

Labor Market Analysis: 0109.00 – Horticulture
Horticulture (AS degree & Certificate)
Los Angeles Center of Excellence, September 2022

Summary

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, 25th)	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"/>	

The Los Angeles Center of Excellence for Labor Market Research (LA COE) prepared this report to provide regional labor market supply and demand data related to four 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.¹
- **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.²
- **First-Line Supervisors of Farming, Fishing, and Forestry Workers (45-1011):** Directly supervise and coordinate the activities of agricultural, forestry, aquacultural, and related workers.³
- **Agricultural Inspectors (45-2011):** Inspect agricultural commodities, processing equipment, and facilities, and fish and logging operations, to ensure compliance with regulations and laws governing health, quality, and safety.⁴

¹ [Farmers, Ranchers, and Other Agricultural Managers \(bls.gov\)](https://www.bls.gov/occupations/11-9013)

² [Agricultural Technicians \(bls.gov\)](https://www.bls.gov/occupations/19-4012)

³ [First-Line Supervisors of Farming, Fishing, and Forestry Workers \(bls.gov\)](https://www.bls.gov/occupations/45-1011)

⁴ [Agricultural Inspectors \(bls.gov\)](https://www.bls.gov/occupations/45-2011)

Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.⁵ Although *agricultural inspectors* typically require a bachelor's degree, it is considered a middle-skill occupation because approximately one-third of workers in the field have completed some college or an associate degree. This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with the relevant occupations.

Based on the available data, there appears to be a supply gap in the region for the occupations of interest. Although the occupations of interest have entry-level wages below the self-sufficiency standard wage in both Los Angeles and Orange counties, three of the four occupations of interest have at least 30% of workers in the field who have completed some college or an associate degree. **Due to some of the criteria being met, the LA COE endorses this proposed program.** Detailed reasons include:

Demand:

- **Supply Gap Criteria** – Over the next five years, **383 jobs are projected to be available annually** in the region due to retirements and workers leaving the field, **which is more than the three-year average of 164 awards conferred** by educational institutions in the region.
- **Living Wage Criteria** – In Los Angeles County, the **majority of annual job openings (74%)** for the occupations of interest have **entry-level wages below the self-sufficiency standard wage** (\$18.10/hour).⁶
- **Educational Criteria** – In the greater LA/OC region, **67% of the annual job openings** for the occupations of interest **typically require a high school diploma or equivalent**.
 - National-level educational attainment data indicates that between 21% and 36% of workers in the field have completed some college or an associate degree. Three of the four occupations have at least 31% of workers in the field who have completed some college or an associate degree.

Supply:

- Between 2018 and 2021, **7 community colleges** in the greater LA/OC region conferred awards in programs that have historically trained for the occupations of interest, conferring an average of **128 awards**.
- Between 2017 and 2020, one non-community college institution in the LA/OC region conferred an average of **36 awards in relevant program(s)**.

⁵ 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.

⁶ Self-Sufficiency Standard wage data was pulled from The Self-Sufficiency Standard Tool for California. For more information, visit: <http://selfsufficiencystandard.org/california>.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for the four occupations of interest. In the greater Los Angeles/Orange County region, the number of jobs related to these occupations is projected to decrease by 6% through 2026. However, there will be nearly 400 job openings per year through 2026 due to retirements and workers leaving the field.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties⁷

Geography	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change	Annual Openings
Los Angeles	2,471	2,406	(65)	(3%)	288
Orange	856	722	(134)	(16%)	94
Total	3,328	3,127	(201)	(6%)	383

Wages

The labor market endorsement in this report considers the hourly wages for the occupations of interest 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 LA/OC region. Detailed wage information, by county, is included in Appendix A.

Los Angeles County – The majority of annual openings (74%) for the occupations of interest have entry-level wages **below** the self-sufficiency standard wage for one adult (\$18.10 in Los Angeles County). Typical entry-level hourly wages are in a range between \$14.00 and \$18.83. The only occupation in this report with an entry-level wage above the self-sufficiency standard wage is *agricultural inspectors* (\$18.83). Experienced workers can expect to earn wages between \$27.36 and \$38.08, which are above the self-sufficiency standard wage estimate.

Exhibit 2: Hourly Earnings for Occupations in Los Angeles County

Occupation (SOC)	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Farmers, Ranchers, and Other Agricultural Managers (11-9013)	\$14.00	\$16.96	\$30.30
Agricultural Technicians (19-4012)	\$16.31	\$19.63	\$27.36
First-Line Supervisors of Farming, Fishing, and Forestry Workers (45-1011)	\$15.65	\$22.59	\$30.68
Agricultural Inspectors (45-2011)	\$18.83	\$28.14	\$38.08

Orange County – All four occupations have entry-level wages **below** the self-sufficiency standard wage for one adult (\$20.63 in Orange County). Typical entry-level hourly wages are in a range between \$14.00 and \$17.57. Experienced workers can expect to earn wages between \$25.83 and \$35.54, which are above the self-sufficiency standard wage estimate.

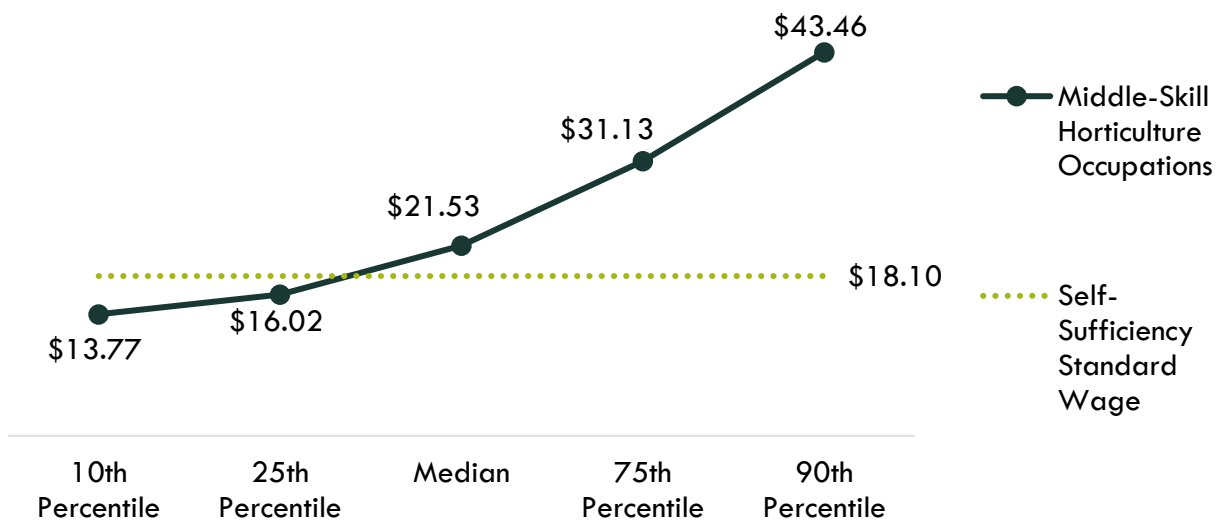
⁷ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Exhibit 3: Hourly Earnings for Occupations in Orange County

Occupation (SOC)	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Farmers, Ranchers, and Other Agricultural Managers (11-9013)	\$14.00	\$16.30	\$28.75
Agricultural Technicians (19-4012)	\$15.57	\$18.66	\$25.83
First-Line Supervisors of Farming, Fishing, and Forestry Workers (45-1011)	\$14.89	\$21.49	\$29.15
Agricultural Inspectors (45-2011)	\$17.57	\$26.27	\$35.54

On average, the entry-level earnings for the occupations in this report are \$16.02; this is below the self-sufficiency standard wage estimate for one single adult in Los Angeles County (\$18.10). Exhibit 4 shows the average wages for the occupations in this report, from entry-level to experienced workers.

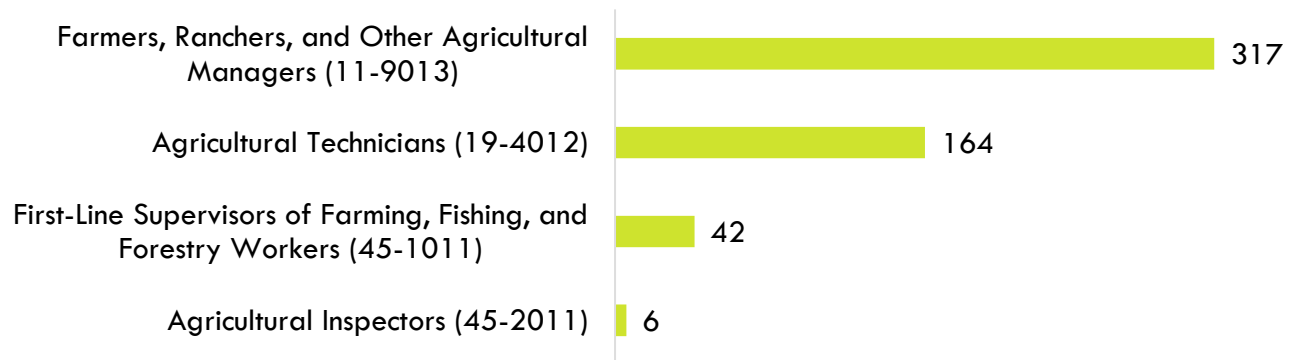
Exhibit 4: Average Hourly Earnings for Occupations in LA/OC



Job Postings

Over the past 12 months, there have been 529 online job postings in the region related to the four occupations of interest. Exhibit 5 displays the number of job postings by occupation. The majority of job postings (60%) were for *farmers, ranchers, and other agricultural managers*. The highest number of job postings were for *cannabis cultivators, agriculture technicians, harvest technicians, farmer marker vendors, and cultivation technicians*. The top skills were farm management, fertilizers, irrigation systems, packaging, lifting ability, customer service, and machinery. The top employers, by number of job postings, in the region were Malibu Gold, Hawx Services (pest control), and California Public Utilities Commission.

Exhibit 5: Job postings by occupation (last 12 months)



Educational Attainment

The Bureau of Labor Statistics (BLS) lists the following typical entry-level education levels for the occupations in this report:

- **High school diploma or equivalent:** *Farmers, ranchers, and other agricultural managers* (11-9013); and *First-line supervisors of farming, fishing, and forestry workers* (45-1011)
- **Associate degree:** *Agricultural technicians* (19-4012)
- **Bachelor's degree:** *Agricultural inspectors* (45-2011)

In the greater LA/OC region, the majority of annual job openings (67%) typically require a high school diploma or equivalent. National-level educational attainment data indicates that between 21% and 36% of workers in the field have completed some college or an associate degree. Three of the four occupations have at least 31% of workers in the field who have completed some college or an associate degree.

Educational Supply

Community College Supply—Exhibit 6 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 Saddleback, Mt. San Antonio, and Orange Coast.

Exhibit 6: Regional community college awards (certificates and degrees), 2018-2021

TOP	Program	College	2018-19 Awards	2019-20 Awards	2020-21 Awards	3-Year Average
0101.00	Agriculture Technology and Sciences, General	LA Pierce	1	2	-	1
		Mt San Antonio	3	3	-	2
		LA Subtotal	4	5	-	3
Supply Subtotal/Average			4	5	-	3
0109.00	Horticulture	El Camino	1	10	6	6
		LA Pierce	5	6	3	5
		Long Beach	4	8	7	6
		Mt San Antonio	7	3	5	5
		LA Subtotal	17	27	21	22
		Fullerton	-	2	1	1
		Orange Coast	15	23	10	16
		Saddleback	13	17	47	26
		OC Subtotal	28	42	58	43
Supply Subtotal/Average			45	69	79	64
0109.10	Landscape Design and Maintenance	LA Pierce	-	-	1	0
		Mt San Antonio	33	11	26	23
		LA Subtotal	33	11	27	24
		Fullerton	3	5	2	3
		Orange Coast	2	3	1	2
		Saddleback	11	37	23	24
		OC Subtotal	16	45	26	29
Supply Subtotal/Average			49	56	53	53
0109.30	Nursery Technology	Mt San Antonio	8	1	5	5
		LA Subtotal	8	1	5	5
		Fullerton	4	4	1	3
		OC Subtotal	4	4	1	3
Supply Subtotal/Average			12	5	6	8
Supply Total/Average			110	135	138	128

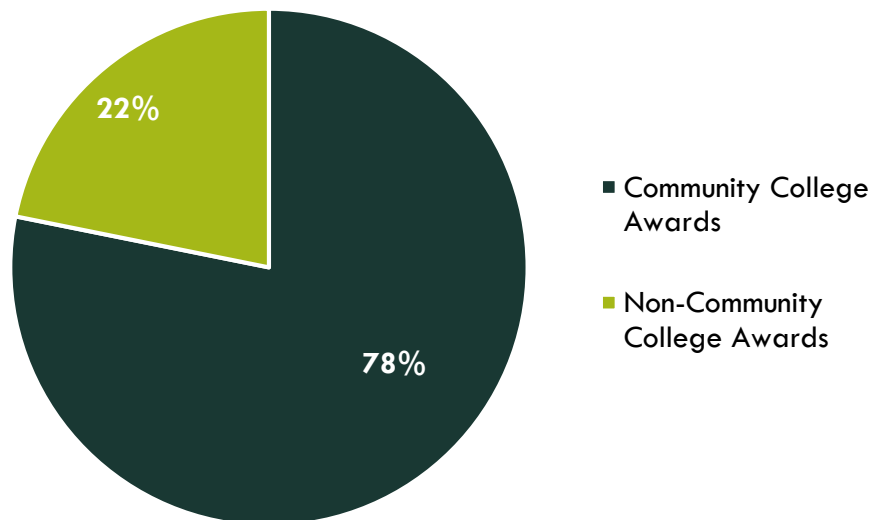
Non-Community College Supply – For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that may provide training programs for the occupations of interest. Exhibit 7 shows the annual and three-year average number of awards conferred in relevant programs. Due to different data collection periods, the most recent three-year period of available data is from 2017 to 2020. Between 2017 and 2020, one non-community college institution conferred an average of 36 awards.

Exhibit 7: Regional non-community college awards, 2017-2020

CIP	Program	Institution	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
01.0102	Agribusiness/ Agricultural Business Operations	California State Polytechnic University- Pomona	48	32	27	36
Supply Total/Average			48	32	27	36

Exhibit 8 shows the relationship between the number of community college awards conferred in LA/OC versus the number of non-community college awards for the programs in this report. More than three-quarters of awards conferred in relevant programs in the LA/OC region were awarded by community colleges.

Exhibit 8: Community College Awards Compared to Non-Community College Awards in LA/OC Region, 3-Year Average



Appendix A: Occupational demand and wage data by county

Exhibit 9. Los Angeles County

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Farmers, Ranchers, and Other Agricultural Managers (11-9013)	1,418	1,356	(62)	(4%)	133	\$14.00	\$16.96	\$30.30
Agricultural Technicians (19-4012)	180	180	0	0%	23	\$16.31	\$19.63	\$27.36
First-Line Supervisors of Farming, Fishing, and Forestry Workers (45-1011)	416	411	(5)	(1%)	58	\$15.65	\$22.59	\$30.68
Agricultural Inspectors (45-2011)	458	460	2	0%	74	\$18.83	\$28.14	\$38.08
Total	2,471	2,406	(65)	(3%)	288	-	-	-

Exhibit 10. Orange County

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Farmers, Ranchers, and Other Agricultural Managers (11-9013)	500	371	(129)	(26%)	42	\$14.00	\$16.30	\$28.75
Agricultural Technicians (19-4012)	73	74	1	1%	9	\$15.57	\$18.66	\$25.83
First-Line Supervisors of Farming, Fishing, and Forestry Workers (45-1011)	158	143	(15)	(9%)	21	\$14.89	\$21.49	\$29.15
Agricultural Inspectors (45-2011)	126	134	8	6%	22	\$17.57	\$26.27	\$35.54
Total	856	722	(134)	(16%)	94	-	-	-

Exhibit 11. Los Angeles and Orange Counties

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Typical Entry-Level Education
Farmers, Ranchers, and Other Agricultural Managers (11-9013)	1,917	1,726	(191)	(10%)	175	High school diploma or equivalent
Agricultural Technicians (19-4012)	253	253	0	0%	32	Associate degree
First-Line Supervisors of Farming, Fishing, and Forestry Workers (45-1011)	574	554	(20)	(3%)	80	High school diploma or equivalent
Agricultural Inspectors (45-2011)	584	594	10	2%	96	Bachelor's degree
Total	3,328	3,127	(201)	(6%)	383	-

Appendix B: Sources

- O*NET Online
- Labor Insight (Burning Glass Technologies)
- Lightcast (formerly Emsi)
- Economic Modeling Specialists, International (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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