



Labor Market Analysis: 0303.00 – Environmental Technology
01.0301 – Agricultural Production Operations, General
Climate and Environmental Technology for Sustainable Food Systems
 Certificate requiring 8 to <16 semester units
 Los Angeles Center of Excellence, March 2026

| Program Endorsement: | Endorsed: All Criteria Met <input type="checkbox"/> | Endorsed: Some Criteria Met <input checked="" type="checkbox"/> | Not Endorsed <input type="checkbox"/> |
|---|---|---|--|
| Program Endorsement Criteria | | | |
| Supply Gap: | Yes <input checked="" type="checkbox"/> | | No <input type="checkbox"/> |
| Living Wage: (Entry-Level, 25 th) | Yes <input type="checkbox"/> | | No <input checked="" type="checkbox"/> |
| Education: | Yes <input checked="" type="checkbox"/> | | No <input type="checkbox"/> |
| Emerging Occupation(s) | | | |
| | Yes <input type="checkbox"/> | | No <input checked="" type="checkbox"/> |

SUMMARY

This report analyzes whether local labor market demand is being met by community college programs aligned with the identified middle-skill occupations¹ or whether a shortage of workers exists. Labor market demand is measured by annual job openings while education supply is measured by the number of awards (degrees and certificates) conferred on average each year.

Based on the available data, there appears to be a supply gap for the three identified middle-skill occupations in the region. While entry-level wages are lower than the self-sufficiency standard wage in both Los Angeles and Orange counties, more than one-third of current workers in the field have completed an associate degree or less educational attainment.

Recommendation: Due to two of three program endorsement criteria being met, the Los Angeles Center of Excellence for Labor Market Research (LA COE) endorses this proposed program.

Key Findings

Supply Gap

- 412 annual job openings are projected in the region through 2029. This number is greater than the three-year average of 112 awards conferred by educational institutions in the region.

¹ Middle-skill occupations typically require some postsecondary education, but less than a bachelor’s degree. The COE classifies middle-skill jobs as the following:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor’s degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

Living Wage

- All three occupations have entry-level wages **below** Los Angeles County’s self-sufficiency standard hourly wage (\$24.03/hour).²

Educational Attainment

- 70% of the annual job openings typically require a high school diploma or equivalent for middle-skill occupations related to environmental technology in the LA/OC region.
- 22%-42% of workers in the field have completed some college or an associate degree, according to national educational attainment data.
 - 73%-88% of workers in the field have completed an associate degree or less educational attainment.

Community college supply

- 9 community colleges issued awards related to environmental technology in the greater LA/OC region.
- 89 awards (degrees and certificates) were conferred on average each year between 2023 and 2025.

Other postsecondary supply

- 1 educational institution in the LA/OC region has conferred awards in a program related to environmental technology over the past three years.
- 23 awards were conferred on average each year by other postsecondary institutions throughout the greater LA/OC region between 2022 and 2024.

TARGET OCCUPATIONS

LA COE prepared this report to provide regional labor market and postsecondary supply data related to three middle-skill occupations. [For full occupation descriptions, please see Appendix.](#)

- **Farmers, Ranchers, and Other Agricultural Managers (11-9013)**³
- **Agricultural Technicians (19-4012)**⁴
- **First-Line Supervisors of Farming, Fishing, and Forestry Workers (45-1011)**⁵

OCCUPATIONAL DEMAND

Exhibit 1 shows the five-year occupational demand projections for these middle-skill environmental technology occupations. In the greater Los Angeles/Orange County region, the number of jobs related to these occupations is projected to decrease by 4% through 2029. However, there will be more than 400 job openings per year through 2029 due to retirements and workers leaving the field. The majority of jobs in 2024 for these middle-skill environmental technology occupations (74%) were located in Los Angeles County.

² Center for Women’s Welfare, University of Washington. (2024). *The self-sufficiency standard for California 2024.* <http://selfsufficiencystandard.org/California>.

³ [Farmers, Ranchers, and Other Agricultural Managers \(bls.gov\)](#)

⁴ [Agricultural and Food Science Technicians \(bls.gov\)](#)

⁵ [Farming, Fishing, and Forestry Occupations \(bls.gov\)](#)

Exhibit 1: Current employment and occupational demand, Los Angeles and Orange counties⁶

| Geography | 2024 Jobs | 2029 Jobs | 2024-2029 Change | 2024-2029 % Change | Annual Openings |
|--------------|--------------|--------------|------------------|--------------------|-----------------|
| Los Angeles | 2,511 | 2,485 | (26) | (1%) | 309 |
| Orange | 874 | 763 | (111) | (13%) | 103 |
| Total | 3,385 | 3,248 | (137) | (4%) | 412 |

Detailed Occupation Data

Exhibit 2 displays the current employment and projected occupational demand for each of the target occupations in Los Angeles County. The average percentage of workers aged 55+ across all occupations in the Los Angeles/Orange County region is 26%; occupations with a larger share of workers aged 55 and older typically have greater replacement needs to offset the amount of impending retirements. On average, 81% of workers across all occupations in California are employed full-time. Occupations with a lower-than-average percentage of full-time workers may have less employment security but may see increased activity in the gig economy.

Exhibit 2: Detailed employment and occupational demand, Los Angeles County⁷

| Occupation | 2024 Jobs | 2029 Jobs | 5-Yr % Change | Annual Openings | % Aged 55 and older | % Full Time Workers |
|--|--------------|--------------|---------------|-----------------|---------------------|---------------------|
| Farmers, Ranchers, and Other Agricultural Managers | 1,245 | 1,222 | (2%) | 131 | 42% | 63% |
| Agricultural Technicians | 612 | 616 | 1% | 89 | 23% | 100% |
| First-Line Supervisors of Farming, Fishing, and Forestry Workers | 654 | 648 | (1%) | 89 | 30% | 86% |
| Total | 2,511 | 2,485 | (1%) | 309 | - | - |

WAGES

The labor market endorsement in this report considers the entry-level hourly wages for these middle-skill environmental technology occupations in Los Angeles County as they relate to the county's self-sufficiency standard wage. Orange County wages are included below in order to provide a complete analysis of the greater Los Angeles/Orange County region.

Los Angeles County

All three occupations have entry-level wages below the self-sufficiency standard wage for one adult (\$24.03 in Los Angeles County). Typical entry-level hourly wages are in a range between

⁶ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

⁷ Ibid.

\$16.00 and \$20.38. (Exhibit 3). Experienced workers can expect to earn wages between \$32.01 and \$32.75, which are higher than the self-sufficiency standard.

Exhibit 3: Earnings for occupations in Los Angeles County

| Occupation | Entry-Level Hourly Earnings (25 th Percentile) | Median Hourly Earnings | Experienced Hourly Earnings (75 th Percentile) | Median Annual Earnings* |
|--|---|------------------------|---|-------------------------|
| Farmers, Ranchers, and Other Agricultural Managers | \$16.00 | \$18.81 | \$32.07 | \$39,100 |
| Agricultural Technicians | \$20.38 | \$24.42 | \$32.75 | \$50,800 |
| First-Line Supervisors of Farming, Fishing, and Forestry Workers | \$18.39 | \$24.45 | \$32.01 | \$50,900 |

*Rounded to the nearest \$100

Orange County

All three occupations have entry-level wages below the self-sufficiency standard wage for one adult (\$27.13 in Orange County). Typical entry-level hourly wages are in a range between \$16.00 and \$19.10 (Exhibit 4). Experienced workers can expect to earn wages between \$30.76 and \$31.74, which are higher than the self-sufficiency standard.

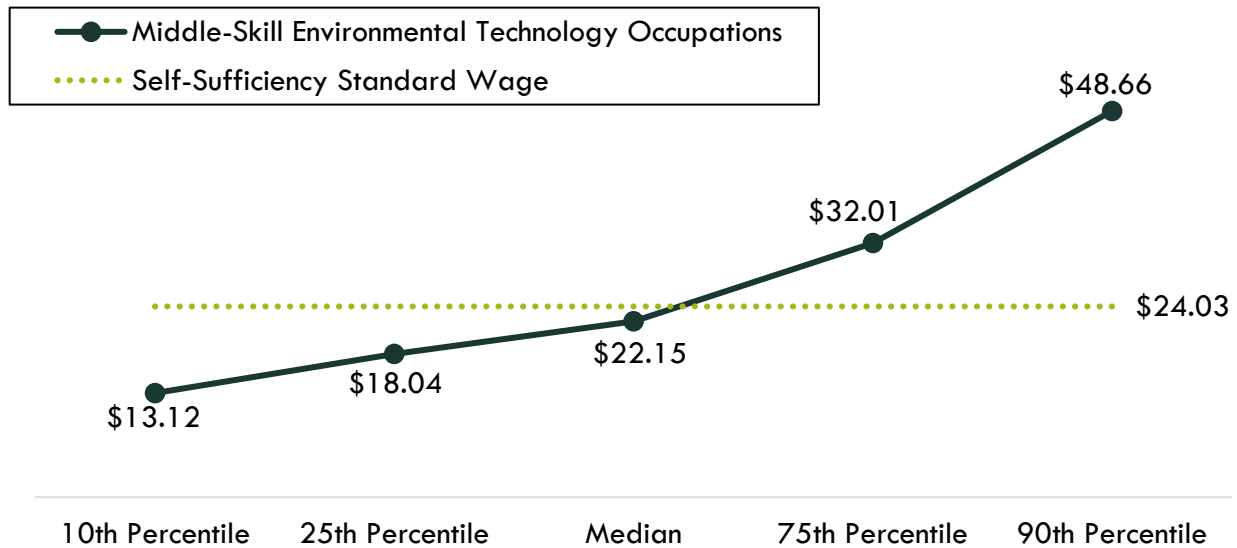
Exhibit 4: Earnings for occupations in Orange County

| Occupation | Entry-Level Hourly Earnings (25 th Percentile) | Median Hourly Earnings | Experienced Hourly Earnings (75 th Percentile) | Median Annual Earnings* |
|--|---|------------------------|---|-------------------------|
| Farmers, Ranchers, and Other Agricultural Managers | \$16.00 | \$18.13 | \$31.74 | \$37,700 |
| Agricultural Technicians | \$19.10 | \$22.91 | \$30.76 | \$47,600 |
| First-Line Supervisors of Farming, Fishing, and Forestry Workers | \$17.80 | \$23.68 | \$30.97 | \$49,300 |

*Rounded to the nearest \$100

Across the greater Los Angeles and Orange County region, the average entry-level hourly earnings for the occupations in this report are \$18.04; this is below the living wage for one single adult in Los Angeles County (\$24.03). Exhibit 5 shows the average hourly wage for the occupations in this report, for entry-level to experienced workers.

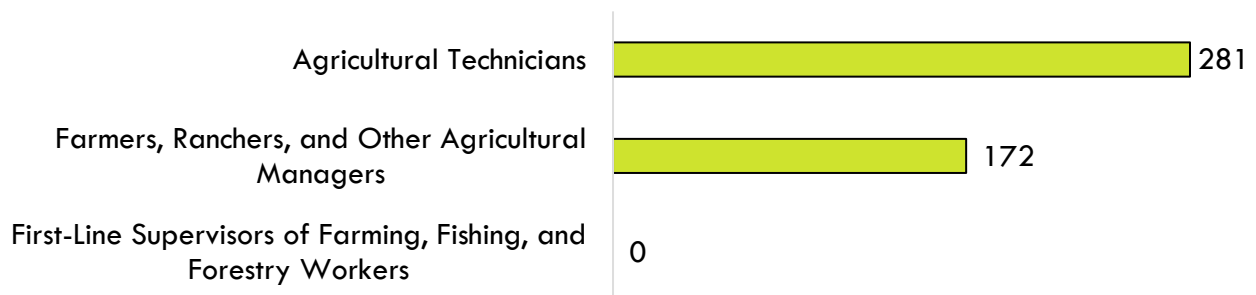
Exhibit 5: Average hourly earnings for target occupations, Los Angeles and Orange counties



JOB POSTINGS

There were 453 online job postings related to middle-skill environmental technology occupations listed in the past 12 months in Los Angeles and Orange counties. Exhibit 6 displays the number of job postings by occupation. The majority of job postings (62%) were for *agricultural technicians*, followed by *farmers, ranchers, and other agricultural managers* (38%). There were no job postings for *first-line supervisors of farming, fishing, and forestry workers*.

Exhibit 6: Job postings by occupation (last 12 months), Los Angeles and Orange counties



Job postings were analyzed for the most common job titles, skills, and employers associated with the target occupations in this report (Exhibit 7).

Exhibit 7: Most commonly requested job titles, skills and employers in job postings, Los Angeles and Orange counties

| Top Job Titles | Top Skills | Top Employers |
|--|---|---|
| <ul style="list-style-type: none"> • Agricultural technicians • Food science technicians • Continuous improvement technicians • Quality control technicians • Farmers market managers • Horticulture technicians | <ul style="list-style-type: none"> • Food safety and sanitation • Food manufacturing • Food services • Good manufacturing practices • Lifting ability • Agriculture • Packaging and labeling | <ul style="list-style-type: none"> • State of California • Kimco Staffing Services* • Vision Staffing Solutions* • Activ8 Recruitment & Solutions* • California Department of Food & Agriculture • Jessie Lord Bakery |

*Staffing company

In the greater Los Angeles/Orange County region, 37% of the target job postings listed a minimum educational requirement. Exhibit 8 details the number and percentage of job postings by educational level.

Exhibit 8: Education levels requested in job postings for target occupations, Los Angeles and Orange counties

| Education Level | Job Postings | % of Job Postings |
|--|--------------|-------------------|
| Bachelor's degree | 51 | 31% |
| Associate degree | 10 | 6% |
| High school diploma or vocational training | 106 | 63% |

EDUCATIONAL ATTAINMENT

In the greater Los Angeles/Orange County region, the majority of annual job openings (70%) typically require a high school diploma or equivalent (Exhibit 9). While the national-level data indicates between 22% and 42% of workers in the field have completed some college or an associate degree as their highest level of educational attainment, 73%-88% completed an associate degree or less education. The Bureau of Labor Statistics (BLS) lists the following typical entry-level education levels for the occupations in this report:

Exhibit 9: Entry-level education preferred by employers nationally, Bureau of Labor Statistics

| Occupation | Education Level |
|--|-----------------------------------|
| Agricultural Technicians | Associate degree |
| Farmers, Ranchers, and Other Agricultural Managers | High school diploma or equivalent |
| First-Line Supervisors of Farming, Fishing, and Forestry Workers | High school diploma or equivalent |

EDUCATIONAL SUPPLY

Community College Supply

Exhibit 10 shows the annual and three-year average number of awards conferred by community colleges in programs that have historically trained for the occupations of interest. The colleges with the most completions in the region are Santa Monica, Mt. San Antonio, and Rio Hondo.

Exhibit 10: Regional community college awards (certificates and degrees), 2023-2025

| TOP Code | Program | College | 2022-23 Awards | 2023-24 Awards | 2024-25 Awards | 3-Year Average |
|--------------------------------|--|--------------------|----------------|----------------|----------------|----------------|
| 0101.00 | Agriculture Technology and Sciences, General | LA Pierce | - | 1 | 1 | 1 |
| | | Mt San Antonio | - | 1 | 1 | 1 |
| | | LA Subtotal | - | 2 | 2 | 1 |
| Supply Subtotal/Average | | | - | 2 | 2 | 1 |
| 0103.00 | Plant Science | LA Pierce | 2 | 1 | 2 | 2 |
| | | Mt San Antonio | 12 | 17 | 12 | 14 |
| | | Pasadena | 2 | 1 | 3 | 2 |
| | | LA Subtotal | 16 | 19 | 17 | 17 |
| | | Saddleback | - | 3 | - | 1 |
| | | OC Subtotal | - | 3 | - | 1 |
| Supply Subtotal/Average | | | 16 | 22 | 17 | 18 |
| 0303.00 | Environmental Technology | Mt San Antonio | - | 1 | 1 | 1 |
| | | Rio Hondo | 11 | 11 | 12 | 11 |
| | | Santa Monica | 30 | 42 | 89 | 54 |
| | | LA Subtotal | 41 | 54 | 102 | 66 |
| | | Irvine | 1 | 2 | 4 | 2 |
| | | Orange Coast | - | - | 1 | 0 |
| | | Saddleback | - | - | 3 | 1 |
| | | Santiago Canyon | - | 1 | - | 0 |
| OC Subtotal | 1 | 3 | 8 | 4 | | |
| Supply Subtotal/Average | | | 42 | 57 | 110 | 70 |
| Supply Total/Average | | | 58 | 81 | 129 | 89 |

Exhibit 11 displays the community college awards broken down by award type. In this case, the majority of awards issued by community colleges are noncredit awards (45%).

Exhibit 11: Community college awards by award type, 2023-2025

| Award Type | # of Awards | % of Awards |
|----------------------------------|-------------|-------------|
| A.A./A.A.-T./A.S./A.S.-T degrees | 30 | 34% |
| Certificates | 19 | 21% |
| Noncredit awards | 40 | 45% |
| Total | 89 | 100% |

Other Postsecondary Supply

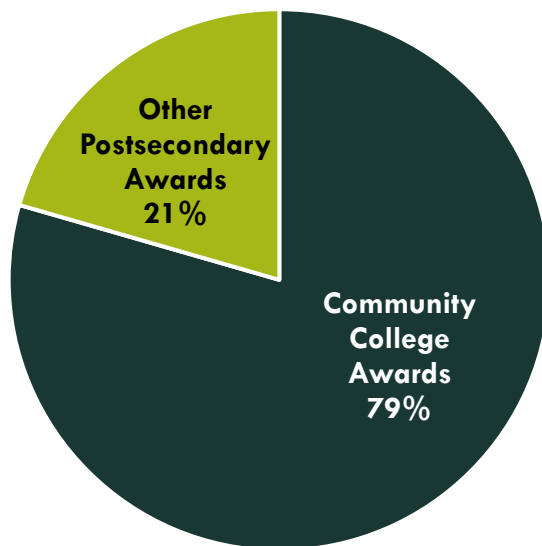
For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that provide training programs for environmental technology. Exhibit 12 shows the number of awards conferred by this institution in relevant programs. Due to different data collection periods, the most recent data is from 2022 to 2024. Between 2022 and 2024, other postsecondary college institutions in the region conferred an average of 23 bachelor's awards.

Exhibit 12: Other regional postsecondary awards, 2022-2024

| CIP Code | Program | Postsecondary Institution | 2021-22 Awards | 2022-23 Awards | 2023-24 Awards | 3-Year Average |
|-----------------------------|---|---------------------------|----------------|----------------|----------------|----------------|
| 01.0102 | Agribusiness/ Agricultural Business Operations | CSPU-Pomona | 22 | 31 | 16 | 23 |
| Supply Total/Average | | | 22 | 31 | 16 | 23 |

Exhibit 13 shows the proportion of community college awards conferred in the greater Los Angeles/Orange County region compared to the number of other postsecondary awards for the programs in this report. The majority of awards conferred in these programs are awarded by community colleges in the greater Los Angeles/Orange County region.

Exhibit 13: Percentage of community college awards compared to other postsecondary institution awards in the Los Angeles/Orange County region



APPENDIX: OCCUPATION DESCRIPTIONS

LA COE prepared this report to provide regional labor market supply and demand data related to these target occupations:

- **Farmers, Ranchers, and Other Agricultural Managers (11-9013)** Plan, direct, or coordinate the management or operation of farms, ranches, greenhouses, aquacultural operations, nurseries, timber tracts, or other agricultural establishments. May hire, train, and supervise farm workers or contract for services to carry out the day-to-day activities of the managed operation. May engage in or supervise planting, cultivating, harvesting, and financial and marketing activities.⁸
- **Agricultural Technicians (19-4012)** Work with agricultural scientists in plant, fiber, and animal research, or assist with animal breeding and nutrition. Set up or maintain laboratory equipment and collect samples from crops or animals. Prepare specimens or record data to assist scientists in biology or related life science experiments. Conduct tests and experiments to improve yield and quality of crops or to increase the resistance of plants and animals to disease or insects.⁹
- **First-Line Supervisors of Farming, Fishing, and Forestry Workers (45-1011)** Directly supervise and coordinate the activities of agricultural, forestry, aquacultural, and related workers.¹⁰

⁸ [Farmers, Ranchers, and Other Agricultural Managers \(bls.gov\)](https://www.bls.gov/occupations/11-9013)

⁹ [Agricultural and Food Science Technicians \(bls.gov\)](https://www.bls.gov/occupations/19-4012)

¹⁰ [Farming, Fishing, and Forestry Occupations \(bls.gov\)](https://www.bls.gov/occupations/45-1011)

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**DATA SOURCES**

- O*NET Online
- Lightcast (formerly Emsi)
- Bureau of Labor Statistics (BLS)
- California Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- Self-Sufficiency Standard at the Center for Women's Welfare, University of Washington
- Chancellor's Office Curriculum Inventory (COCI 2.0)

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