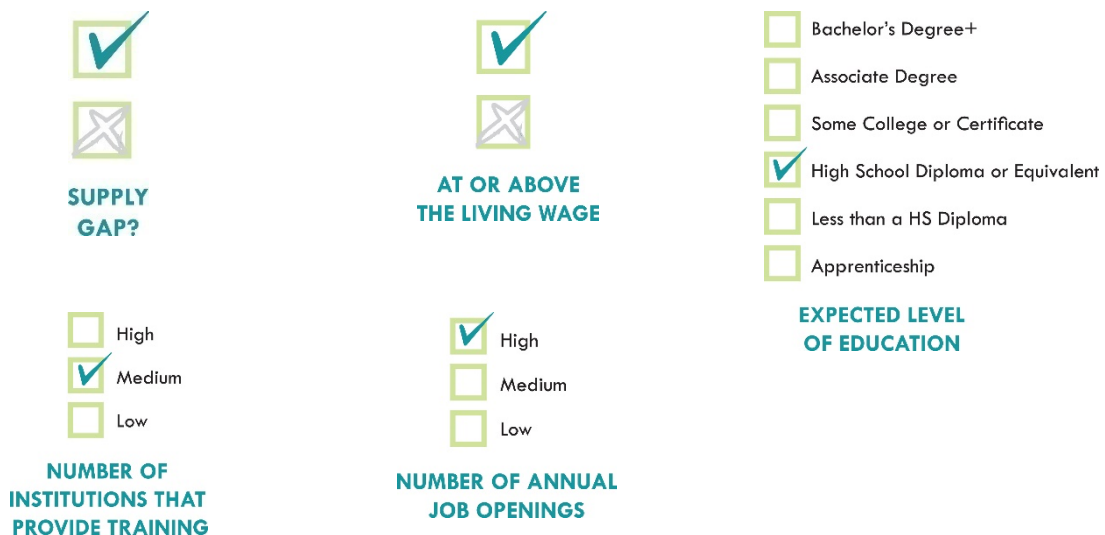


Water and Wastewater Treatment Plant and System Operators

Labor Market Analysis: Imperial County

September 2019

Summary



The brief provides labor market information about *Water and Wastewater Treatment Plant and System Operators* to assist the San Diego and Imperial Counties Community Colleges with program development, strategic planning, etc. According to available labor market information, *Water and Wastewater Treatment Plant and System Operators* have a labor market demand of 12 annual job openings, while average demand for an occupation in Imperial County is four annual job openings. One educational institution in Imperial County supplies awards for this occupation, suggesting that there is a supply gap. Comparatively, there are 1,051 annual openings in California and 442 awards. This occupation's entry-level and median wages are above the living wage. According to the California Community Colleges' outcomes data, 78 percent of students who complete programs related to *Water and Wastewater Treatment Plant and System Operators* programs earned a living wage in California, compared to 58 percent of students who complete Career Education programs in general. Additionally, the typical entry-level education for *Water and Wastewater Treatment Plant and System Operators* is a high school diploma or equivalent.

Introduction

This report provides labor market information (LMI) in Imperial County for the following occupational code in the Standard Occupational Classification (SOC)¹ system:

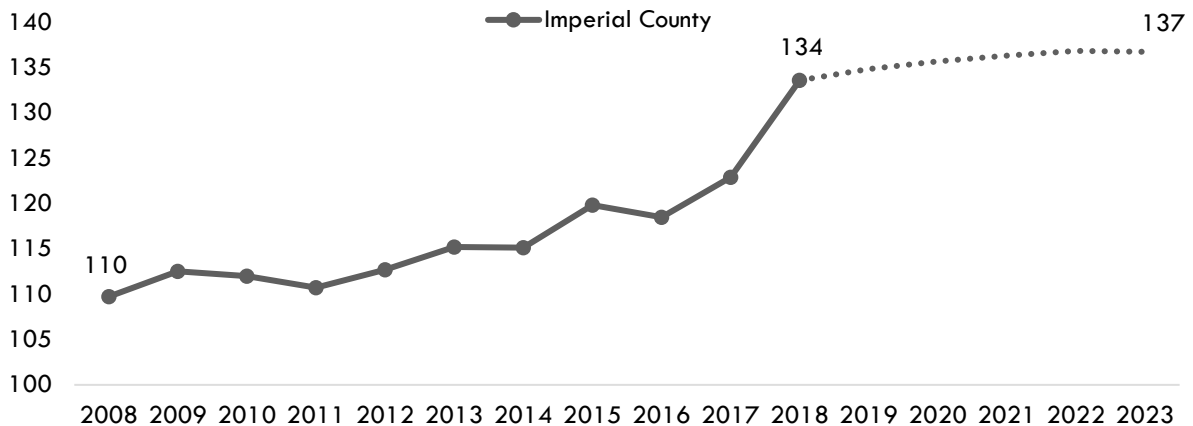
Water and Wastewater Treatment Plant and System Operators (SOC 51-8031): Operate or control an entire process or system of machines, often through the use of control boards, to transfer or treat water or wastewater. Sample reported job titles include:

- Water Treatment Plant Operator
- Water Plant Operator
- Wastewater Treatment Plant Operator
- Plant Operator
- Wastewater Plant Operator
- Wastewater Operator Water Treatment Operator
- Water System Operator
- Water Operator
- Wastewater Reclamation Facility Operator

Projected Occupational Demand

Between 2018 and 2023, *Water and Wastewater Treatment Plant and System Operators* are projected to increase by **three** net jobs or **two** percent (Exhibit 1). Employers in Imperial County will need to hire **12** workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.

Exhibit 1: Number of Jobs for Water and Wastewater Treatment Plant and System Operators (2008-2023)²



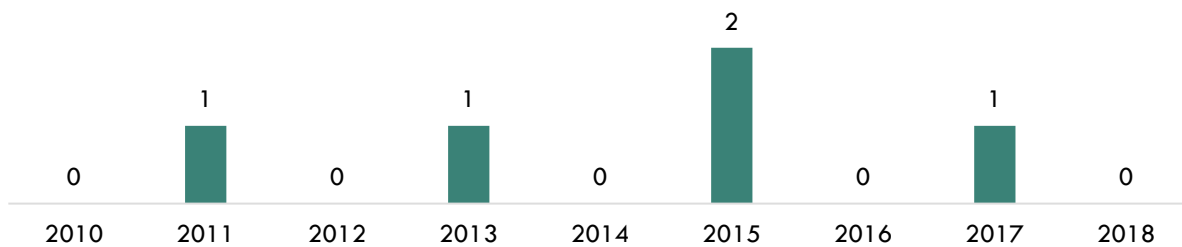
¹ The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](https://www.bls.gov/soc).

² Emsi 2019.03; QCEW, Non-QCEW, Self-Employed.

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 demand that are not captured by historical data. Between 2010 and 2018, there was an average of **one** online job posting per year for *Water and Wastewater Treatment Plant and System Operators* in Imperial County (Exhibit 2).

Exhibit 2: Number of Online Job Postings for *Water and Wastewater Treatment Plant and System Operators* in Imperial County (2010-2018)³



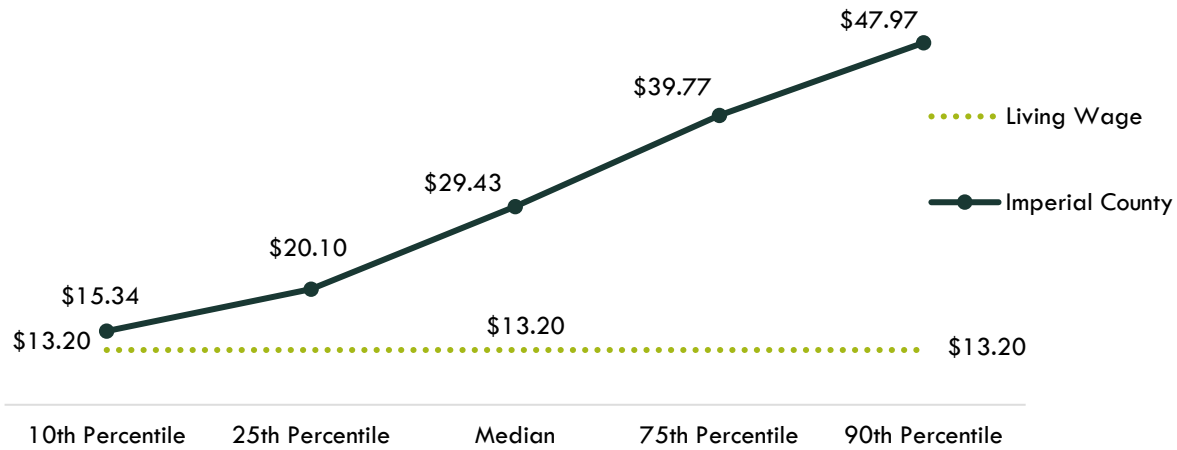
Earnings

Water and Wastewater Treatment Plant and System Operators receive median hourly earnings of **\$29.43**; this is more than the living wage for two adults and two children (school-age) in Imperial County, which is **\$13.20** per hour (Exhibit 3).⁴

³ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2010-2018.

⁴ "California Family Needs Calculator (formerly the Self-Sufficiency Standard)," Insight: Center for Community Economic Development, last updated 2018. insightccd.org/2018-self-sufficiency-standard.

Exhibit 3: Hourly Earnings⁵ for Water and Wastewater Treatment Plant and System Operators in Imperial County⁶



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.⁷ There is **one** TOP code and **one** CIP code related to *Water and Wastewater Treatment Plant and System Operators* (Exhibit 4).

Exhibit 4: Related TOP and CIP Codes for Water and Wastewater Treatment Plant and System Operators

<i>Water and Wastewater Treatment Plant and System Operators</i>
TOP 095800: Water and Wastewater Technology
CIP 15.0506: Water Quality and Wastewater Treatment Management and Recycling Technology/Technician

According to TOP data, **one** educational institution supplies the region with awards for this occupation, **Imperial Valley College**. According to CIP data, **no** non-community college supplies the region with awards (Exhibit 5).

⁵ 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.

⁶ Emsi 2019.03; QCEW, Non-QCEW, Self-Employed.

⁷ 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).

**Exhibit 5: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions
(Program Year 2013-14 through PY2016-17 Average)**

TOP6 or CIP	TOP6 or CIP Title	3-Yr Annual Average CC Awards (PY14-15 to PY16-17)	Other Educational Institutions 3-Yr Annual Average Awards (PY13-14 to PY15-16)	3-Yr Total Average Supply (PY13-14 to PY16-17)
095800	Water and Wastewater Technology	7	0	7
	• Imperial Valley	7	0	
15.0506	Water Quality and Wastewater Treatment Management and Recycling Technology/Technician	0	0	0
			Total	7

Demand vs. Supply

Comparing labor demand (annual openings) with labor supply⁸ suggests that there is a **supply gap** for this occupation in Imperial County, with **12** annual openings and **7** awards. Comparatively, there are **1,051** annual openings in California and **442** awards⁹ (Exhibit 6).

Exhibit 6: Labor Demand (Annual Openings) Compared with Labor Supply (Average Annual Awards)

Community Colleges and Other Postsecondary Educational Institutions	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or Oversupply
Imperial	12	7	5
California	1,051	442	609

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.

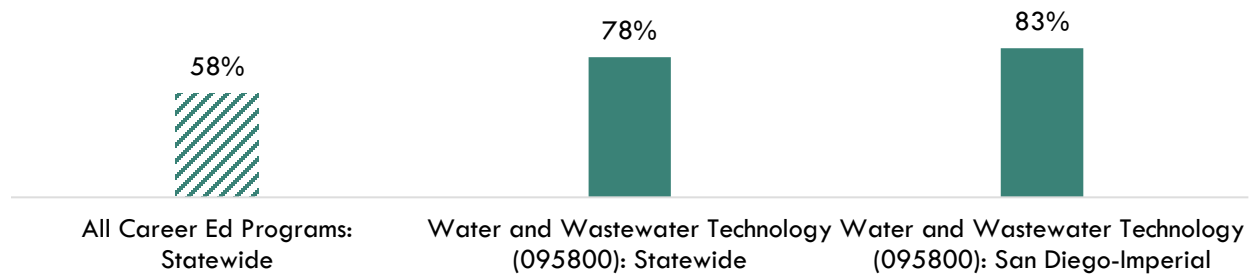
⁸ Labor supply can be found from two different sources: EMSI or the California Community Colleges Chancellor's Office MIS Data Mart. EMSI uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.

⁹ "Supply and Demand," Centers of Excellence Student Outcomes, coecc.net/Supply-and-Demand.aspx.

Student Outcomes and Regional Comparisons

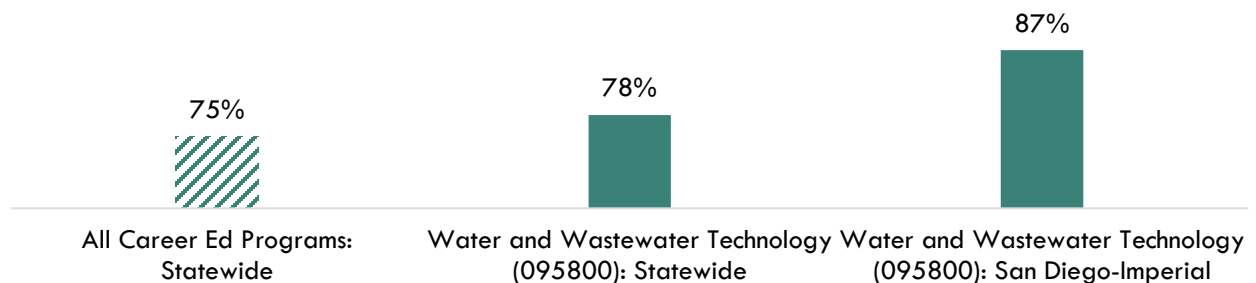
According to the California Community Colleges LaunchBoard, 78 percent of students earned a living wage in the program related to *Water and Wastewater Treatment Plant and System Operators*, compared to 58 percent of students who earned a living wage in Career Education programs across the state and 83 percent in the San Diego-Imperial region (Exhibit 7a).

Exhibit 7a: Proportion of Students Who Earned a Living Wage, PY2015-16¹⁰



According to the California Community Colleges LaunchBoard, 75 percent of students in Career Education statewide obtained a job closely related to their field of study compared to 78 percent of students from Water and Wastewater Technology (095800) across the state and 87 percent in the San Diego-Imperial region (Exhibit 7b).

Exhibit 7b: Percentage of Students in a Job Closely Related to Field of Study, PY2014-15¹¹



¹⁰ Among completers and skills builders who exited, the proportion of students who attained a living wage.

¹¹ Most recent year with available data is Program Year 2014-15. 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.

Top Employers and Work Locations

Between January 1, 2016 and December 31, 2018, the only employer in Imperial County posting online jobs for this occupation was [Ng Facility Services International](#) (Exhibit 8).

Exhibit 8: Top Employers in Imperial County for Water and Wastewater Treatment Plant and System Operators¹²

Top Employer
<ul style="list-style-type: none">Ng Facility Services International

Skills, Education, and Certifications

Exhibit 9 indicates the educational attainment for the occupation found currently in the national labor force. The typical on-the-job training for this profession is [long-term on-the-job training](#). The typical entry-level education is a [high school diploma or equivalent](#).¹³

Exhibit 9: National Educational Attainment of Water and Wastewater Treatment Plant and System Operators¹⁴

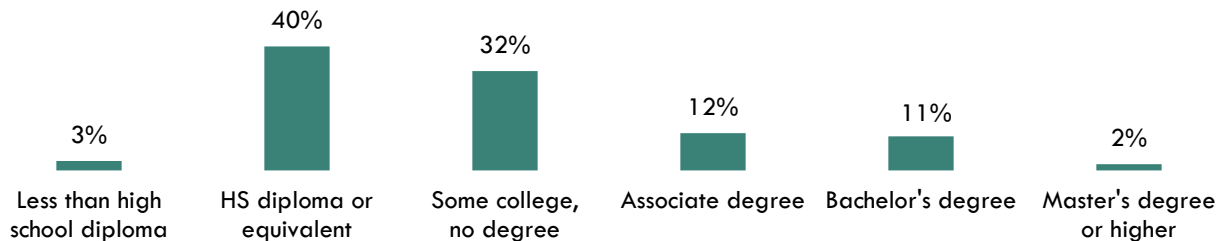


Exhibit 10 lists the top specialized, soft, and software skills that appeared in online job postings between January 1, 2016 and December 31, 2018.

¹² Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2016-2018.

¹³ Emsi 2019.03; QCEW, Non-QCEW, Self-Employed.

¹⁴ "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," Bureau of Labor Statistics, last modified October 18, 2018. bls.gov/emp/tables/educational-attainment.htm.

Exhibit 10: Top Skills for Water and Wastewater Treatment Plant and System Operators in Imperial County¹⁵

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Wastewater Treatment • Water Distribution • Water Meters • Water Testing • Water Treatment 	<ul style="list-style-type: none"> • Computer Literacy • People Management 	<ul style="list-style-type: none"> • SCADA

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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.

¹⁵ Burning Glass Technologies, “Labor Insight Real-Time Labor Market Information Tool.” 2016-2018.