

Program Endorsement Brief: 0303.00/Environmental Technology
Environmental Management Associate of Science Degree
Environmental Management Certificate of Achievement
 Orange County Center of Excellence, August 2021

Summary Analysis

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"/>	No	<input type="checkbox"/>		
Living Wage: (Entry-Level, 25th)	Yes	<input checked="" type="checkbox"/>	No	<input 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 Orange County Center of Excellence for Labor Market Research (COE) prepared this report to provide Los Angeles/Orange County regional labor market supply and demand data related to three middle-skill occupations: *environmental engineering technologists and technicians (17-3025)*, *environmental science and protection technicians, including health (19-4042)*, and *construction and building inspectors (47-4011)*. Middle-skill occupations typically require some postsecondary education, but less than a bachelor’s degree.¹ 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 for these environmental technology occupations in the region. Though the majority of annual openings for these occupations typically require a high school diploma or equivalent, over one-third of current workers in the field have completed some college or an associate degree as their highest level of education. Furthermore, the majority of annual openings for the occupations in this report have typical entry-level wages that exceed the living wage in both Los Angeles and Orange counties. **Therefore, due to all the criteria being met, the COE endorses this proposed program.** Detailed reasons include:

Demand:

- **Supply Gap Criteria** – Over the next five years, there is projected to be **742 jobs available annually** in the region due to retirements and workers leaving the field,

¹ 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.

which is more than the 375 awards conferred annually by educational institutions in the region.

- However, the *construction and building inspectors (47-4011)* SOC code includes a variety of inspection job titles and not those solely related to environmental inspection. Since the SOC code does not solely represent environmental inspection positions, **the number of annual job openings is overstated.**
- Over the past 12 months, there were **1,296 online job postings related to these environmental technology occupations.** The highest number of job postings were for inspector, home inspector, construction inspector, environmental technician, and environmental field technician.
- **Living Wage Criteria** –Within Orange County, **the majority (72%) of annual job openings** for these environmental technology occupations **have entry-level wages above the county’s living wage (\$17.36/hour).**²
- **Educational Criteria** –Within the LA/OC region, **61% of the annual job openings** for occupations related to environmental technology **typically require a high school diploma or equivalent.**
 - However, the national-level educational attainment data indicates **between 33% and 50.7% of workers in the field have completed some college or an associate degree as their highest level of education.**

Supply:

- There are **8 community colleges** in the LA/OC region that issue awards related to environmental technology, conferring an average of **92 awards annually** between 2017 and 2020.
- Between 2016 and 2019, there was an average of **283 awards conferred annually** in related training programs by non-community college institutions, all of which were generated by **16 individual four-year colleges throughout** the region.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for these environmental technology occupations. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to decrease by 0.5% through 2024. However, there will be nearly 750 job openings per year through 2024 due to retirements and workers leaving the field. It is important to note that the *construction and building inspectors (47-4011)* SOC code includes a variety of inspection job titles and not those solely related to environmental inspection. Therefore, the data in Exhibit 1 is overstated for this occupation.

This report includes employment projection data by Emsi which uses EDD information. Emsi’s projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy, during the projection period, will be at approximately full employment. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, it may impact the projections.

² Living wage data was pulled from California Family Needs Calculator on 7/28/2021. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Therefore, the projections included in this report do not take the impacts of COVID-19 into account.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties³

Geography	2019 Jobs	2024 Jobs	2019-2024 Change	2019-2024 % Change	Annual Openings
Los Angeles	4,736	4,702	(34)	(1%)	517
Orange	2,020	2,023	2	0%	225
Total	6,757	6,725	(32)	(0.5%)	742

Wages

The labor market endorsement in this report considers the entry-level hourly wages for these environmental technology occupations in Orange County as they relate to the county’s living wage. Los Angeles County wages are included below in order to provide a complete analysis of the LA/OC region. Detailed wage information, by county, is included in Appendix A.

Orange County—The majority (72%) of annual openings for these environmental technology occupations have entry-level wages above the living wage for one adult (\$17.36 in Orange County). One occupation, *environmental science and protection technicians, including health*, has entry-level wages below the living wage. Typical entry-level hourly wages are in a range between \$14.15 and \$32.05. Experienced workers can expect to earn wages between \$32.23 and \$54.85, which is higher than the living wage estimate. Orange County’s average wages are above the average statewide wage of \$36.54 for these occupations.

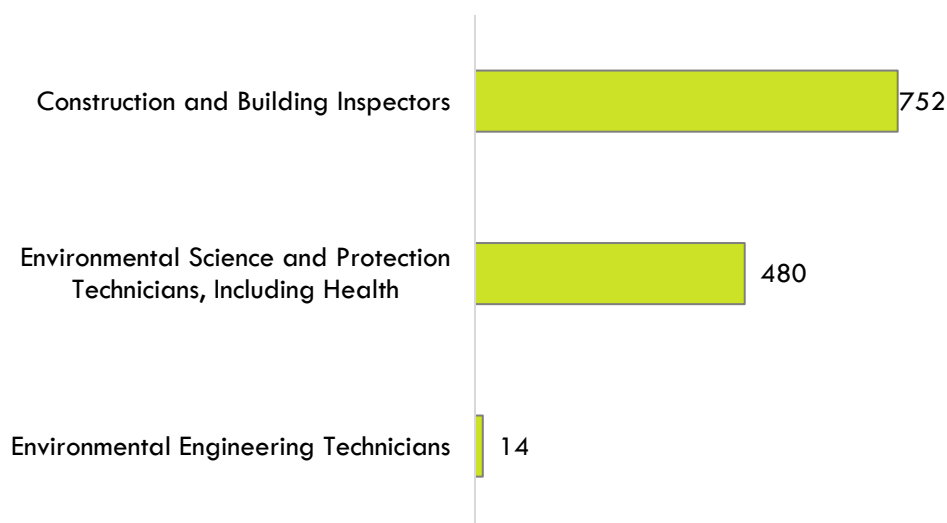
Los Angeles County—All annual openings for these environmental technology occupations have entry-level wages above the living wage for one adult (\$15.04 in Los Angeles County). Typical entry-level hourly wages are in a range between \$15.47 and \$32.88. Experienced workers can expect to earn wages between \$35.25 and \$56.14, which are higher than the living wage estimate. Los Angeles County’s average wages are above the average statewide wage of \$36.54 for these occupations.

Job Postings

There were 1,246 online job postings related to these environmental technology occupations listed in the past 12 months. Exhibit 2 shows the number of job postings by occupation. The most frequently posted job titles were inspector, home inspector, construction inspector, environmental technician, and environmental field technician. The top skills were construction inspection, occupational health and safety, repair, plumbing, and project management. The top three employers, by number of job postings, in the region were: Werkberry, Pegasus Building Services Company, Green Valley Inspections, and Amerispec Inspection SoCal.

³ 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 2: Number of Online Job Postings by Occupation, Last 12 Months (n=1,246)



It is important to note that the job postings data included in this section reflects online job postings listed in the past 12 months and does not yet demonstrate the impact of COVID-19. While employers have generally posted fewer online job postings since the beginning of the pandemic, the long-term effects are currently unknown.

Educational Attainment

The Bureau of Labor Statistics (BLS) lists a high school diploma or equivalent as the typical entry-level education for *construction and building inspectors* and an associate degree for *environmental engineering technologists and technicians* as well as *environmental science and protection technicians, including health*. In the LA/OC region, the majority of annual job openings (61%) typically require a high school diploma or equivalent. However, the national-level educational attainment data indicates between 33% and 50.7% of workers in the field have completed some college or an associate degree as their highest level of education. Of the 54% of environmental technology job postings listing a minimum education requirement in Los Angeles/Orange County, 69% (462) requested a high school diploma or vocational training, 24% (161) requested a bachelor's degree, and 6% (42) requested an associate degree.

Educational Supply

Community College Supply—Exhibit 3 shows the three-year average number of awards conferred by community colleges in the related TOP codes: Environmental Technology (0303.00) and Construction Inspection (0957.20). Over the past three years, regional community colleges have conferred an average of 92 awards annually. The colleges with the most completions in the region are Santa Monica, Rio Hondo, and Pasadena. Over the past 12 months, there was one other related program recommendation requests from regional community colleges.

Exhibit 3: Regional community college awards (certificates and degrees), 2017-2020

TOP Code	Program	College	2017-2018 Awards	2018-2019 Awards	2019-2020 Awards	3-Year Award Average
0303.00	Environmental Technology	Rio Hondo	22	20	9	17
		Santa Monica	7	26	37	23
		LA Subtotal	29	46	46	40
		Irvine	1	0	4	2
		Saddleback	0	1	0	0
		Santiago Canyon	1	5	3	3
		OC Subtotal	2	6	7	5
Supply Subtotal/Average			31	52	53	45
0957.20	Construction Inspection	Pasadena	9	7	21	12
		LA Subtotal	9	7	21	12
		Coastline	12	15	11	13
		Fullerton	8	11	4	8
		Saddleback	3	10	15	9
		Santiago Canyon	0	0	15	5
		OC Subtotal	23	36	45	35
Supply Subtotal/Average			32	43	66	47
Supply Total/Average			63	95	119	92

Non-Community College Supply—For a comprehensive regional supply analysis, it is also important to consider the supply from other institutions in the region that provide training programs for these environmental technology occupations. Exhibit 4 shows the annual and three-year average number of awards conferred by these institutions in the related Classification of Instructional Programs (CIP) Code: Environmental Science (03.0104). Due to different data collection periods, the most recent three-year period of available data is from 2016 to 2019. Between 2016 and 2019, four-year colleges in the region conferred an average of 283 awards annually in related training programs.

Exhibit 4: Regional non-community college awards, 2016-2019

CIP Code	Program	College	2016-2017 Awards	2017-2018 Awards	2018-2019 Awards	3-Year Award Average
03.0104	Environmental Science	Biola University	2	3	0	2
		California State University-Dominguez Hills	1	2	1	1

CIP Code	Program	College	2016-2017 Awards	2017-2018 Awards	2018-2019 Awards	3-Year Award Average
		California State University-Long Beach	31	39	49	40
		California State University-Los Angeles	6	5	7	6
		Claremont McKenna College	1	6	0	2
		Loyola Marymount University	6	8	10	8
		Pitzer College	25	25	31	27
		Pomona College	16	11	13	13
		Scripps College	10	10	12	11
		University of California-Los Angeles	71	65	78	71
		University of La Verne	1	1	0	1
		University of Southern California	32	26	38	32
		Whittier College	5	4	6	5
		LA Subtotal	29	46	46	40
		California State University-Fullerton	23	21	20	21
		Chapman University	1	0	13	5
		University of California-Irvine	29	47	38	38
		OC Subtotal	53	68	71	64
		Supply Total/Average	260	273	316	283

Appendix A: Occupational demand and wage data by county

Exhibit 5. Orange County

Occupation (SOC)	2019 Jobs	2024 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)
Environmental Engineering Technologists and Technicians (17-3025)	415	334	(81)	(19%)	31	\$24.93	\$29.05	\$38.64
Environmental Science and Protection Technicians, Including Health (19-4042)	514	540	26	5%	63	\$14.15	\$21.07	\$32.23
Construction and Building Inspectors (47-4011)	1,091	1,149	57	5%	131	\$32.05	\$43.68	\$54.85
Total	2,020	2,023	2	0.1%	225			

Exhibit 6. Los Angeles County

Occupation (SOC)	2019 Jobs	2024 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)
Environmental Engineering Technologists and Technicians (17-3025)	785	620	(165)	(21%)	55	\$25.33	\$29.53	\$39.31
Environmental Science and Protection Technicians, Including Health (19-4042)	1,196	1,224	28	2%	142	\$15.47	\$23.05	\$35.25
Construction and Building Inspectors (47-4011)	2,755	2,858	103	4%	320	\$32.88	\$44.76	\$56.14
Total	4,736	4,702	(34)	(1%)	517			

Exhibit 7. Los Angeles and Orange Counties

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings
Environmental Engineering Technologists and Technicians (17-3025)	1,200	954	(246)	(21%)	86
Environmental Science and Protection Technicians, Including Health (19-4042)	1,710	1,764	54	3%	204
Construction and Building Inspectors (47-4011)	3,847	4,007	160	4%	451
Total	6,757	6,725	(32)	(0.5%)	742

Appendix B: Sources

- O*NET Online
- Labor Insight/Jobs (Burning Glass)
- Economic Modeling Specialists, International (Emsi)
- Bureau of Labor Statistics (BLS)
- Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor’s Office Management Information Systems (MIS)
- California Family Needs Calculator, Insight Center for Community Economic Development
- Chancellor’s Office Curriculum Inventory (COCI 2.0)

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August 2021

