

**Labor Market Analysis for Program Recommendation**

**HVACR Occupations**

**Santa Rosa Junior College**

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

## November 2023

## Recommendation

Based on all available data, there appears to be an “undersupply” of Heating, Ventilation, Air Conditioning, and Refrigeration **(**HVACR) 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 873 students in the Bay region and 180 students in the North Bay Sub-Region.

## Introduction

This report provides student outcomes data on employment and earnings for TOP 0946.00 - Environmental Control Technology 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 HVACR Occupations in the 12 county Bay region and in the North Bay sub-region for a proposed new HVACR Fundamentals program at Santa Rosa Junior College.

* **Heating, Air Conditioning, and Refrigeration Mechanics and Installers (49-9021):** Install or repair heating, central air conditioning, or refrigeration systems, including oil burners, hot-air furnaces, and heating stoves.  
    Entry-Level Educational Requirement: Postsecondary nondegree award  
    Training Requirement: Long-term on-the-job training  
    Percentage of Community College Award Holders or Some Postsecondary Coursework: 43%

## Occupational Demand

**Table 1. Employment Outlook for HVACR Occupations in Bay Region**

| **Occupation** | **2021 Jobs** | **2026 Jobs** | **5-yr Change** | **5-yr % Change** | **5-yr Total Openings** | **Annual Openings** | **25% Hourly Earning** | **Median Hourly Wage** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heating, Air Conditioning, and Refrigeration Mechanics and Installers | 8,911 | 9,535 | 624 | 7% | 4,978 | 996 | $23 | $31 |
| **Total** | **8,911** | **9,535** | **624** | **7%** | **4,978** | **996** | **$23** | **$31** |
| Source: Lightcast 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 HVACR Occupations in North Bay Sub-region**

| **Occupation** | **2021 Jobs** | **2026 Jobs** | **5-yr Change** | **5-yr % Change** | **5-yr Total Openings** | **Annual Openings** | **25% Hourly Earning** | **Median Hourly Wage** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Heating, Air Conditioning, and Refrigeration Mechanics and Installers | 1,548 | 1,685 | 137 | 9% | 900 | 180 | $22 | $28 |
| **Total** | **1,548** | **1,685** | **137** | **9%** | **900** | **180** | **$22** | **$28** |
| Source: Lightcast 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. 2022 - Oct. 2023)**

| **Occupation** | **Bay Region** | **North Bay** |
| --- | --- | --- |
| Heating, Air Conditioning, and Refrigeration Mechanics and Installers | 2,097 | 380 |
| Source: Lightcast | | |

**Table 4a. Top Job Titles for HVACR Occupations for latest 12 months (Nov. 2022 - Oct. 2023) - Bay Region**

| **Title** | **Bay** | **Title** | **Bay** |
| --- | --- | --- | --- |
| HVAC Technicians | 176 | Appliance Service Technicians | 33 |
| HVAC Service Technicians | 145 | Mechanics | 32 |
| Service Technicians | 121 | Commercial HVAC Technicians | 31 |
| HVAC Installers | 106 | Refrigeration and Appliance Repair Technicians | 31 |
| HVAC/Refrigeration Service Technicians | 78 | HVAC Project Managers | 28 |
| Commercial Refrigeration Service Technicians | 63 | Power Technicians | 28 |
| Refrigeration Technicians | 60 | Field Technicians | 26 |
| Lead HVAC Technicians | 36 | Fleet Technicians | 26 |
| Lead HVAC Service Technicians | 35 | HVAC Mechanics | 25 |
| Source: Lightcast | | | |

**Table 4b. Top Job Titles for HVACR Occupations for latest 12 months (Nov. 2022 - Oct. 2023) - North Bay Sub-Region**

| **Title** | **North Bay** | **Title** | **North Bay** |
| --- | --- | --- | --- |
| HVAC Installers | 37 | HVAC Refrigeration Technicians | 8 |
| HVAC Technicians | 29 | Refrigeration and Appliance Repair Technicians | 8 |
| Power Technicians | 28 | Appliance Service Technicians | 7 |
| HVAC/Refrigeration Service Technicians | 26 | Plumbing Technicians | 7 |
| HVAC Service Technicians | 24 | Boiler Service Technicians | 6 |
| Mechanics | 15 | Commercial Refrigeration Service Technicians | 6 |
| Service Technicians | 15 | Facilities Mechanics | 6 |
| Refrigeration Technicians | 14 | Fleet Technicians | 6 |
| Lead HVAC Technicians | 9 | Building Mechanics | 5 |
| Source: Lightcast | | | |

## Industry Concentration

**Table 5. Industries hiring HVACR Workers in Bay Region**

| **Industry - 6 Digit NAICS (No. American Industry Classification) Codes** | **Jobs in Industry (2021)** | **Jobs in Industry (2026)** | **% Change (2021-26)** | **% Occupation Group in Industry (2022)** |
| --- | --- | --- | --- | --- |
| Plumbing, Heating, and Air-Conditioning Contractors | 6,342 | 7,330 | 16% | 70% |
| Residential Remodelers | 244 | 264 | 8% | 3% |
| Electrical Contractors and Other Wiring Installation Contractors | 192 | 209 | 9% | 2% |
| Natural Gas Distribution | 138 | 157 | 14% | 2% |
| Local Government, Excluding Education and Hospitals | 101 | 115 | 15% | 1% |
| Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance | 101 | 103 | 2% | 1% |
| New Single-Family Housing Construction (except For-Sale Builders) | 102 | 97 | -5% | 1% |
| All Other Specialty Trade Contractors | 89 | 81 | -9% | 1% |
| Colleges, Universities, and Professional Schools (State Government) | 75 | 83 | 12% | 1% |
| Temporary Help Services | 62 | 66 | 5% | 1% |
| Source: Lightcast 2022.3 | | | | |

**Table 6. Top Employers Posting HVACR Occupations in Bay Region and North Bay Sub-Region (Nov. 2022 - Oct. 2023)**

| **Employer** | **Bay** | **Employer** | **North Bay** |
| --- | --- | --- | --- |
| Coolsys | 99 | Coolsys | 31 |
| GPAC | 59 | Blue Mountain Air Incorporated | 15 |
| Blue Mountain Air Incorporated | 43 | Transdev | 14 |
| EMCOR Group | 36 | The Estate Yountville | 12 |
| Service Experts | 35 | Gene Burch Plumbing Heating and Air | 10 |
| Aerotek | 34 | John Owens Services | 10 |
| Source: Lightcast | | | |

## Educational Supply

There are five (5) community colleges in the Bay Region issuing 123 awards on average annually (last 3 years ending 2021-22) on TOP 0946.00 - Environmental Control Technology. In the North Bay Sub-Region, there are no community colleges that issued awards on average annually (last 3 years) on this TOP code.

**Table 7a. Community College Awards on TOP 0946.00 - Environmental Control Technology in Bay Region**

| **College** | **Subregion** | **Associate Degree** | **High unit Certificate** | **Low unit Certificate** | **Total** |
| --- | --- | --- | --- | --- | --- |
| Gavilan | Silicon Valley | 1 | 0 | 3 | 4 |
| Laney | East Bay | 6 | 4 | 18 | 28 |
| Mission | Silicon Valley | 0 | 8 | 0 | 8 |
| San Francisco | Mid-Peninsula | 0 | 0 | 9 | 9 |
| San Jose City | Silicon Valley | 8 | 20 | 46 | 74 |
| **Total** |  | **15** | **32** | **76** | **123** |
| Source: Data Mart | | | | | |
| Note: The annual average for awards is 2019-20 to 2021-22. | | | | | |

## Gap Analysis

Based on the data included in this report, there is a labor market gap in the Bay region with 996 annual openings for the HVACR occupational cluster and 123 annual (3-year average) awards for an annual undersupply of 873 students. In the North Bay Sub-Region, there is also a gap with 180 annual openings and no annual (3-year average) awards for an annual undersupply of 180 students.

## Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0946.00 - Environmental Control Technology**

| **Metric Outcomes** | **Bay All CTE Programs** | **SRJC All CTE Programs** | **State 0946.00** | **Bay 0946.00** | **North Bay 0946.00** | **SRJC 0946.00** |
| --- | --- | --- | --- | --- | --- | --- |
| Students with a Job Closely Related to Their Field of Study | 74% | 76% | 80% | 83% | N/A | N/A |
| Median Annual Earnings for SWP Exiting Students | $53,090 | $46,746 | $47,428 | $68,006 | $132,996 | $132,996 |
| Median Change in Earnings for SWP Exiting Students | 24% | 31% | 28% | 37% | 123% | 123% |
| Exiting Students Who Attained the Living Wage | 54% | 61% | 66% | 66% | 100% | 100% |
| Source: Launchboard Strong Workforce Program Median of 2018 to 2021. | | | | | | |

## Skills, Certifications and Education

**Table 9. Top Skills for HVACR Occupations in Bay Region (Nov. 2022 - Oct. 2023)**

| **Skill** | **Posting** | **Skill** | **Posting** |
| --- | --- | --- | --- |
| HVAC | 1,853 | Electrical Wiring | 169 |
| Preventive Maintenance | 466 | Furnaces | 168 |
| Plumbing | 431 | Technical Training | 147 |
| Boilers | 288 | Carpentry | 145 |
| Ventilation | 267 | Electrical Systems | 132 |
| Refrigerant | 243 | Painting | 132 |
| Hand Tools | 242 | Wiring Diagram | 132 |
| Refrigeration | 180 | Equipment Repair | 131 |
| Construction | 173 | Building Automation | 127 |
| Power Tool Operation | 173 | Roofing | 127 |
| Source: Lightcast | | | |

**Table 10. Certifications for HVACR Occupations in Bay Region (Nov. 2022 - Oct. 2023)**

| **Certification** | **Posting** | **Certification** | **Posting** |
| --- | --- | --- | --- |
| Valid Driver's License | 1,067 | CDL Class C License | 31 |
| EPA 608 Technician Certification | 375 | Commercial Driver's License (CDL) | 24 |
| EPA Universal Certification | 156 | Forklift Certification | 22 |
| HVAC Certification | 61 | Security Clearance | 16 |
| NATE Certification (North American Technician Excellence) | 59 | EPA Type I Certification | 15 |
| 10-Hour OSHA General Industry Card | 54 | Contractor License | 8 |
| CFC Refrigeration Certification | 50 | Aerial Lift Certification | 7 |
| EPA Type II Certification | 49 | Certified Industrial Refrigeration Operator (CIRO) Certification | 7 |
| Source: Lightcast | | | |

**Table 11. Education Requirements for HVACR Occupations in Bay Region**

| **Education Level** | **Job Postings** | **% of Total** |
| --- | --- | --- |
| High school or GED | 833 | 79% |
| Associate Degree | 102 | 10% |
| Bachelor's degree & higher | 119 | 11% |
| Source: Lightcast | | |
| 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 job descriptions and skills listed in O\*Net. Labor demand data is sourced from Lightcast occupation and job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CCCCO Data Mart and CTE Launchboard.

## Sources

O\*Net Online  
Lightcast  
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:

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