change in the economy over time.
- **Change:** the projected change in the number of jobs, expressed as an actual number and a percentage.
- **Average Annual Openings (Demand):** the projected number of annual job openings. This figure is the sum of job growth and replacement jobs. Job growth is the result of job creation while replacement jobs are the result of retirements and workers leaving the filled, creating the need to hire a replacement.
- **Hourly Wages:**
    - **Entry-level (25th percentile):** the typical entry-level wages for an occupation; 25% of workers earn less than this amount and 75% earn more.
    - **Median:** the median wages for an occupation; 50% of workers earn less than this amount and 50% earn more.
    - **Experienced (75th percentile):** the typical experienced-level wages for an occupation; 75% of workers earn less than this amount and 25% earn more.
- **Typical Entry-Level Education:** represents the typical education level needed to enter an occupation.
- **Educational Attainment:** the percentage of workers employed in an occupation by their highest level of education attained.

Demographic data for the Orange County population comes from the Census Bureau's American Community Survey (5-Year Estimates, 2018-2022). Demographic data for occupations was sourced via IPUMS USA and student demographic data was sourced from the LaunchBoard Community College Pipeline (2020-21 Academic Year).[52][53]

The COE also analyzed labor market supply data that is calculated using the number of awards conferred in related training programs at community college and non-community college institutions over the past three years of available data. Community college data is sourced from the California Community College Chancellor's Office Data Mart[54] and includes the years 2020-2023; non-community college data is sourced from the Integrated Postsecondary Education Data System and includes the years 2019-2022.[55]

Job Postings Analysis Methodology

In addition to traditional labor market information, the COE analyzed real-time labor market information using online job postings data sourced from Lightcast (Datarun 2024.3). The job postings data in this report covers the last 12 months of available data (October 2023 – September 2024). This data is derived from online job postings that are parsed and classified into industry and occupational groups using natural language processing (NLP) to determine the related company, industry, occupation, and other information for each job posting. Online job postings do not equate to labor market demand or replace traditional labor market data. They should only be considered a supplement to traditional LMI.

APPENDIX B: SECTOR OCCUPATIONS

SOC	Occupation
43-5021	Couriers and Messengers*
43-5071	Shipping, Receiving, and Inventory Clerks*
49-3022	Automotive Glass Installers and Repairers*
49-3093	Tire Repairers and Changers*
51-6093	Upholsterers*
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders*
53-3031	Driver/Sales Workers*
53-3033	Light Truck Drivers*#
53-3051	Bus Drivers, School*
53-3053	Shuttle Drivers and Chauffeurs*
53-3054	Taxi Drivers*#
53-3099	Motor Vehicle Operators, All Other*
53-5011	Sailors and Marine Oilers*
53-6011	Bridge and Lock Tenders*
53-6031	Automotive and Watercraft Service Attendants*
53-6032	Aircraft Service Attendants*
53-6061	Passenger Attendants*
53-6099	Transportation Workers, All Other*
53-7051	Industrial Truck and Tractor Operators*
53-7062	Laborers and Freight, Stock, and Material Movers, Hand*
53-7065	Stockers and Order Fillers*
53-7121	Tank Car, Truck, and Ship Loaders*
53-7199	Material Moving Workers, All Other*
11-3071	Transportation, Storage, and Distribution Managers
13-1081	Logisticians#
17-3021	Aerospace Engineering and Operations Technologists and Technicians
43-5011	Cargo and Freight Agents
43-5061	Production, Planning, and Expediting Clerks
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers
49-2091	Avionics Technicians
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles
49-3011	Aircraft Mechanics and Service Technicians
49-3021	Automotive Body and Related Repairers
49-3023	Automotive Service Technicians and Mechanics#
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists
49-3042	Mobile Heavy Equipment Mechanics, Except Engines
49-3043	Rail Car Repairers
49-3051	Motorboat Mechanics and Service Technicians
49-3052	Motorcycle Mechanics
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics
49-3092	Recreational Vehicle Service Technicians
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers
53-1041	Aircraft Cargo Handling Supervisors
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors
53-2012	Commercial Pilots
53-2021	Air Traffic Controllers
53-2022	Airfield Operations Specialists
53-3032	Heavy and Tractor-Trailer Truck Drivers
53-3052	Bus Drivers, Transit and Intercity#
53-4011	Locomotive Engineers
53-4013	Rail Yard Engineers, Dinkey Operators, and Hostlers
53-4022	Railroad Brake, Signal, and Switch Operators and Locomotive Firers
53-4031	Railroad Conductors and Yardmasters
53-4041	Subway and Streetcar Operators
53-4099	Rail Transportation Workers, All Other
53-5021	Captains, Mates, and Pilots of Water Vessels
53-5022	Motorboat Operators
53-5031	Ship Engineers
53-6051	Transportation Inspectors
53-7021	Crane and Tower Operators
53-2011	Airline Pilots, Copilots, and Flight Engineers^

Below Middle-Skill* Occupations

Middle-Skill Occupations

Above Middle-Skill^ Occupations

APPENDIX C: TOP CODES

TOP Code	Program Name
0116.00	Agricultural Power Equipment Technology*
0501.00	Business and Commerce, General*
0505.00	Business Administration*
0506.00	Business Management*
0506.30	Management Development and Supervision*
0510.00	Logistics and Materials Transportation
0514.00	Office Technology/Office Computer Applications*
0924.00	Engineering Technology, General (requires Trigonometry)*
0934.40	Electrical Systems and Power Transmission*
0946.10	Energy Systems Technology*
0947.00	Diesel Technology
0947.20	Heavy Equipment Maintenance
0947.30	Heavy Equipment Operation
0947.40	Railroad and Light Rail Operations
0947.50	Truck and Bus Driving
0948.00	Automotive Technology
0948.30	Motorcycle, Outboard and Small Engine Repair
0948.40	Alternative Fuels and Advanced Transportation Technology
0948.50	Recreational Vehicle Service
0949.00	Automotive Collision Repair
0949.10	Upholstery Repair - Automotive
0950.00	Aeronautical and Aviation Technology*
0950.10	Aviation Airframe Mechanics
0950.20	Aviation Powerplant Mechanics
0950.40	Aircraft Electronics (Avionics)*
0950.50	Aircraft Fabrication*
0952.20	Electrical*
0956.00	Manufacturing and Industrial Technology*
0959.00	Marine Technology
2102.00	Public Administration*
3020.00	Aviation and Airport Management and Services
3020.10	Aviation and Airport Management
3020.20	Piloting
3020.30	Air Traffic Control
3020.40	Flight Attendant*

Note: Sixteen (16) programs above are denoted with an asterisk (*). The supply for these 16 TOP codes was added to the Advanced Transportation and Logistics Sector Profile because they crosswalk to Advanced Transportation and Logistics Sector occupations, even though the Chancellor's Office assigned the TOP code to a different sector. In the last Community College Chancellor's Office TOP code inventory, Engineering Technology, General (requires Trigonometry) (0924.00), Aeronautical and Aviation Technology (0950.00), Aircraft Electronics (Avionics) (0950.40), Aircraft Fabrication (0950.50), and Manufacturing and Industrial Technology (0956.00) are assigned to Advanced Manufacturing; Agricultural Power Equipment Technology (0116.00) is assigned to Agriculture, Water, and Environmental Technologies; Business and Commerce, General (0501.00), Business Administration (0505.00), Business Management (0506.00), and Management Development and Supervision (0506.30) are assigned to Business and Entrepreneurship; Electrical Systems and Power Transmission (0934.40), Energy Systems Technology (0946.10), and Electrical (0952.20) are assigned to Energy, Construction, and Utilities; Office Technology/Office Computer Applications (0514.00) is assigned to Information and Communication Technologies/Digital Media; Flight Attendant (3020.40) is assigned to Retail, Hospitality, and Tourism; and Public Administration (2102.00) is assigned to Other/Unassigned.

APPENDIX D: END NOTES

[1] "OC Sector Profile Supplemental Appendices: Advanced Transportation and Logistics," Orange County Center of Excellence for Labor Market Research, last modified November 13, 2024, https://coeccc.net/orange-county/2024/11/oc-sector-profile-supplemental-appendices-advanced-transportation-and-logistics/.

[2] "Orange County Labor Market Overview," Orange County Center of Excellence for Labor Market Research, last modified November 16, 2023, https://coeccc.net/orange-county/2023/11/orange-county-labor-market-overview/.

[3] "100 Best Jobs of 2024," U.S. News & World Report, accessed May 7, 2024, https://money.usnews.com/careers/best-jobs/rankings/the-100-best-jobs.

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All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. This study examines the most recent data available at the time of the analysis; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and the report findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

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