



Labor Market Analysis for Program Recommendation

Aerial Remote Sensing and Photogrammetry

Occupations

Santa Rosa Junior College

Prepared by the San Francisco Bay Center of Excellence for Labor Market Research
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Recommendation

Based on all available data, there appears to be an “undersupply” of Aerial Remote Sensing and Photogrammetry workers compared to the demand for this cluster of occupations in the Bay region and in the North Bay sub-region (Marin, Napa, Solano, Sonoma counties). There is a projected annual gap of about 288 students in the Bay region and 28 students in the North Bay Sub-Region.

Introduction

This report provides student outcomes data on employment and earnings for TOP 0957.30 - Surveying programs in the state and region. It is recommended that these data be reviewed to better understand how outcomes for students taking courses on this TOP code compare to potentially similar programs at colleges in the state and region, as well as to outcomes across all CTE programs at Santa Rosa Junior College and in the region.

This report profiles Aerial Remote Sensing and Photogrammetry Occupations in the 12 county Bay region and in the North Bay sub-region for a proposed new program at Santa Rosa Junior College.

- **Surveyors (17-1022):** Make exact measurements and determine property boundaries. Provide data relevant to the shape, contour, gravitation, location, elevation, or dimension of land or land features on or near the earth’s surface for engineering, mapmaking, mining, land evaluation, construction, and other purposes.
Entry-Level Educational Requirement: Bachelor’s degree
Training Requirement: Internship/residency
Percentage of Community College Award Holders or Some Postsecondary Coursework: 24%
- **Surveying and Mapping Technicians (17-3031):** Perform surveying and mapping duties, usually under the direction of an engineer, surveyor, cartographer, or photogrammetrist to obtain data used for construction, mapmaking, boundary location, mining, or other purposes. May calculate mapmaking information and create maps from source data, such as surveying notes, aerial photography, satellite data, or other maps to show topographical features, political boundaries, and other features. May verify accuracy and completeness of maps. Excludes “Surveyors” (17-1022), “Cartographers and Photogrammetrists” (17-1021), and “Geoscientists, Except Hydrologists and Geographers” (19-2042).
Entry-Level Educational Requirement: High school diploma or equivalent
Training Requirement: Moderate-term on-the-job training
Percentage of Community College Award Holders or Some Postsecondary Coursework: 54%

Occupational Demand

Table 1. Employment Outlook for Aerial Remote Sensing and Photogrammetry Occupations in Bay Region

Occupation	2020 Jobs	2025 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Surveyors	1,226	1,262	35	3%	649	130	\$37	\$47
Surveying and Mapping Technicians	1,205	1,258	53	4%	889	178	\$24	\$35
Total	2,431	2,520	89	4%	1,538	308		

Source: EMSI 2022.3

Bay Region includes: Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties

Table 2. Employment Outlook for Aerial Remote Sensing and Photogrammetry Occupations in North Bay Sub-region

Occupation	2020 Jobs	2025 Jobs	5-yr Change	5-yr % Change	5-yr Total Openings	Annual Openings	25% Hourly Earning	Median Hourly Wage
Surveyors	163	195	32	20%	114	23	\$33	\$42
Surveying and Mapping Technicians	163	172	9	5%	127	25	\$22	\$28
Total	326	367	41	12%	241	48		

Source: EMSI 2022.3

North Bay Sub-Region includes: Marin, Napa, Solano, Sonoma Counties

Job Postings in Bay Region and North Bay Sub-Region

Table 3. Number of Job Postings by Occupation for latest 12 months (Nov. 2021 – Oct. 2022)

Occupation	Bay Region	North Bay
Surveyors	474	79
Mapping Technicians	109	8
Surveying Technicians	107	10

Source: Burning Glass

Table 4a. Top Job Titles for Aerial Remote Sensing and Photogrammetry Occupations for latest 12 months (Nov. 2021 – Oct. 2022) - Bay Region

Title	Bay	Title	Bay
Project Surveyor	40	Independent Field Surveyor	11
Professional Land Surveyor	33	Land Surveyor - Civil3D	11
Solar Site Surveyor	28	Licensed Land Surveyor, Pls ,	10
Land Surveyor	25	Project Surveyor Land Surveying	10
Site Surveyor	25	Senior Project Surveyor Land Surveying	10
Licensed Land Surveyor Remote	22	Land Survey Technician ,	9
Site Survey Technician	20	Solar Site Survey Technician	9
Surveyor	19	Survey Technician	8
Survey Party Chief	18	Licensed Land Surveyor	7

Source: Burning Glass

Table 4b. Top Job Titles for Aerial Remote Sensing and Photogrammetry Occupations for latest 12 months (Nov. 2021 – Oct. 2022) North Bay Sub-Region

Title	North Bay	Title	North Bay
Land Surveyor	8	Project Land Surveyor	3
Project Surveyor	7	Site Survey Technician	3
Site Surveyor	7	Associate/Deputy Surveyor	2
Solar Site Surveyor	7	Field Crew	2
Land Surveyor Technician	6	Project Surveyor Land Surveying	2
Licensed Land Surveyor Remote	4	Senior Project Surveyor	2
Licensed Land Surveyor	3	Surveyor	2
Monitoring And Gis Manager	3	Surveyor/ Licensed Land Surveyor	2
Professional Land Surveyor	3		

Source: Burning Glass

Industry Concentration

Table 5. Industries hiring Aerial Remote Sensing and Photogrammetry Workers in Bay Region

Industry - 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2020)	Jobs in Industry (2025)	% Change (2020-25)	% Occupation Group in Industry (2020)
Architectural Services	674	650	-4%	30%
Engineering Services	606	616	2%	27%
Local Government, Excluding Education and Hospitals	170	168	-1%	7%
Landscape Architectural Services	135	132	-2%	6%
Surveying and Mapping (except Geophysical) Services	105	127	21%	6%
Building Inspection Services	63	72	14%	3%
Natural Gas Distribution	57	65	13%	3%
Custom Computer Programming Services	10	39	287%	2%
Federal Government, Military	24	25	2%	1%
All Other Support Services	20	26	35%	1%

Source: EMSI 2022.3

Table 6. Top Employers Posting Aerial Remote Sensing and Photogrammetry Occupations in Bay Region and North Bay Sub-Region (Nov. 2021 – Oct. 2022)

Employer	Bay	Employer	North Bay
Bkf Engineers	37	Bkf Engineers	7
Aei Consultants	16	La Stevens Associates Inc.	6
Six Flags Incorporated	13	County Sonoma	5
Tesla	12	Six Flags Incorporated	4
Solar Optimum	12	Sunrun	3
Sunrun	11	Solar Optimum	3

Source: Burning Glass

Educational Supply

There is one (1) community college in the Bay Region and North Bay Sub-Region issuing 20 awards on average annually (last 3 years ending 2019-20) on TOP 0957.30 - Surveying.

Table 7. Community College Awards on TOP 0957.30 - Surveying in Bay Region

College	Subregion	Associate Degree	Low unit Certificate	Total
Santa Rosa	North Bay	9	11	20
Total		9	11	20

Source: Data Mart

Note: The annual average for awards is 2017-18 to 2019-20.

Gap Analysis

Based on the data included in this report, there is a labor market gap in the Bay region with 308 annual openings for the Aerial Remote Sensing and Photogrammetry occupational cluster and 20 annual (3-year average) awards for an annual undersupply of 288 students. In the North Bay Sub-Region, there is a small gap with 48 annual openings and 20 annual (3-year average) awards for an annual undersupply of 28 students.

Student Outcomes

Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0957.30 - Surveying

Metric Outcomes	Bay All CTE Programs	SRJC All CTE Programs	State 0957.30	Bay 0957.30	North Bay 0957.30	SRJC 0957.30
Students with a Job Closely Related to Their Field of Study	74%	74%	83%	75%	N/A	N/A
Median Annual Earnings for SWP Exiting Students	\$47,419	\$42,405	\$60,370	\$64,899	\$64,261	\$64,261
Median Change in Earnings for SWP Exiting Students	23%	29%	47%	22%	64%	64%
Exiting Students Who Attained the Living Wage	52%	58%	80%	82%	93%	93%

Source: Launchboard Strong Workforce Program Median of 2017 to 2020.

Skills, Certifications and Education

Table 9. Top Skills for Aerial Remote Sensing and Photogrammetry Occupations in Bay Region (Nov. 2021 – Oct. 2022)

Skill	Posting	Skill	Posting
Land Survey	328	Staff Management	73
AutoCAD	210	Geographic Information System (GIS)	70
Civil 3D	185	Autodesk	56
Project Management	165	Personal Protective Equipment (PPE)	49

Surveys	165	Computer Aided Drafting/Design (CAD)	46
Global Positioning System (GPS)	160	Land Development	46
Scheduling	159	Unmanned Aerial Systems (UAS)	46
Field Surveys	139	3D Modeling / Design	45
Topographic Surveys	132	Site Surveys	43
Calculation	131	Solar Systems	42
Customer Service	121	Survey Instruments	41
Civil Engineering	96	Hand Tools	40
Budgeting	73	Robotics	40
Customer Contact	73	Geometry	38

Source: Burning Glass

Table 10. Certifications for Aerial Remote Sensing and Photogrammetry Occupations in Bay Region (Nov. 2021 – Oct. 2022)

Certification	Posting	Certification	Posting
Driver's License	250	Engineer in Training Certification	5
Licensed Professional Surveyor	175	Civil Service Certification	4
Occupational Safety and Health Administration Certification	30	AutoCAD Certification	4
Civil Engineering Certificate	26	American Board for Engineering and Technology (ABET) Accredited	4
Cdl Class C	14	L.S. Certificate	3
Licensed Professional Engineer	6	Information Technology Certification	3
SANS/GIAC Certification	5	Pilot Certification	2
Personal Fitness Trainer Certification	5	Certified Survey Technician (CST)	2
GIAC Information Security Professional (GISP)	5	Business License	2

Source: Burning Glass

Note: 43% of records have been excluded because they do not include a certification. As a result, the chart above may not be representative of the full sample.

Table 11. Education Requirements for Aerial Remote Sensing and Photogrammetry Occupations in Bay Region

Education (minimum advertised)	Latest 12 Mos. Postings	Percent 12 Mos. Postings
High school or vocational training	154	49%
Associate's degree	18	6%
Bachelor's degree and higher	141	45%

Source: Burning Glass

Note: 55% of records have been excluded because they do not include a degree level. As a result, the chart above may not be representative of the full sample.

Methodology

Occupations for this report were identified by use of skills listed in O*Net descriptions and job descriptions in Burning Glass. Labor demand data is sourced from Economic Modeling Specialists International (EMSI) occupation data and Burning Glass job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CTE Launchboard and CCCCO Data Mart.

Sources

O*Net Online

Labor Insight/Jobs (Burning Glass)

Economic Modeling Specialists International (EMSI)

CTE LaunchBoard www.calpassplus.org/Launchboard/

Statewide CTE Outcomes Survey

Employment Development Department Unemployment Insurance Dataset

Living Insight Center for Community Economic Development

Chancellor's Office MIS system

Contacts

For more information, please contact:

- Leila Jamoosian, Research Analyst, for Bay Area Community College Consortium (BACCC) and Centers of Excellence (CoE), leila@baccc.net
- John Carrese, Director, San Francisco Bay Center of Excellence for Labor Market Research, jcarrese@ccsf.edu or (415) 267-6544