










Environmental Safety Management Occupations

Labor Market Analysis: San Diego County

June 2022

Summary

NEW PROGRAM RECOMMENDATION?	EVIDENCE OF A SUPPLY GAP?	AT OR ABOVE THE LIVING WAGE?	EXPECTED EDUCATION FOR MAJORITY OF OCCUPATIONS ANALYZED
 Proceed with Caution	 	 	<input checked="" type="checkbox"/> Bachelor's Degree+ <input type="checkbox"/> Associate Degree <input type="checkbox"/> Some College or Certificate <input type="checkbox"/> HS Diploma or Equivalent <input type="checkbox"/> Less than a HS Diploma <input type="checkbox"/> Apprenticeship
SUPPORT FOR PROGRAM MODIFICATION?	NUMBER OF INSTITUTIONS THAT PROVIDE TRAINING	NUMBER OF ANNUAL JOB OPENINGS	
 	HIGH 	MEDIUM 	

This brief provides labor market information about *Environmental Safety Management Occupations* to assist the San Diego and Imperial Counties Community Colleges with program development and strategic planning. *Environmental Safety Management Occupations* include “Environmental Engineering Technologists and Technicians,” “Environmental Science and Protection Technicians, Including Health,” and “Environmental Scientists and Specialists, Including Health.” According to available labor market information, *Environmental Safety Management Occupations* in San Diego County have a labor market demand of 269 annual job openings (while average demand for a single occupation in San Diego County is 245 annual job openings), and 12 institutions supply 369 awards for these occupations, suggesting that there is an oversupply in the labor market. Entry-level and median wages are above the living wage for all occupations. This brief recommends to proceeding with caution when developing a new program but supports a program modification because although 1) these occupations’ entry-level and median earnings are above the living wage. 2) there appears to be an oversupply of awards in the region. Colleges should note that **employers typically require a bachelor’s degree as the minimum educational requirement for these occupations.**

Introduction

This report provides labor market information in San Diego County for the following occupational codes in the Standard Occupational Classification (SOC)¹ system:

- **Environmental Engineering Technologists and Technicians** (SOC 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.
- **Environmental Science and Protection Technicians, Including Health** (SOC 19-4042): Perform laboratory and field tests to monitor the environment and investigate sources of pollution, including those that affect health, under the direction of an environmental scientist, engineer, or other specialist. May collect samples of gases, soil, water, and other materials for testing.
- **Environmental Scientists and Specialists, Including Health** (SOC 19-2041): Conduct research or perform investigation for the purpose of identifying, abating, or eliminating sources of pollutants or hazards that affect either the environment or public health. Using knowledge of various scientific disciplines, may collect, synthesize, study, report, and recommend action based on data derived from measurements or observations of air, food, soil, water, and other sources.

For the purpose of this report, these occupations are referred to as *Environmental Safety Management Occupations*.

¹ The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](https://www.bls.gov/soc).

Projected Occupational Demand

Between 2021 and 2026, *Environmental Safety Management Occupations* are projected to increase by 98 net jobs or four percent (Exhibit 1 a). Employers in San Diego County will need to hire 269 workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.

Exhibit 1a: Number of Jobs for Environmental Safety Management Occupations (2011-2026)²

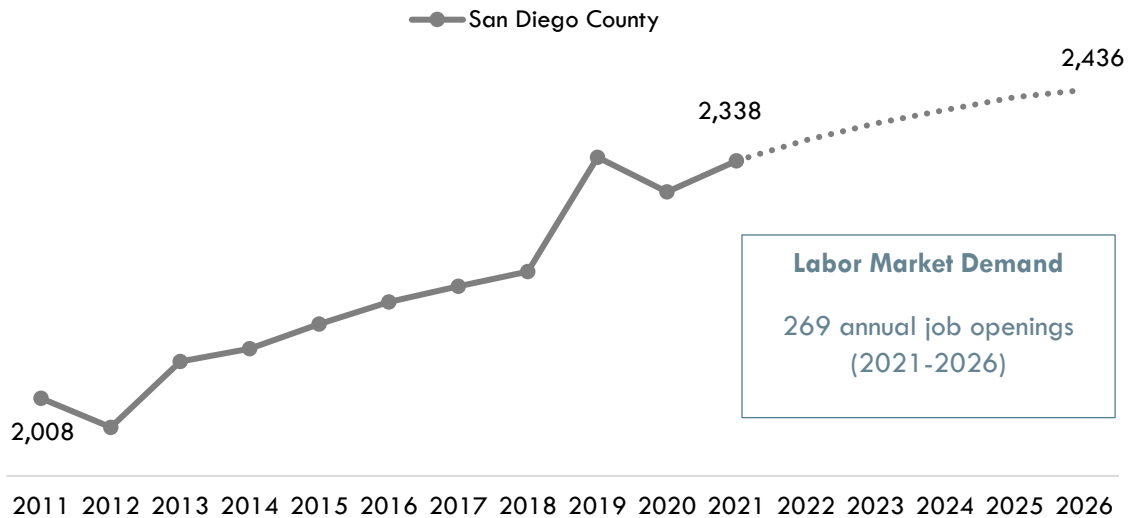


Exhibit 1b disaggregates the projected number of jobs change by occupation. “Environmental Scientists and Specialists, Including Health” are projected to have the most labor market demand between 2021 and 2026, with 143 annual job openings.

Exhibit 1b: Number of Jobs for Environmental Safety Management Occupations in San Diego County (2021-2026)³

Occupational Title	2021 Jobs	2026 Jobs	2021 - 2026 Net Jobs Change	2021- 2026 % Net Jobs Change	Annual Job Openings (Demand)
Environmental Scientists and Specialists, Including Health	1,310	1,380	70	5%	143
Environmental Science and Protection Technicians, Including Health	799	813	14	2%	101
Environmental Engineering Technologists and Technicians	229	243	14	6%	25
Total	2,338	2,436	98	4%	269

² EMSI 2022.2; QCEW, Non-QCEW, Self-Employed.

³ EMSI 2022.2; QCEW, Non-QCEW, Self-Employed.

Earnings

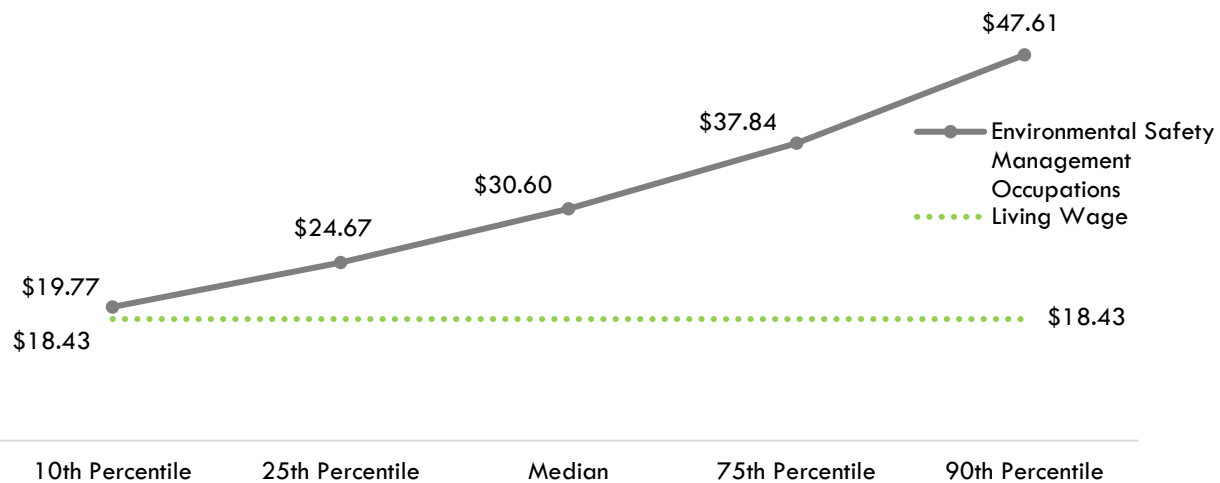
Exhibit 2a disaggregates hourly earnings by occupation. The entry-level hourly earnings for *Environmental Safety Management Occupations* range from \$18.65 to \$30.35.

Exhibit 2a: Hourly Earnings for *Environmental Safety Management Occupations* in San Diego County⁴

Occupational Title	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Environmental Scientists and Specialists, Including Health	\$30.35	\$39.11	\$48.51
Environmental Engineering Technologists and Technicians	\$25.01	\$28.75	\$34.10
Environmental Science and Protection Technicians, Including Health	\$18.65	\$23.96	\$30.91

On average, the entry-level hourly earnings for *Environmental Safety Management Occupations* are \$24.67; this is more than the living wage for a single adult in San Diego County, which is \$18.43 per hour (Exhibit 2b).⁵

Exhibit 2b: Average Hourly Earnings⁶ for *Environmental Safety Management Occupations* in San Diego County⁷



⁴ EMSI 2022.2; QCEW, Non-QCEW, Self-Employed.

⁵ "Family Needs Calculator (formerly the California Family Needs Calculator)," Insight: Center for Community Economic Development, last updated 2021. insightccd.org/family-needs-calculator/.

⁶ 10th and 25th percentiles could be considered entry-level wages, and 75th and 90th percentiles could be considered experienced wages for individuals who may have been in the occupation longer, received more training than others, etc.

⁷ EMSI 2022.2; QCEW, Non-QCEW, Self-Employed.

Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of awards in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes.⁸ There are **five** TOP codes and **eight** CIP codes related to *Environmental Safety Management Occupations* (Exhibit 3). Traditional occupational data crosswalks to some TOP and CIP codes may not be technical enough for the cited occupations. TOP and CIP codes that meet that technical criteria are indicated with an asterisk (*).

Exhibit 3: Related TOP and CIP Codes for *Environmental Safety Management Occupations*⁹

TOP or CIP Code	TOP or CIP Program Title
TOP 0301.00	Environmental Science
TOP 0302.00	Environmental Studies*
TOP 0303.00	Environmental Technology
TOP 0958.00	Water and Wastewater Technology
TOP 1920.00	Ocean Technology
CIP 03.0103	Environmental Studies*
CIP 03.0104	Environmental Science
CIP 15.0506	Water Quality and Wastewater Treatment Management and Recycling Technology/Technician
CIP 15.0507	Environmental/Environmental Engineering Technology/Technician
CIP 15.0508	Hazardous Materials Management and Waste Technology/Technician
CIP 30.3201	Marine Sciences
CIP 30.4101	Environmental Geosciences
CIP 41.9999	Science Technologies/Technicians, Other

According to TOP data, **five** community colleges supply the region with awards for these occupations:

Cuyamaca College, Palomar College, San Diego City, San Diego Mesa, and Southwestern College.

According to CIP data, **seven** non-community-college institutions supply the region with awards:

Ashford University, California State University-San Marcos, National University, Point Loma Nazarene University, San Diego State University, University of California-San Diego, and University of San Diego (Exhibit 4).

⁸ TOP data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data).

⁹ This brief uses a conservative estimate of program supply and only calculates awards from the TOP codes listed in Exhibit 3.

**Exhibit 4: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions
(Program Year 2017-18 through PY2020-21 Average)**

TOP or CIP Code	TOP or CIP Program Title	3-Yr Annual Average CC Awards (PY18-19 to PY20-21)	Other Educational Institutions 3-Yr Annual Average Awards (PY17-18 to PY19-20)	3-Yr Total Average Supply (PY17-18 to PY20-21)
0302.00	Environmental Studies*	13	0	13
	• Palomar	7	0	
	• San Diego City	3	0	
	• San Diego Mesa	3	0	
0303.00	Environmental Technology	26	0	26
	• Cuyamaca	20	0	
	• Southwestern	6	0	
0958.00	Water and Wastewater Technology	48	0	48
	• Cuyamaca	18	0	
	• Southwestern	30	0	
03.0103	Environmental Studies*	0	222	222
	• Ashford University	0	56	
	• California State University-San Marcos	0	47	
	• Point Loma Nazarene University	0	0	
	• San Diego State University	0	58	
	• University of California-San Diego	0	56	
	• University of San Diego	0	5	
03.0104	Environmental Science	0	60	60
	• Ashford University	0	0	
	• National University	0	0	
	• Point Loma Nazarene University	0	4	
	• San Diego State University	0	30	
	• University of San Diego	0	26	
			Total	369

Demand vs. Supply

Comparing labor demand (annual openings) with labor supply¹⁰ suggests that there is an **oversupply** for these occupations in San Diego County, with **269** annual openings and **369** awards. Comparatively, there are **2,696** annual openings in California and **3,864** awards, suggesting that there is an oversupply across the state¹¹ (Exhibit 5).

Exhibit 5: Labor Demand (Annual Openings) Compared with Labor Supply (Average Annual Awards)

	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or Oversupply
San Diego	269	369	100
California	2,696	3,864	1,168

Please note: This is a basic analysis of supply and demand of labor. The data does not include workers currently in the labor force who could fill these positions or workers who are not captured by publicly available data. This data should be used to discuss the potential gaps or oversupply of workers; however, it should not be the only basis for determining whether or not a program should be developed.

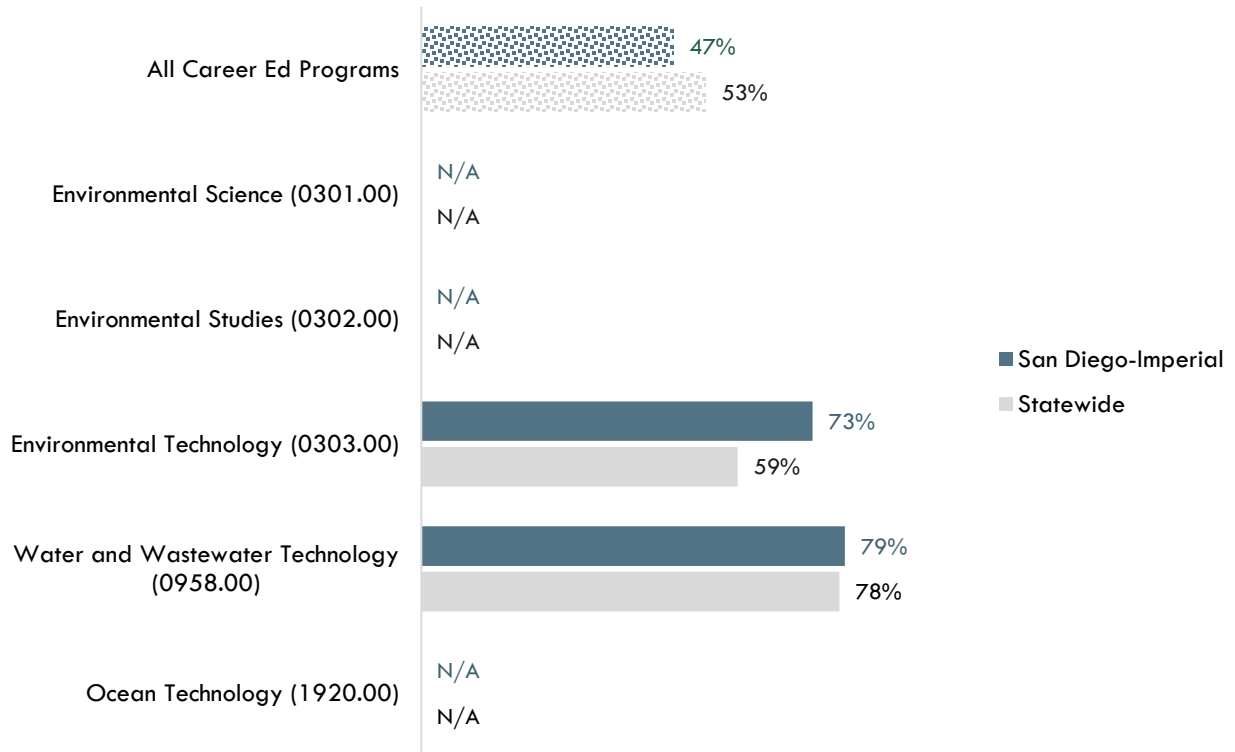
¹⁰ Labor supply can be found from two different sources: EMSI or the California Community Colleges Chancellor's Office MIS Data Mart. EMSI uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.

¹¹ "Supply and Demand," Centers of Excellence Student Outcomes, coecc.net/Supply-and-Demand.aspx.

Student Outcomes and Regional Comparisons

According to the California Community Colleges LaunchBoard, 73 to 79 percent of students in the San Diego-Imperial region earned a living wage after completing a program related to *Environmental Safety Management Occupations*, compared to 59 to 78 percent statewide and 53 percent of students in Career Education programs in general across the state (Exhibit 6a).¹²

Exhibit 6a: Percentage of Students Who Earned a Living Wage by Program, PY2018-19¹³

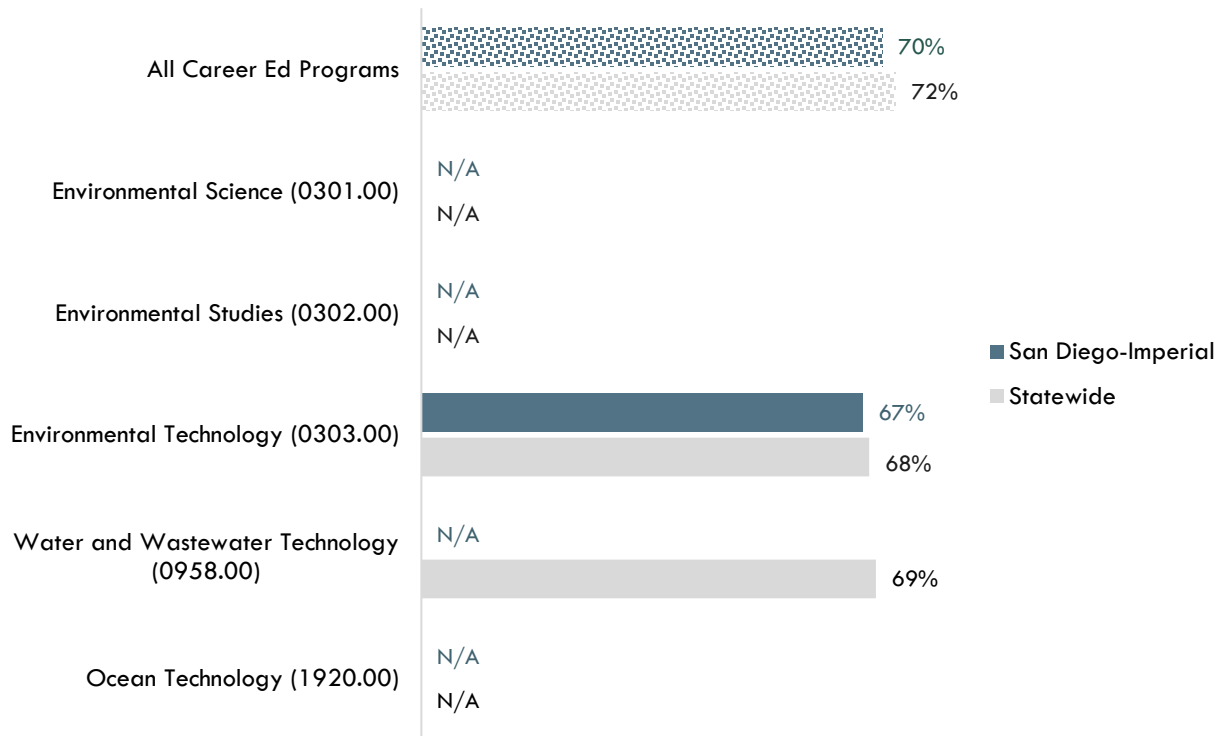


¹² "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹³ Among completers and skills builders who exited, the proportion of students who attained a living wage.

According to the California Community Colleges LaunchBoard, 67 percent of students in the San Diego-Imperial region obtained a job closely related to their field of study after completing a program related to *Environmental Safety Management Occupations*, compared to 68 to 69 percent statewide and 72 percent of students in Career Education programs in general across the state (Exhibit 6b).¹⁴

Exhibit 6b: Percentage of Students in a Job Closely Related to Field of Study by Program, PY2017-18¹⁵



"N/A" indicates insufficient data

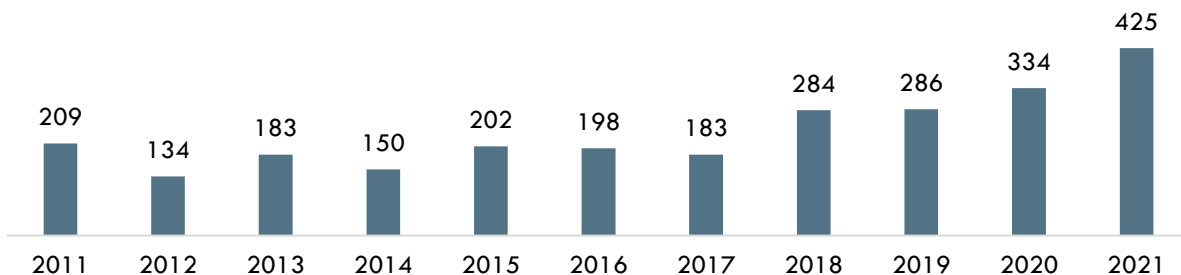
¹⁴ "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹⁵ Most recent year with available data is Program Year 2017-18. Percentage of Students in a Job Closely Related to Field of Study: Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

Online Job Postings

This report analyzes not only historical and projected (traditional LMI) data, but also recent data from online job postings (real-time LMI). Online job postings may provide additional insight about recent changes in the labor market that are not captured by historical data. Between 2011 and 2021, there was an average of 235 online job postings per year for *Environmental Safety Management Occupations* in San Diego County (Exhibit 7). Please note that online job postings do **not** equal labor market demand; demand is represented by annual job openings (see Exhibit 1b). Employers may post a position multiple times for various reasons, such as increasing the pool of applicants, for example.

Exhibit 7: Number of Online Job Postings for *Environmental Safety Management Occupations* in San Diego County (2011-2021)¹⁶



Top Employers

Between January 1, 2019 and December 31, 2021, the top five employers in San Diego County for *Environmental Safety Management Occupations* were County of San Diego, University of California San Diego, Cherry Hill Programs, AECOM Technology Corporation, and Pegasus Building Services Company based on online job postings (Exhibit 8).

Exhibit 8: Top Employers for *Environmental Safety Management Occupations* in San Diego County¹⁷

Top Employers	
<ul style="list-style-type: none"> • County of San Diego • University of California San Diego • Cherry Hill Programs • AECOM Technology Corporation • Pegasus Building Services Company 	<ul style="list-style-type: none"> • Stantec, Inc. • ICF • Grossmont-Cuyamaca Community College District • American Technologies Incorporated • Eurofins Scientific

¹⁶ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2011-2022.

¹⁷ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2019-2021.

Education, Skills, and Certifications

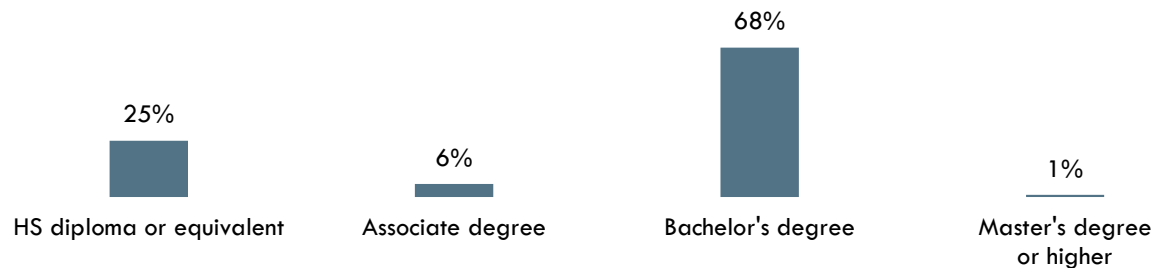
Environmental Safety Management Occupations have a national educational attainment ranging from an associate degree to a bachelor's degree (Exhibit 9a).

Exhibit 9a: National Educational Attainment for *Environmental Safety Management Occupations*¹⁸

Occupational Title	Typical Entry-Level Education
Environmental Scientists and Specialists, Including Health	Bachelor's degree
Environmental Engineering Technologists and Technicians	Associate degree
Environmental Science and Protection Technicians, Including Health	Associate degree

Based on online job postings between January 1, 2019 and December 31, 2021 in San Diego County, employers posted a bachelor's degree as the educational requirement for *Environmental Safety Management Occupations* (Exhibit 9b).¹⁹

Exhibit 9b: Educational Requirements for *Environmental Safety Management Occupations* in San Diego County²⁰



*may not total 100 percent due to rounding

¹⁸ EMSI 2022.2; QCEW, Non-QCEW, Self-Employed.

¹⁹ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2019-2021.

²⁰ "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," Bureau of Labor Statistics, last modified April 9, 2021. bls.gov/emp/tables/educational-attainment.htm.

Exhibit 10 lists the top specialized, soft, and software skills that appeared in online job postings between January 1, 2019 and December 31, 2021.

Exhibit 10: Top Skills for *Environmental Safety Management Occupations* in San Diego County²¹

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Environmental Science • Environmental Planning • Hazardous Waste • California Environmental Quality Act (CEQA) • Occupational Health and Safety • Project Management • Biology • Scheduling • Customer Service • Environmental Compliance • Budgeting • Chemistry • Environmental Health and Safety • Cleaning • Staff Management 	<ul style="list-style-type: none"> • Communication Skills • Planning • Writing • Detail-Oriented • Research • Organizational Skills • Teamwork / Collaboration • Physical Abilities • Problem Solving • Written Communication • Multi-Tasking • Computer Literacy • English • Verbal / Oral Communication • Creativity 	<ul style="list-style-type: none"> • Microsoft Excel • Microsoft Word • Microsoft PowerPoint • Microsoft Outlook • Microsoft Access • Database Software • Microsoft Project • Word Processing • Microsoft SharePoint • Geographic Information System (GIS) • Adobe Acrobat • Google Docs • ArcGIS • Enterprise Resource Planning (ERP) • Salesforce

²¹ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2019-2021.

Exhibit 11 lists the top certification that appeared in online job postings between January 1, 2019 and December 31, 2021.

Exhibit 11: Top Certification for *Environmental Safety Management Occupations* in San Diego County²²

Top Certification in Online Job Postings

1. HAZWOPER
 2. Security Clearance
 3. Hazardous Materials Certification
 4. Certified Industrial Hygienist
 5. Certified Hazardous Materials Manager
 6. American Institute of Certified Planners
 7. Project Management Certification
 8. Mold Remediation Certification
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²² Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2019-2021.

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Important Disclaimers

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.

This workforce demand report uses state and federal job projection data that was developed before the economic impact of COVID-19. The COE is monitoring the situation and will provide more information as it becomes available. Please consult with local employers to understand their current employment needs.