

Water and Wastewater Treatment Plant and System Operators

Labor Market Analysis: Imperial County

February 2018

Summary

The following list summarizes findings from the labor market analysis below for *Water and Wastewater Treatment Plant and System Operators*:

- Between 2017 and 2022, Water and Wastewater Treatment Plant and System Operators are projected to increase by seven jobs (or seven percent) in Imperial County.
- Employers in Imperial County will need to hire 10 workers annually to fill new jobs and backfill jobs due to attrition such as retirement or turnover.
- Between 2010 and 2017, there was an average of one online job posting per year for *Water and Wastewater Treatment Plant and System Operators* in Imperial County.
- *Water and Wastewater Treatment Plant and System Operators* earn median hourly earnings of \$29.04, more than the Self-Sufficiency Standard for two adults and two children (school-age) in Imperial County, which is \$11.32 per hour.
- According to the California Community Colleges Chancellor's Office Management Information System (MIS) Data Mart, three colleges supply the region with an annual average of 92 awards for this occupation: Cuyamaca College, Imperial College, and Palomar College.
- Comparing the labor market demand against labor supply, there is an oversupply for this occupation in Imperial County, with 10 annual openings and 92 awards. Comparatively, there are 1,166 annual openings in California and 445 awards.
- Between January 1, 2015 and December 31, 2017, the top employers in Imperial County for this occupation were NG & G Facility Services International, City of Imperial and City of Brawley.
- 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.

Introduction

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

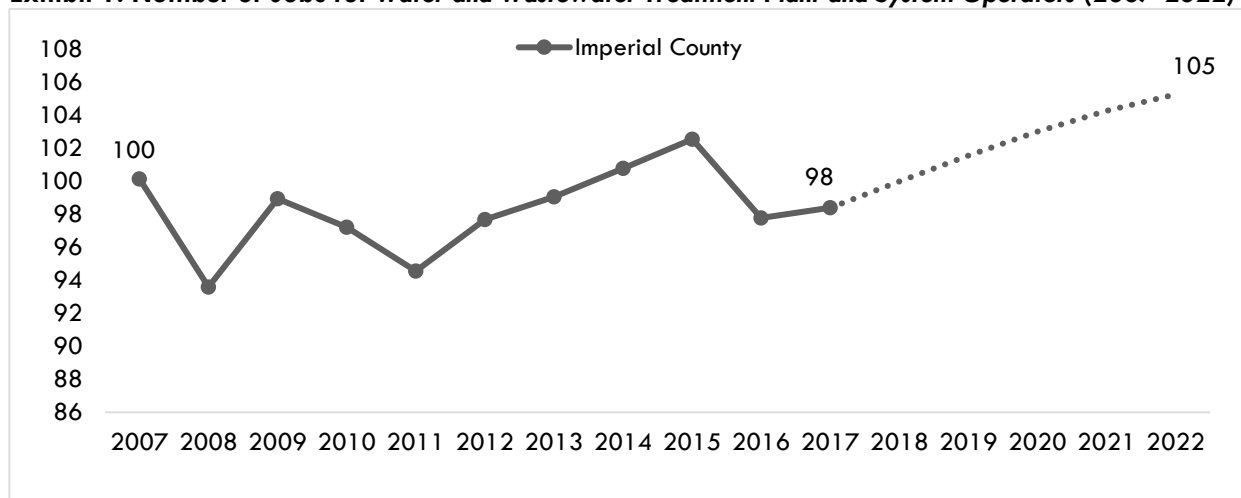
Water and Wastewater Treatment Plant and System Operators (SOC 51-8031): Operate or control an entire process or system of machines, often through the use of control boards, to transfer or treat water or wastewater. Sample reported job titles include:

- 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 2017 and 2022, *Water and Wastewater Treatment Plant and System Operators* are projected to increase by **seven** jobs (or **seven** percent) in Imperial County (Exhibit 1). Employers in Imperial County will need to hire **10** workers annually to fill new jobs and backfill jobs due to attrition such as retirement or turnover.

Exhibit 1: Number of Jobs for Water and Wastewater Treatment Plant and System Operators (2007-2022)²



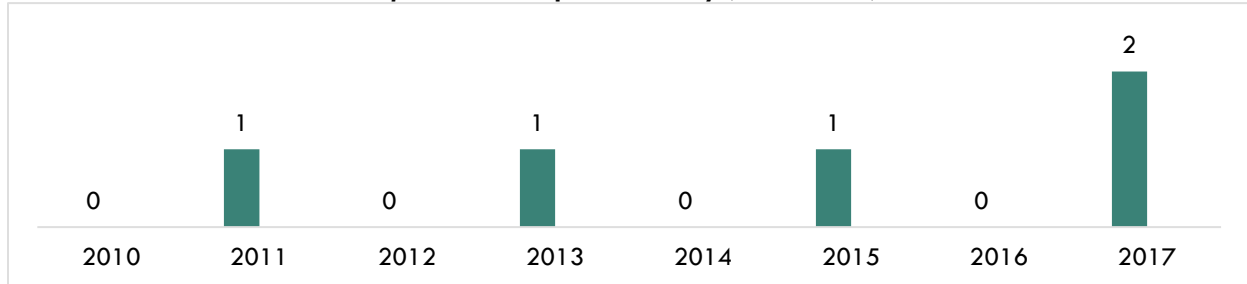
¹ The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](https://www.bls.gov/soc/).

² Economic Modeling Specialists, Int'l. (EMS). Imperial County (6025). 2017.04 Class of Worker. QCEW + Non-QCEW+ Self-Employed. 2007-2022.

Online Job Postings

Between 2010 and 2017, there was an average of one online job posting per year for *Water and Wastewater Treatment Plant and System Operators* in Imperial County (Exhibit 3).

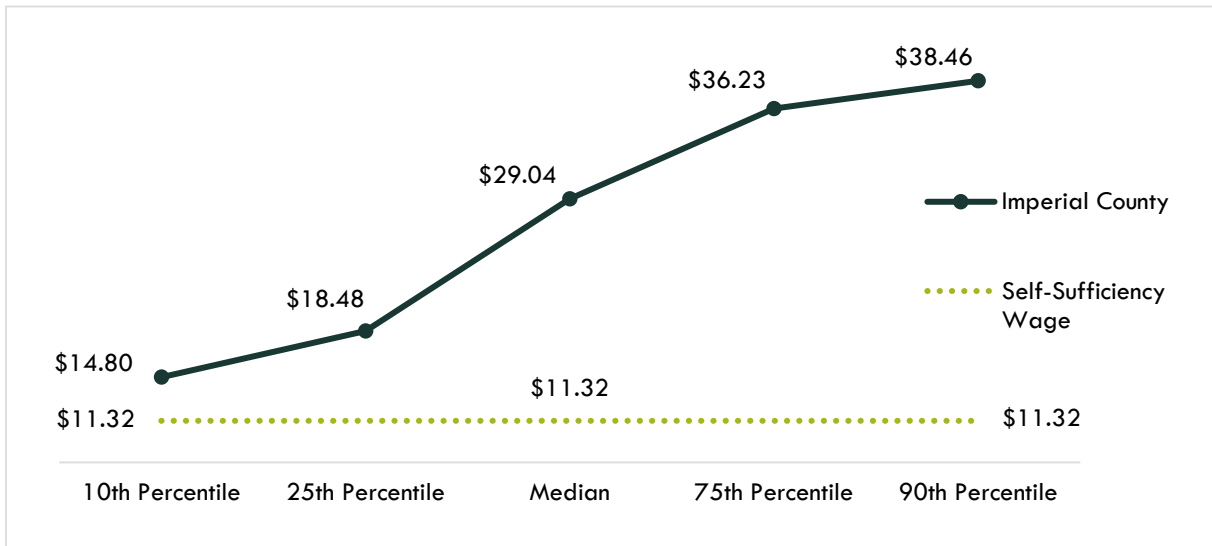
Exhibit 3: Number of Online Job Postings for Water and Wastewater Treatment Plant and System Operators in Imperial County (2010-2017)³



Earnings

Water and Wastewater Treatment Plant and System Operators earn median hourly earnings of **\$29.04**, more than the Self-Sufficiency Standard for two adults and two children (school-age) in Imperial County, which is \$11.32 per hour (Exhibit 4).⁴

Exhibit 4: Hourly Earnings for Water and Wastewater Treatment Plant and System Operators in Imperial County⁵



³ Labor Insight Jobs. Burning Glass Technologies. Imperial, CA. Full years 2010, 2011, 2012, 2013, 2014, 2015, 2016, and 2017.

⁴ The standard for two adults and two children was chosen due to the 3.68 persons per household (2012-2016) as determined by the U.S. Census for Imperial County.

⁵ EMSI. Imperial County (6025). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2017-2022.

Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of related program completers/graduates/awards in Imperial County. To determine what programs are available, Exhibit 5 lists the Taxonomy of Programs (TOP) code(s) related to the SOC code analyzed.

Exhibit 5: Related TOP Codes in Imperial County

SOC 51-8031: Water and Wastewater Treatment Plant and System Operators

095800 Water and Wastewater Technology

According to the California Community Colleges Chancellor’s Office Management Information System (MIS) Data Mart, **three** colleges supply the region with awards for this occupation (Exhibit 6): Cuyamaca College, Imperial College and Palomar College.

Exhibit 6 shows the annual average regional community college awards (associate degrees and certificates) conferred during the three academic years between 2013-14 and 2015-16, as well as other awards granted outside the California Community Colleges from 2012 to 2015, with the relevant TOP code.

Please note: An award is not equivalent to a single person in search of a job opening because a student may earn more than one award such as an associate degree in addition to a certificate.

Exhibit 6: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions by Occupation (Program Year 2012-13 through PY2015-16 Average)

TOP06	TOP06 Title	3-Yr Annual Average CC Awards (PY13-14 to PY15-16)	Other Educational Institutions 3-Yr Annual Average Awards (PY12-13 to PY14-15)	Total 3-Yr Average Supply (PY12-13 to PY15-16)
095800	Water and Wastewater Technology	92	0	92
	• Cuyamaca College	37	0	37
	• Imperial College	13	0	13
	• Palomar College	42	0	42

*Total number of awards may not add up exactly due to rounding.

Demand vs. Supply

Comparing the labor demand (annual openings) with labor supply⁶ from the region's community colleges, there is an **oversupply** for this occupation in Imperial County, with **10** annual openings and **92** awards. Comparatively, there are **1,166** annual openings in California and **445** completions.⁷ The typical entry-level educational requirements for this occupation is a high school diploma or equivalent. Local educational institutions may not necessarily develop training programs for this occupation.

Exhibit 7: Labor Demand (Annual Openings) Compared to 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 County	10	92	82
California	1,166	445	721

Please note: This is a basic analysis of supply and demand of labor for these occupations. This data should be used to discuss the potential gaps or oversupply of workers for these occupations; however, it should not be the only basis for determining whether or not a program should be developed. Additionally, the data does not include workers who are currently in the labor force that could fill these positions or workers that are not captured by publicly available data.

⁶ 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.

⁷ EMSI. Imperial County (6025). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2017-2022.

Student Outcomes

Based on the information available in the CTE Launchboard,⁸ students who took courses in the related TOP code exhibited the following outcomes (Exhibit 8).

Exhibit 8: Strong Workforce Program Metrics for TOP 095800 Water and Wastewater Technology PY2014-15

Metric	San Diego-Imperial	California
Number of course enrollments ⁹	1,638	7,438
Number of students who got a degree or certificate ¹⁰	40	270
Number of students who transferred ¹¹	1	17
Employed in the second fiscal quarter after exit ¹²	82%	82%
Employed in the fourth fiscal quarter after exit ¹³	81%	80%
Job closely related to field of study ¹⁴	N/A	N/A
Median earnings in the second fiscal quarter after exit ¹⁵	\$12,927	\$12,498
Median change in earnings ¹⁶	19%	28%
Attained a living wage ¹⁷	85%	76%

Top Employers and Work Locations

Between January 1, 2015 and December 31, 2017, the top employers in Imperial County for this occupation were **NG & G Facility Services International, City of Imperial and City of Brawley** (Exhibit 9).

⁸ calpassplus.org/LaunchBoard/SWP.aspx.

⁹ The number of enrollments in courses assigned to the TOP code in the selected year.

¹⁰ The number of unduplicated students who earned a locally-issued certificate, Chancellor's Office approved certificate, associate degree, and/or California Community Colleges bachelor's degree in the selected TOP code.

¹¹ Students who took non-introductory courses or completed a California Community Colleges Chancellor's Office award in the selected TOP code in selected year who subsequently enrolled for the first time in a four-year institution the following year.

¹² Among all exiters with a valid SSN, the percentage who were employed two quarters after exiting California Community Colleges.

¹³ Among exiting students with a valid SSN, the percentage who were employed four quarters after exiting California Community Colleges.

¹⁴ Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

¹⁵ Among exiting students, the median second-quarter earnings one year after the year in which they exited California Community Colleges.

¹⁶ Among exiting students with a valid SSN, the percentage change in earnings one year before and one year after exiting California Community College.s

¹⁷ Among completers and skills-builders who exited, the proportion of students who attained a living wage.

Exhibit 9: Top Industries and Employers in Imperial County for Water and Wastewater Treatment Plant and System Operators

Top Employers

- NG & G Facility Services International
- City of Imperial
- City of Brawley

Skills, Education and Certifications

Exhibit 10 indicates the educational attainment for the occupation found currently in the national labor force. The typical on-the-job training for this occupation is **long-term on-the-job training**. The typical entry-level education is a **high school diploma or equivalent**.¹⁸

Exhibit 10: National Educational Attainment of Water and Wastewater Treatment Plant and System Operators¹⁹

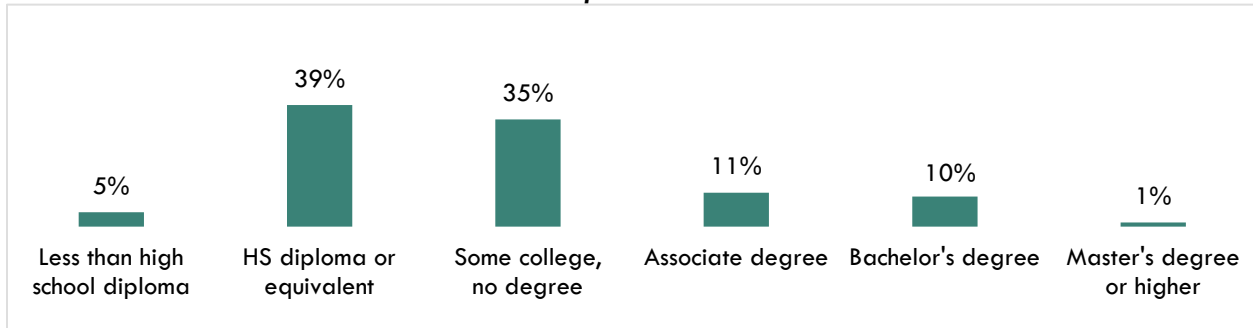


Exhibit 11 lists the top specialized and soft skills that appeared in online job postings between January 1, 2015 and December 31, 2017.

¹⁸ EMSI. Imperial County (6025). 2017.04 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2017-2022.

¹⁹ Bureau of Labor Statistics, Educational attainment for workers 25 years and older by detailed occupation. [bls.gov/emp/ep_table_111.htm](https://www.bls.gov/emp/ep_table_111.htm)

Exhibit 11: Top Skills for Water and Wastewater Treatment Plant and System Operators in Imperial County²⁰

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Repair • Water Treatment • SCADA • Supervisory Skills • Water Meters • Painting • PH Meters 	<ul style="list-style-type: none"> • Physical Demand • Mathematics • Management • Computer Skills • Building Effective Relationships 	N/A

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²⁰ Labor Insight Jobs. Burning Glass Technologies. Imperial, CA. Full years 2015, 2016, and 2017. No computer skills were specified in job postings.