

Labor Market Analysis: 0303.00 – Environmental Technology Sustainable Materials Management

Associate of Science (A.S.) degree
 Certificate requiring 16 to fewer than 30 semester units
 Certificate requiring 8 to fewer than 16 semester units
 Certificate requiring 6 to <18 semester units

Los Angeles Center of Excellence, March 2024

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

SUMMARY

This report analyzes whether local labor market demand is being met by community college programs aligned with the identified middle-skill occupations 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.¹

Based on the available data, there appears to be a slight supply gap for the occupations of interest. This is within COE’s acceptable margin (25% over or under the number of annual openings) and is therefore considered “supply met” rather than a “supply gap.” While this program does not meet the traditional supply/demand endorsement criteria, there may be demand for these workers from local employers that is not reflected in traditional labor market data. For this reason, real-time labor market data is included in this report as well— to provide a more nuanced view of the regional job market for these middle-skill occupations related to environmental technology. Furthermore, entry-level wages exceed the self-sufficiency standard wage in both Los Angeles and Orange counties, and approximately one-third of current workers in the field have completed some college or an associate degree.

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

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.

Key Findings

Supply Gap

- 344 annual job openings are projected in the region through 2027. This number is greater than the three-year average of 330 awards conferred by regional educational institutions.
 - The data suggests that the demand has been met for these occupations within the LA/OC region since the three-year average number of awards (supply) is within the COE's 25% margin of annual job openings (demand).
 - Over the past 12 months, there were 334 online job postings related to these environmental technology occupations. The highest number of job postings were for asbestos supervisors, restoration technicians, recycling coordinators, recycling sorters, and mitigation technicians.

Living Wage

- Both occupations have entry-level wages **above** Los Angeles County's self-sufficiency standard hourly wage (\$18.10/hour).²

Educational Attainment

- 86% 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.
- 29%-51% of workers in the field have completed some college or an associate degree, according to national educational attainment data.

Community college supply

- 7 community colleges issued awards related to environmental technology in the greater LA/OC region.
- 330 awards (degrees and certificates) were conferred on average each year between 2019 and 2022.

Other postsecondary supply

- No other postsecondary institutions in the LA/OC region have conferred awards in CIP codes related to environmental technology in the past three years.

TARGET OCCUPATIONS

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

- **Environmental engineering technicians (17-3025)**³
- **Hazardous materials removal workers (47-4041)**⁴
- **Recycling coordinators (53-0142.01)**⁵
- **Recycling and reclamation workers (53-7062.04)**⁶

² Self-Sufficiency Standard wage data was pulled from The Self-Sufficiency Standard Tool for California. For more information, visit: <http://selfsufficiencystandard.org/california>.

³ [Environmental Engineering Technologists and Technicians \(bls.gov\)](#)

⁴ [Hazardous Materials Removal Workers \(bls.gov\)](#)

⁵ [Recycling Coordinators \(onetonline.org\)](#)

⁶ [Recycling and Reclamation Workers \(onetonline.org\)](#)

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 increase by 5% through 2027. There will be more than 340 job openings per year through 2027 due to job growth and replacements. The majority of jobs in 2022 for these middle-skill environmental technology occupations (65%) were located in Los Angeles County.

Exhibit 1: Current employment and occupational demand, Los Angeles and Orange counties⁷

Geography	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change	Annual Openings
Los Angeles	1,950	2,084	134	7%	234
Orange	1,034	1,041	7	1%	110
Total	2,984	3,125	141	5%	344

Detailed Occupation Data

Exhibit 2 displays the current employment and projected occupational demand for each of the target occupations in Los Angeles County. The percentage of workers aged 55+ is included in order to visualize upcoming replacement demand for these occupations.

Exhibit 2: Current employment, projected occupational demand, percentage of workers aged 55+, Los Angeles County⁸

Occupation	2022 Jobs	2027 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	% Aged 55 and older*
Environmental engineering technologists and technicians	326	334	8	2%	31	27%
Hazardous materials removal workers	1,624	1,751	127	8%	203	21%
Total	1,950	2,084	134	7%	234	22%

*The average percentage of workers aged 55 and older across all occupations in the greater LA/OC region is 27%. Hazardous materials removal workers have a smaller share of older workers, which typically indicates fewer replacements needs to offset the amount of impending retirements.

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.

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.

⁸ Ibid.

Los Angeles County

Both occupations have entry-level hourly wages above the self-sufficiency standard wage for one adult (\$18.10 in Los Angeles County). Typical entry-level hourly wages are in a range between \$20.82 and \$28.53. (Exhibit 3). Experienced workers can expect to earn wages between \$29.93 and \$41.86.

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*
Environmental engineering technologists and technicians	\$28.53	\$36.36	\$41.86	\$75,600
Hazardous materials removal workers	\$20.82	\$23.90	\$29.93	\$49,700

*Rounded to the nearest \$100

Orange County

Both occupations have entry-level hourly wages above the self-sufficiency standard wage for one adult (\$20.63 in Orange County). Typical entry-level hourly wages are in a range between \$22.29 and \$28.07 (Exhibit 4). Experienced workers can expect to earn wages between \$32.05 and \$41.00.

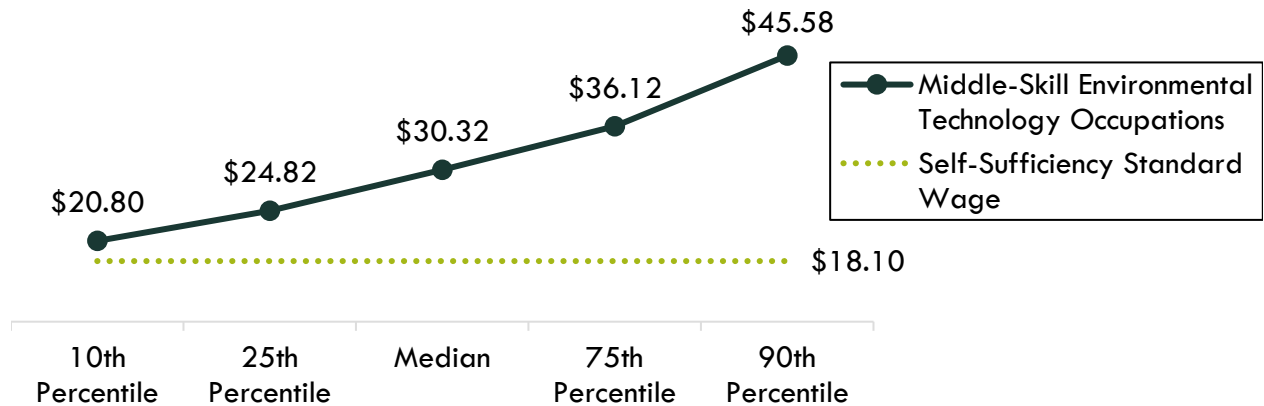
Exhibit 4: Earnings for occupations in Orange County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)	Median Annual Earnings*
Environmental engineering technologists and technicians	\$28.07	\$35.65	\$41.00	\$74,200
Hazardous materials removal workers	\$22.29	\$25.60	\$32.05	\$53,200

*Rounded to the nearest \$100

On average, the entry-level hourly earnings for the occupations in this report are \$24.82; this is above the living wage for one single adult in Los Angeles County (\$18.10). Exhibit 5 shows the average wage for the occupations in this report, for entry-level to experienced workers.

Exhibit 5: Average hourly earnings for middle-skill environmental technology occupations, Los Angeles and Orange counties



JOB POSTINGS

There were 334 online job postings related to environmental technology 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 (69%) were for hazardous materials removal workers, followed by recycling coordinators (14%) and recycling and reclamation workers (9%).

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



Job postings were also 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"> Asbestos supervisors Restoration technicians Recycling coordinators Recycling sorters Mitigation technicians 	<ul style="list-style-type: none"> Asbestos abatement Project management Resource management Construction Emergency response 	<ul style="list-style-type: none"> Athens Services Helix Environmental Construction Group Republic Services SERVPRO Waste Management

Of the 48% of environmental technology job postings listing a minimum education requirement in the greater Los Angeles/Orange County region, 64% (102) requested high school or vocational training, 4% (6) requested an associate degree, and 33% (52) requested a bachelor's degree.

Exhibit 8: Education levels requested in job postings for occupations related to middle-skill environmental technology occupations, Los Angeles and Orange counties

Education Level	Job Postings	% of Job Postings
High school or vocational training	102	64%
Associate degree	6	4%
Bachelor's degree	52	33%

EDUCATIONAL ATTAINMENT

In the greater Los Angeles/Orange County region, the majority of annual job openings (86%) typically require a high school diploma or equivalent (Exhibit 9). However, the national-level educational attainment data indicates between 29% and 51% of workers in the field have completed some college or an associate degree. 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
Environmental engineering technologists and technicians	Associate degree
Hazardous materials removal 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 the related TOP codes: Environmental Technology (0303.00), and Water and Wastewater Technology (0958.00). The colleges with the most completions in the region are Santiago Canyon, Santa Monica, and Citrus. Currently, there are no other postsecondary institutions in the greater LA/OC region that have conferred awards in CIP codes related to environmental technology in the past three years.

Exhibit 10: Regional community college awards (certificates and degrees), 2019-2022

TOP Code	Program	College	2019-20 Awards	2020-21 Awards	2021-22 Awards	3-Year Average
0303.00	Environmental Technology	Rio Hondo	9	4	14	9
		Santa Monica	37	74	57	56
		LA Subtotal	46	78	71	65

TOP Code	Program	College	2019-20 Awards	2020-21 Awards	2021-22 Awards	3-Year Average
		Irvine	4	9	8	7
		Saddleback	-	-	1	0
		Santiago Canyon	3	-	2	2
		OC Subtotal	7	9	11	9
Supply Subtotal/Average			53	87	82	74
0958.00	Water and Wastewater Technology	Citrus	32	53	37	41
		LA Trade-Tech	27	21	23	24
		LA Subtotal	59	74	60	64
		Santiago Canyon	94	369	111	191
		OC Subtotal	94	369	111	191
Supply Subtotal/Average			153	443	171	256
SUPPLY TOTAL/AVERAGE			206	530	253	330

APPENDIX: OCCUPATION DESCRIPTIONS

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

- Environmental engineering technologists and technicians (17-3025)** Apply theory and principles of environmental engineering to modify, test, and operate equipment and devices used in the prevention, control, and remediation of environmental problems, including waste treatment and site remediation, under the direction of engineering staff or scientists. May assist in the development of environmental remediation devices.⁹
- Hazardous materials removal workers (47-4041)** Identify, remove, pack, transport, or dispose of hazardous materials, including asbestos, lead-based paint, waste oil, fuel, transmission fluid, radioactive materials, or contaminated soil. Specialized training and certification in hazardous materials handling or a confined entry permit are generally required. May operate earth-moving equipment or trucks.¹⁰
- Recycling Coordinators (53-1042.01)** Supervise curbside and drop-off recycling programs for municipal governments or private firms.¹¹
- Recycling and Reclamation Workers (53-7062.04)** Prepare and sort materials or products for recycling. Identify and remove hazardous substances. Dismantle components of products such as appliances.¹²

⁹ [Environmental Engineering Technologists and Technicians \(bls.gov\)](https://www.bls.gov)

¹⁰ [Hazardous Materials Removal Workers \(bls.gov\)](https://www.bls.gov)

¹¹ [Recycling Coordinators \(onetonline.org\)](https://www.onetonline.org)

¹² [Recycling and Reclamation Workers \(onetonline.org\)](https://www.onetonline.org)

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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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