

Unmanned Aerial Vehicle (UAV) Occupations

Labor Market Analysis: San Diego County

September 2026

Summary

NEW PROGRAM RECOMMENDATION?	EVIDENCE OF A SUPPLY GAP?	AT OR ABOVE THE LIVING WAGE?	EXPECTED LEVEL(S) OF EDUCATION
 Proceed with Caution	N/A Insufficient Data	 	☐ Doctorate Degree ☐ Master's Degree ☒ Bachelor's Degree ☐ Associate degree ☐ Some College or Certificate ☐ High School Diploma or Equivalent ☐ Less Than a High School Diploma ☐ Apprenticeship
SUPPORT FOR PROGRAM MODIFICATION?	NUMBER OF INSTITUTIONS THAT PROVIDE TRAINING	NUMBER OF ANNUAL JOB OPENINGS	
 	HIGH 	N/A Insufficient Data	

The San Diego & Imperial Center of Excellence (COE) developed this brief to assist the region's community colleges with strategic planning and program development. No Standard Occupational Classification code exclusively represents unmanned aerial vehicle (UAV) work, so a traditional occupational demand–supply gap cannot be calculated. Lightcast identified 1,385 unique keyword-matched postings between January 1, 2023 and December 31, 2025—an average of 462 per year—although postings declined in 2025 and the search captured adjacent software, engineering, media, security, and operations roles. The median advertised wage was \$55.26 per hour, above the San Diego County living wage of \$26.01 per hour. Five regional colleges advertise UAV-related training, and three are listed by the Federal Aviation Administration (FAA) as Unmanned Aircraft Systems (UAS) Collegiate Training Initiative participants. This brief recommends proceeding with caution on a new standalone program and supports program modification focused on specific applications and employer-validated competencies.

Introduction

This report provides labor market information in San Diego County for Unmanned Aerial Vehicle (UAV) occupations. Depending on the employer and application, these positions may be described as UAV operators or pilots, unmanned aircraft systems (UAS) operators, UAS mechanics or technicians, commercial drone pilots or operators, remote pilots or operators, visual observers, drone photographers or videographers, and UAV-enabled data analysts. In this report, these jobs are collectively referred to as UAV occupations.

Because UAV duties are distributed across multiple industries and job functions, no single occupational code fully represents the field. Rather than limiting the analysis to a predetermined group of occupations, this update reviews every Standard Occupational Classification (SOC) occupation appearing in Lightcast's top UAV keyword-matched results. The results span software and engineering, photography and video, surveying and mapping, aviation, sales, education, inspection, security, maintenance, and other functions. Exhibit 9 identifies the occupations with the highest number of UAV keyword-matched postings and compares those postings with each occupation's estimated overall countywide posting volume.

An unmanned aircraft is operated without a pilot onboard and may be remotely controlled or capable of varying levels of automated flight. Common small-UAV configurations include fixed-wing aircraft, single-rotor aircraft, hybrid vertical-takeoff-and-landing aircraft, and multirotor aircraft such as quadcopters and octocopters. The airframe is only one component of a UAS, which can also include control stations, communications links, sensors, cameras, mapping equipment, and data-processing systems.¹

¹ FAA—Unmanned Aircraft Systems, faa.gov/uas; Hassanalian and Abdelkefi—Classifications, Applications and Design Challenges of Drones, researchgate.net/publication/316673697.

Introduction—Certification, Registration, and Regional Training

Commercial and other nonrecreational small-drone operations under the FAA's Small UAS Rule (Part 107) require an FAA Remote Pilot Certificate. First-time applicants must be at least 16 years old, meet FAA language and fitness requirements, and pass the Unmanned Aircraft General–Small knowledge test. A current Part 61 pilot certificate holder with a flight review completed within the previous 24 months may instead complete the FAA's UAS-specific online training. The certificate is permanent unless revoked, but recurrent online training is required every 24 calendar months to maintain currency.

Drone registration is separate from pilot certification. All drones must be registered except those weighing 0.55 pounds or less that are flown exclusively under the recreational exception. Part 107 registration costs \$5 per drone and is valid for three years. Drones requiring registration must also comply with Remote Identification (Remote ID) unless an exception applies.²

The FAA Reauthorization Act of 2018 directed the agency to establish a collegiate training initiative for unmanned aircraft systems. Launched in April 2020, the UAS Collegiate Training Initiative (UAS-CTI) recognizes institutions that prepare students for drone careers and connects education with industry and government. The FAA's February 2026 directory lists MiraCosta College, Palomar College District, and San Diego Miramar College as regional participants. Grossmont College and Southwestern College also advertise UAV-related coursework or certificate pathways, bringing the regional training landscape to five colleges.

The remaining sections update online job postings and employers, educational supply, demand versus supply, earnings, education, qualifications and certifications, skills, other labor-market considerations, and the keyword-search methodology.³

² FAA—Become a Certificated Remote Pilot, [faa.gov/uas/commercial_operators/become_a_drone_pilot](https://www.faa.gov/uas/commercial_operators/become_a_drone_pilot); FAA—Part 61 Certificate Holders, [faa.gov/faq/i-already-have-pilot-certificate-issued-under-part-61-do-i-need-obtain-remote-pilot-certificate](https://www.faa.gov/faq/i-already-have-pilot-certificate-issued-under-part-61-do-i-need-obtain-remote-pilot-certificate); FAA—How to Register Your Drone, [faa.gov/uas/getting_started/register_drone](https://www.faa.gov/uas/getting_started/register_drone).

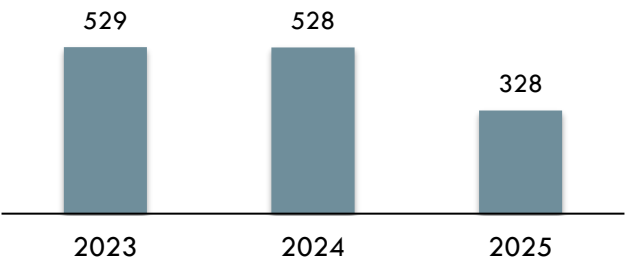
³ FAA—UAS Collegiate Training Initiative, [faa.gov/uas/educational_users/collegiate_training_initiative](https://www.faa.gov/uas/educational_users/collegiate_training_initiative); FAA—UAS-CTI School Directory, [faa.gov/uas/educational_users/collegiate_training_initiative/UAS-CTI-School-Directory](https://www.faa.gov/uas/educational_users/collegiate_training_initiative/UAS-CTI-School-Directory).

Online Job Postings and Top Employers

Traditional occupational demand is not available for a distinct UAV occupation because no SOC code exclusively represents commercial drone pilots, operators, technicians, photographers, or UAV-enabled analysts. To better understand employer activity, this brief analyzes online postings that matched 35 UAV-related keywords and exact phrases. Lightcast identified 1,385 unique postings between January 2023 and December 2025. The number of online job postings remained stable between 2023 and 2024, but decreased 38% in 2025. The three-year average was 462 unique postings per year.

Online job postings do not equal occupational demand or guaranteed openings for program graduates. Employers may repost advertisements, leave postings active after hiring plans change, or use one posting to fill multiple positions. Broad search terms such as “drone” and “UAV,” as well as small unmanned aircraft systems (sUAS), also capture adjacent software, engineering, media, security, and operations roles. Exhibit 1 should therefore be interpreted as keyword activity that supplements—not replaces—traditional labor-market projections and employer validation.

Exhibit 1: Unique Keyword-Matched Online Job Postings by Year, 2023–2025⁴



⁴ Lightcast Q3 2026. Search period: January 2023–December 2025. Unique postings; non-staffing companies; newly posted advertisements. Analysis by COE.

Top Employers and UAV-Specific Job Titles

The employers below had the largest number of unique keyword-matched postings. Employer counts reflect any posting that matched the UAV query; they do not mean that every posting was for a dedicated UAV job. The concentration at Shield Ai and the presence of technology, defense, health, security, and engineering firms illustrate the cross-functional nature of the results.

Exhibit 2: Top Employers with Keyword-Matched UAV Postings⁵

Employer	Unique Postings
Shield Ai	352
UnitedHealth Group	58
Allied Universal	58
Carlisle Interconnect Technologies	47
General Atomics	39
Qualcomm	35
Amentum	35
One Stop Systems	29
BlueHalo	28
Aerovironment	27

Among the top job titles in online job postings, UAV Pilots and Drone Pilots each had 14 postings, while Drone Operators had eight postings (Exhibit 3).

Exhibit 3: Top UAV-Specific Job Titles in Online Job Postings⁶

Job Title	Unique Postings
UAV Pilots	14
Drone Pilots	14
Drone Operators	8

⁵ Lightcast Q3 2026. Employer names and capitalization are reproduced from the export. Unique keyword-matched postings, January 2023–December 2025.

⁶ Lightcast Q3 2026. Titles are reported as categorized in the export; counts should not be summed as a total occupation estimate.

Educational Supply

Educational supply for an occupation is normally estimated by analyzing awards in related Taxonomy of Programs or Classification of Instructional Programs codes. For UAV occupations, the available regional offerings vary in length, credit status, and curricular emphasis, and comparable annual completion totals are not available. The five colleges below currently advertise UAV-related education or training; Exhibit 4 identifies the offerings for program-planning context and does not represent a count of trained workers.

Exhibit 4: Regional College UAV-Related Training⁷

Institution	Current UAV-Related Offering
Grossmont College	Drone Technology coursework in flight, cinematography, and mapping.
MiraCosta College	Drone Pilot and Technician Certificate; 180-hour workforce training with FAA test preparation.
Palomar College	Drone Operations Certificate of Achievement and related pathway coursework.
San Diego Miramar College	Aviation Operations coursework, including AVIA 161/161L and FAA knowledge-test preparation.
Southwestern College	Drone Technology and Applications certificate pathway.

Part 107 certificate counts should not be treated as labor supply. The certificate is permanent unless revoked, and a certificate record does not show whether the holder is current, available for work, located in the county, or qualified for a particular industry application. This corrects the 2024 report's interpretation that a decline in annual records represented licenses that were not renewed.⁸

⁷ Grossmont College, grossmont.edu/academics/programs/drone/; MiraCosta College, commed.miracosta.edu/public/category/courseCategoryCertificateProfile.do?certificateId=1642489&method=load&selectedProgramAreaId=1016641&selectedProgramStreamId=1016683; Palomar College, programmap.palomar.edu/program/drone-operations/; San Diego Miramar College, sdmiramar.edu/programs/aviation-operations; Southwestern College, catalog.swccd.edu/associate-degree-certificate-programs/drone-technology-applications/.

⁸ FAA—Remote Pilot Certificate currency requirements, faa.gov/uas/commercial_operators/become_a_drone_pilot.

Demand vs. Supply

A complete regional demand–supply analysis cannot be calculated. There is no dedicated occupational projection for UAV work, the keyword query is broader than a single occupation, and the available training information does not provide comparable annual completions across programs. The 1,385 postings indicate meaningful employer use of UAV terminology, but they cannot be converted into annual job openings. Likewise, Part 107 certificate or drone-registration totals cannot be used as available labor supply because they include people with different employment status, currency, skills, locations, and intended uses.

The evidence supports cautious, employer-validated program development. Colleges should prioritize stackable modules or modifications tied to named applications—such as aviation, geographic information systems (GIS) and mapping, surveying, photography and cinematography, inspection, public safety, data analysis, sensors, and maintenance—and document which occupations, employers, and competencies each pathway serves. Before adding standalone capacity, colleges should evaluate overlap with the five existing regional offerings and obtain current employer commitments or advisory evidence.

Earnings

Of the 1,385 unique postings, 944 (68%) included advertised salary data. The median advertised wage was \$55.26 per hour, above the living wage for a single adult in San Diego County, which is \$26.01 per hour. Because the postings span multiple occupations and experience levels, the median should not be treated as a starting wage for UAV pilots or program graduates.

Exhibit 5: Median Advertised Wage Compared with the San Diego County Living Wage⁹¹⁰



⁹ Lightcast Q3 2026; Center for Women's Welfare—The Self-Sufficiency Standard for California 2024, selfsufficiencystandard.org/California.

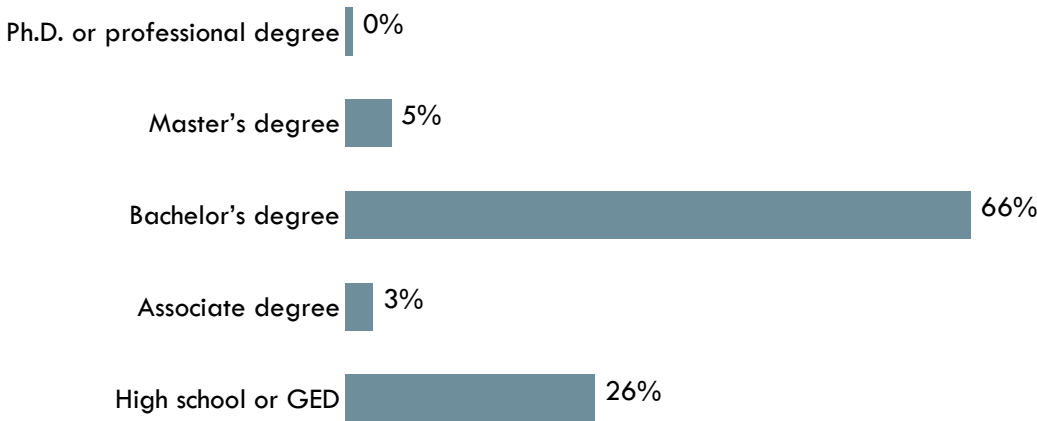
¹⁰ Lightcast wage is based on 944 postings with advertised salary observations. The living-wage benchmark is for a single adult in San Diego County.

Education, Certifications, and Skills

Expected Level of Education

Among the 947 postings that specified a minimum educational requirement, bachelor's degree was the most common minimum requirement (66%), followed by high school diploma or General Educational Development (GED) credential (26%), master's degree (5%), Associate degree (3%), and doctoral or professional degree (less than 1%).

Exhibit 6: Minimum Educational Requirements in Keyword-Matched Postings¹¹



¹¹ Lightcast Q3 2026. Percentages are among 947 postings that specified a minimum education level; 438 postings listed no education requirement. Categories are displayed from the highest to lowest credential level.

Qualifications and Certifications

The most frequently requested qualifications further demonstrate the breadth of the keyword-matched results. A drone pilot certificate was the leading credential, while security clearances and certifications from business, networking, fitness, and engineering contexts also appeared.

Exhibit 7: Top Qualifications and Certifications in Keyword-Matched Postings¹²

Qualification or Certification	Unique Postings
Drone Pilot Certificate	135
Secret Clearance	93
Security Clearance	76
Master of Business Administration (MBA)	33
Top Secret Clearance	23
Cisco Certified Network Associate (CCNA)	23
American College of Sports Medicine (ACSM) Certification	15
Pilot Licensing and Certification	15
National Institute for Certification in Engineering Technologies (NICET) Certification	14

¹² Lightcast Q3 2026. Qualifications reflect the broad keyword-matched set and should not be interpreted as a UAV-only credential profile.

Skills

UAV activity was embedded in technical and operational roles. Prominent specialized skills included artificial intelligence, computer science, robotics, software engineering, UAS knowledge, project management, and electrical engineering. C++, Python, and Microsoft Excel were the software tools meeting the reporting threshold.

Exhibit 8: In-Demand Skills in Keyword-Matched Postings¹³

Specialized Skills	Common Skills	Software Skills
Artificial Intelligence — 27%	Communication — 54%	C++ — 17%
Computer Science — 19%	Operations — 24%	Python — 17%
Robotics — 14%	Management — 24%	Microsoft Excel — 12%
Software Engineering — 13%	Leadership — 22%	
Unmanned Aerial Systems (UAS) — 12%	Problem Solving — 21%	
Project Management — 11%	Detail Oriented — 17%	
Electrical Engineering — 11%	Planning — 16%	
Software Development — 10%	Troubleshooting — 14%	
	Customer Service — 13%	
	Coordinating — 12%	
	Sales — 12%	
	Research — 11%	
	Self-Motivation — 11%	
	Verbal Communication Skills — 10%	
	Innovation — 10%	

¹³ Lightcast Q3 2026. Percentages are of 1,385 unique postings and are rounded to the nearest whole percent. Skills must populate in at least 10% of job postings to be listed.

Other LMI to Consider for Program Development

Occupations with the Highest Number of UAV-Related Postings

Exhibit 9 lists the 10 occupations with the most UAV keyword-matched postings in the full occupation export and six additional occupations requested by the college. Software Developers led with 190 postings, but these represented only an estimated 1.2% of overall posting volume. Camera Operators, Television, Video, and Film had 66 postings and the highest concentration at 17.8%, followed by Surveyors at 7.3% and Photographers at 4.5%. Absolute volume and concentration therefore tell different stories: UAV terminology appears most often in software postings but is more concentrated in camera-operation, surveying, and photography roles.

Exhibit 9: Occupations with the Highest Number of UAV Keyword-Matched Postings¹⁴

SOC and Occupation	UAV Postings	Estimated Overall Postings	Estimated UAV Share
15-1252 Software Developers	190	15,746	1.2%
27-4031 Camera Operators, Television, Video, and Film	66	371	17.8%
27-4021 Photographers	50	1,113	4.5%
15-1299 Computer Occupations, All Other	45	11,555	0.4%
17-1022 Surveyors	37	504	7.3%
17-2141 Mechanical Engineers	33	3,635	0.9%
17-2112 Industrial Engineers	29	4,905	0.6%
11-2022 Sales Managers	29	9,563	0.3%
25-2031 Secondary School Teachers, Except Special and Career/Technical Education	26	4,340	0.6%
17-2071 Electrical Engineers	25	4,215	0.6%
17-3031 Surveying and Mapping Technicians*	18	135	13.3%
19-4099 Life, Physical, and Social Science Technicians, All Other*	4	619	0.6%
53-2012 Commercial Pilots*	2	200	1.0%
19-2099 Physical Scientists, All Other*	1	1,122	0.1%
17-1021 Cartographers and Photogrammetrists*	0	4	0.0%
19-3092 Geographers*	0	7	0.0%

* Occupations added to Exhibit 9 at the college's request.

¹⁴ Lightcast Q3 2026. UAV counts are three-year unique postings. Estimated overall postings equal average monthly unique postings multiplied by 36; estimated share equals UAV postings divided by estimated overall postings. Because the measures use different deduplication periods, percentages are directional.

FAA Outlook

The FAA’s fiscal year (FY) 2026–2046 Aerospace Forecast reports 493,396 certificated remote pilots at the end of 2025 and forecasts approximately 628,600 by 2030—an increase of about 27%. This is a national forecast of certificated pilots and does not measure local employment, active job seekers, or graduates.

Certification and Currency

A Part 107 Remote Pilot Certificate is permanent unless revoked. Certificate holders must complete recurrent online training every 24 calendar months to remain current. The FAA provides recurrent training at no cost; PSI lists the initial Unmanned Aircraft General–Small knowledge-test voucher at \$175 plus applicable tax. Each Part 107 drone registration costs \$5 and is valid for three years.

Program Design Implications¹⁵

Implication	Recommended Response
UAV duties cross occupations	Map coursework to named applications and target occupations, not only “drone pilot.”
Direct UAV titles are limited	Validate hiring volume and job quality with employers before expanding capacity.
Technical skills are prominent	Pair flight operations with data, GIS, software, sensors, maintenance, and safety.
Regional training already exists	Coordinate pathways and differentiate offerings before launching a standalone program.
Regulation changes over time	Build recurrent regulatory review and industry advisory input into curriculum governance.

¹⁵ FAA Aerospace Forecast FY 2026–2046, faa.gov/data_research/aviation/aerospace_forecasts/FY_2026-2046_Full_Forecast_Document_Tables.pdf; FAA—Become a Certificated Remote Pilot, faa.gov/uas/commercial_operators/become_a_drone_pilot; PSI FAA Testing Programs, psiexams.com/faa-testing-programs/; FAA—Register Your Drone, faa.gov/uas/getting_started/register_drone.

Conclusion and Recommendation

The updated evidence does not support a precise occupational demand estimate or a calculable supply gap for UAV work. Keyword-matched posting volume remains meaningful, advertised wages compare favorably with the county living-wage benchmark, and the FAA forecasts continued national growth in certificated remote pilots. At the same time, 2025 postings declined, direct UAV titles were limited, regional training is already available, and the search results span many occupations.

The COE therefore recommends proceeding with caution on a new standalone UAV program while supporting modifications that add employer-validated UAV competencies to existing programs. Before expanding capacity, colleges should document target occupations, obtain current employer commitments or advisory evidence, identify how the curriculum differs from existing offerings, and establish measurable outcomes beyond Part 107 test preparation.

Appendix A: Keyword Search Methodology and Terms

Lightcast’s keyword search uses Boolean operators to combine exact phrases and standalone terms. Quotation marks were retained for multiword phrases so the words would be searched together; OR was used to return postings containing any listed term. The search included all newly posted advertisements from non-staffing companies in San Diego County, regardless of salary or experience, and included internships.

UAV Keyword Terms Used in the Lightcast Search¹⁶¹⁷

Keyword or Exact Phrase	Keyword or Exact Phrase
aerial cinematography	UAS pilot
autonomous pilot	UAS technician
drone	UAV mechanic
drone operations	UAV operator
drone operator	UAV pilot
drone photography	UAV Pilot and Data Analyst
drone pilot	UAV Sensor Integration Technician
drone pilot and data analyst	UAV technician
drone technician	unmanned aerial system operator
drone videographer	unmanned aerial system pilot
Fixed Wing UAS operator	unmanned aerial vehicle operator
Fixed Wing UAS pilot	unmanned aerial vehicle pilot
part 107 pilot	unmanned aircraft system operator
Remote Pilot in Charge	unmanned aircraft system pilot
Remote Pilot in Command	unmanned aircraft vehicle operator
sUAS	unmanned aircraft vehicle pilot
UAS mechanic	visual observer
UAS Operator	

¹⁶ Lightcast keyword-search guidance: How to Use Keyword Search, kb.lightcast.io/en/articles/6957474-how-to-use-keyword-search.

¹⁷ Search parameters: January 2023–December 2025; San Diego County, California; non-staffing companies; newly posted advertisements; all salary and experience levels; internships included.

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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.