

**Labor Market Information Report**

**Water and Wastewater Occupations**

**Gavilan College**

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

### March 2023

## Recommendation

Based on all available data, there appears to be an “undersupply” of Water and Wastewater workers compared to the demand for this cluster of occupations in the Bay region, the SC-Monterey sub-region (Monterey, San Benito, Santa Cruz counties) and the Silicon Valley sub-region (Santa Clara county). There is a projected annual gap of about 118 students in the Bay region, 19 students in the SC-Monterey sub-region and 21 students in the Silicon Valley sub-region.

## Introduction

This report provides student outcomes data on employment and earnings for TOP 0958.00 - Water and Wastewater 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 Gavilan College and in the region.

This report profiles Water and Wastewater Occupations in the 12 county Bay region and the SC-Monterey sub-region for an existing low unit, local Water Environmental certificate at Gavilan College, for state chaptering.

* **Water and Wastewater Treatment Plant and System Operators (51-8031):** Operate or control an entire process or system of machines, often through the use of control boards, to transfer or treat water or wastewater.  
    Entry-Level Educational Requirement: High school diploma or equivalent  
    Training Requirement: Long-term on-the-job training  
    Percentage of Community College Award Holders or Some Postsecondary Coursework: 42%

## Occupational Demand

**Table 1. Employment Outlook for Water and Wastewater 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** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Water and Wastewater Treatment Plant and System Operators | 1,893 | 1,881 | -12 | -1% | 879 | 176 | $34 | $44 |
| **Total** | **1,893** | **1,881** | **-12** | **-1%** | **879** | **176** | **$34** | **$44** |
| 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 Water and Wastewater Occupations in SC-Monterey 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** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Water and Wastewater Treatment Plant and System Operators | 188 | 187 | -1 | -0% | 94 | 19 | $30 | $37 |
| **Total** | **188** | **187** | **-1** | **0%** | **94** | **19** | **$30** | **$37** |
| Source: Lightcast 2022.3 | | | | | | | | |
| **SC-Monterey Sub-Region includes:** Monterey, San Benito, Santa Cruz Counties | | | | | | | | |

**Table 3. Employment Outlook for Water and Wastewater Occupations in Silicon Valley 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** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Water and Wastewater Treatment Plant and System Operators | 378 | 383 | 5 | 1% | 190 | 38 | $36 | $47 |
| **Total** | **378** | **383** | **5** | **1%** | **190** | **38** | **$36** | **$47** |
| Source: Lightcast 2022.3 | | | | | | | | |
| **SC-Monterey Sub-Region includes:** Monterey, San Benito, Santa Cruz Counties | | | | | | | | |

### Job Postings in Bay Region and SC-Monterey Sub-Region

**Table 4. Number of Job Postings by Occupation for latest 12 months (Feb. 2022 - Jan. 2023)**

| **Occupation** | **Bay Region** | **SC-Monterey** |
| --- | --- | --- |
| Water and Wastewater Treatment Plant and System Operators | 260 | 27 |
| Source: Lightcast | | |

**Table 5a. Top Job Titles for Water and Wastewater Occupations for latest 12 months (Feb. 2022 - Jan. 2023) Bay Region**

| **Title** | **Bay** | **Title** | **Bay** |
| --- | --- | --- | --- |
| Wastewater Operators | 38 | Water Treatment Technicians | 8 |
| Wastewater Treatment Operators | 22 | System Operators | 7 |
| Water Treatment Operators | 20 | SCADA Specialists | 6 |
| Water Technicians | 15 | Water Treatment Specialists | 6 |
| Water/Wastewater Operators | 15 | Water Operators | 5 |
| Wastewater Treatment Plant Operators | 14 | Fuel Distribution System Workers | 4 |
| Water Treatment Plant Operators | 14 | Systems Monitors | 4 |
| Wastewater Technicians | 11 | Treatment Managers | 4 |
| Wastewater Plant Operators | 10 | Treatment Specialists | 4 |
| Source: Lightcast | | | |

**Table 5b. Top Job Titles for Water and Wastewater Occupations for latest 12 months (Feb. 2022 - Jan. 2023) SC-Monterey Sub-Region**

| **Title** | **SC-Monterey** | **Title** | **SC-Monterey** |
| --- | --- | --- | --- |
| Systems Monitors | 4 | Water Treatment Operators | 2 |
| Wastewater Operators | 4 | Treatment Specialists | 1 |
| Wastewater Plant Operators | 4 | Wastewater Treatment Plant Operators | 1 |
| Water/Wastewater Operators | 3 | Water Systems Technicians | 1 |
| Sanitors | 2 | Water Technicians | 1 |
| System Operators | 2 | Water Treatment Specialists | 1 |
| Source: Lightcast | | | |

## Industry Concentration

**Table 6. Industries hiring Water and Wastewater 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)** |
| --- | --- | --- | --- | --- |
| Local Government, Excluding Education and Hospitals | 1,464 | 1,479 | 1% | 78% |
| Water Supply and Irrigation Systems | 201 | 142 | -29% | 9% |
| Steam and Air-Conditioning Supply | 16 | 57 | 258% | 2% |
| Solid Waste Landfill | 24 | 20 | -14% | 1% |
| Federal Government, Military | 17 | 18 | 2% | 1% |
| Sewage Treatment Facilities | 14 | 14 | -3% | 1% |
| Source: Lightcast 2022.3 | | | | |

**Table 7. Top Employers Posting Water and Wastewater Occupations in Bay Region and SC-Monterey Sub-Region (Feb. 2022 - Jan. 2023)**

| **Employer** | **Bay** | **Employer** | **SC-Monterey** |
| --- | --- | --- | --- |
| Transdev | 23 | University of California | 6 |
| Clean Harbors | 14 | American Water Works | 4 |
| City Of Vallejo | 7 | City Of Santa Cruz | 3 |
| CyberCoders | 6 | Transdev | 3 |
| PG&E | 6 | American Water Technology | 1 |
| University of California | 6 | Army National Guard | 1 |
| East Bay Municipal Utility District | 5 | City Of Scotts Valley | 1 |
| American Water Works | 4 | Clean Water Systems & Stores | 1 |
| Bracewell Engineering | 4 | National Computing Group | 1 |
| City San Jose | 4 | Santa Lucia Preserve | 1 |
| Source: Lightcast | | | |

## Educational Supply

There are three (3) community colleges in the Bay Region issuing 58 awards on average annually (last 3 years ending 2019-20) on TOP 0958.00 - Water and Wastewater Technology.

In the **SC-Monterey Sub-Region**, there are no community colleges that issued awards on average annually (last 3 years) on this TOP code. In the **Silicon Valley Sub-Region**, there is one (1) community college (Gavilan) that issued 17 awards on average annually (last 3 years) on this TOP code.

The awards data for both sub-regions is provided since Gavilan’s service area does encompass southern Santa Clara County and most of San Benito County. The State Chancellor’s Office has assigned Gavilan to the Silicon Valley (Santa Clara County) sub-region.

**Table 8. Community College Awards on TOP 0958.00 - Water and Wastewater Technology in Bay Region**

| **College** | **Subregion** | **Associate Degree** | **High unit Certificate** | **Low unit Certificate** | **Total** |
| --- | --- | --- | --- | --- | --- |
| Gavilan | Silicon Valley | 9 | 0 | 8 | 17 |
| Santa Rosa | North Bay | 4 | 0 | 22 | 26 |
| Solano | North Bay | 10 | 4 | 1 | 15 |
| **Total** |  | **23** | **4** | **31** | **58** |
| 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 176 annual openings for the Water Environmental occupational cluster and 58 annual (3-year average) awards for an annual undersupply of 118 students.

In the SC-Monterey Sub-Region, there is also a gap with 19 annual openings and no annual (3-year average) awards for an annual undersupply of 19 students.

In the Silicon Valley Sub-Region, when the demand for Water and Wastewater Occupations for the Silicon Valley Sub-Region is used for the gap analysis, we find 38 annual openings for the occupational cluster and 17 annual (3-year average) awards for an annual undersupply of 21 students.

## Student Outcomes

**Table 9. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0958.00 - Water and Wastewater Technology**

| **Metric Outcomes** | **Bay All CTE Programs** | **Gavilan All CTE Programs** | **State 0958.00** | **Bay 0958.00** | **SC-Monterey 0958.00** | **Gavilan 0958.00** |
| --- | --- | --- | --- | --- | --- | --- |
| Students with a Job Closely Related to Their Field of Study | 74% | 78% | 74% | 64% | N/A | 73% |
| Median Annual Earnings for SWP Exiting Students | $48,926 | $74,858 | $55,778 | $63,969 | N/A | $65,002 |
| Median Change in Earnings for SWP Exiting Students | 23% | 17% | 19% | 22% | N/A | 21% |
| Exiting Students Who Attained the Living Wage | 50% | 71% | 75% | 79% | N/A | 79% |
| Source: Launchboard Strong Workforce Program Median of 2018 to 2021. | | | | | | |

## Skills, Certifications and Education

**Table 10. Top Skills for Water and Wastewater Occupations in Bay Region (Feb. 2022 - Jan. 2023)**

| **Skill** | **Posting** | **Skill** | **Posting** |
| --- | --- | --- | --- |
| Wastewater | 140 | Supervisory Control And Data Acquisition (SCADA) | 35 |
| Sewage Treatments | 104 | Water Distribution | 35 |
| Water Treatment | 84 | Hand Tools | 34 |
| Valves (Piping) | 74 | Laboratory Testing | 34 |
| Wastewater Treatment Plant | 54 | Chemistry | 31 |
| Water Resources | 48 | Preventive Maintenance | 30 |
| Hydraulics | 41 | Pump Stations | 29 |
| Process Control | 38 | Sampling (Statistics) | 29 |
| Machinery | 36 | Housekeeping | 26 |
| Biology | 35 | Water Treatments Operation | 26 |
| Source: Lightcast | | | |

**Table 11. Certifications for Water and Wastewater Occupations in Bay Region (Feb. 2022 - Jan. 2023)**

| **Certification** | **Posting** | **Certification** | **Posting** |
| --- | --- | --- | --- |
| Operator Certification | 17 | Basic Life Support (BLS) Certification | 1 |
| CDL Class C License | 13 | CDL Class A License | 1 |
| Wastewater Operator Certification | 11 | Certified Medical Assistant | 1 |
| CDL Class B License | 9 | Commercial Driver's License (CDL) | 1 |
| Hazardous Materials Certification - Technician Level | 7 | EPA Type II Certification | 1 |
| Forklift Certification | 5 | Esthetician License | 1 |
| Professional Engineer | 3 | HAZWOPER Certification | 1 |
| Licensed Vocational Nurse (LVN) | 2 | Registered Sleep Technologist | 1 |
| Registered Nurse (RN) | 2 | Security Clearance | 1 |
| System Operator Certification | 2 | Wound Care Certification | 1 |
| Source: Lightcast | | | |

**Table 12. Education Requirements for Water and Wastewater Occupations in Bay Region**

| **Education Level** | **Job Postings** | **% of Total** |
| --- | --- | --- |
| High school or GED | 114 | 68% |
| Associate degree | 24 | 14% |
| Bachelor's degree & higher | 31 | 18% |
| Source: Lightcast | | |
| Note: 45% 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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