

Mobile Heavy Equipment Mechanics, Except Engines Labor Market Analysis: San Diego County

November 2018

Summary

According to available labor market information, there is demand for *Mobile Heavy Equipment Mechanics, Except Engines*. *Mobile Heavy Equipment Mechanics, Except Engines* has a labor market demand of 119 annual job openings. (For comparison, the average regional demand for an occupation is 275 job openings.) This occupation's entry-level and median wages are higher than the Self-Sufficiency Standard, suggesting that students who successfully complete a program and obtain employment may earn living wages. Only one community college in San Diego County has a program related to this occupation.

The following list summarizes findings from the labor market analysis for *Mobile Heavy Equipment Mechanics, Except Engines*:

- Between 2017 and 2022, *Mobile Heavy Equipment Mechanics, Except Engines* are projected to increase by 36 jobs or three percent.
- Employers in San Diego County will need to hire 119 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 52 online job postings per year for *Mobile Heavy Equipment Mechanics, Except Engines*.
- *Mobile Heavy Equipment Mechanics, Except Engines* earn median hourly earnings of \$26.62; this is more than the Self-Sufficiency Standard for a single adult in San Diego County, which is \$15.99 per hour.
- There are [four](#) Taxonomy of Programs (TOP) codes associated with this occupation: Agricultural Power Equipment Technology (011600), Diesel Technology (094700), Heavy Equipment Maintenance (094720), and Heavy Equipment Operation (094730). There are five Classification of Instructional Programs (CIP) codes associated with this occupation.
- According to TOP data, one community college supplies the region with awards for this occupation: San Diego Miramar College.
- Comparing labor demand (annual openings) with labor supply suggests that there is a supply gap for this occupation in San Diego County, with 119 annual openings and 18 awards. Comparatively, there are 1,528 annual openings in California and 402 completions.

- Between January 1, 2015 and December 31, 2017, the top five employers in San Diego County for this occupation were Human Potential Consultants, Naval Facilities Engineering Command, United Rentals, Crown Equipment Corporation, and US Marine Corps.
- 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 San Diego County for the following occupational code in the Standard Occupational Classification (SOC)¹ system:

Mobile Heavy Equipment Mechanics, Except Engines (SOC 49-3042): Diagnose, adjust, repair, or overhaul mobile mechanical, hydraulic, and pneumatic equipment, such as cranes, bulldozers, graders, and conveyors, used in construction, logging, and surface mining. Excludes 'Rail Car Repairers' (49-3043) and 'Bus and Truck Mechanics and Diesel Engine Specialists' (49-3031). Sample reported job titles include:

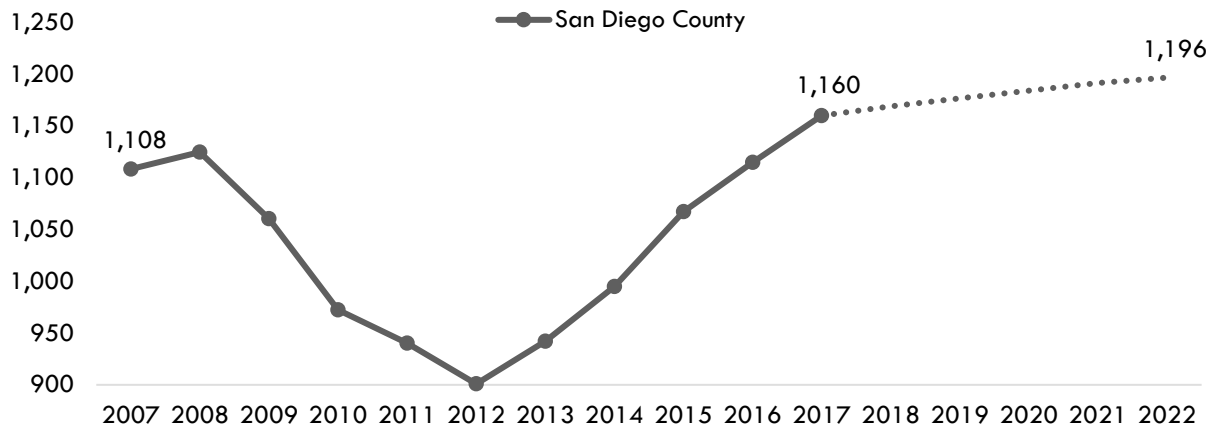
- | | |
|-----------------------------------|----------------------------------|
| • Equipment Mechanic | • Master Mechanic |
| • Construction Equipment Mechanic | • Heavy Equipment Technician |
| • Shop Technician | • Heavy Equipment Field Mechanic |
| • Mobile Heavy Equipment Mechanic | • Field Technician |

Projected Occupational Demand

Between 2017 and 2022, *Mobile Heavy Equipment Mechanics, Except Engines* are projected to increase by **36** jobs or **three** percent (Exhibit 1). Employers in San Diego County will need to hire **119** workers annually to fill new jobs and backfill jobs due to attrition such as retirement or turnover.

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).

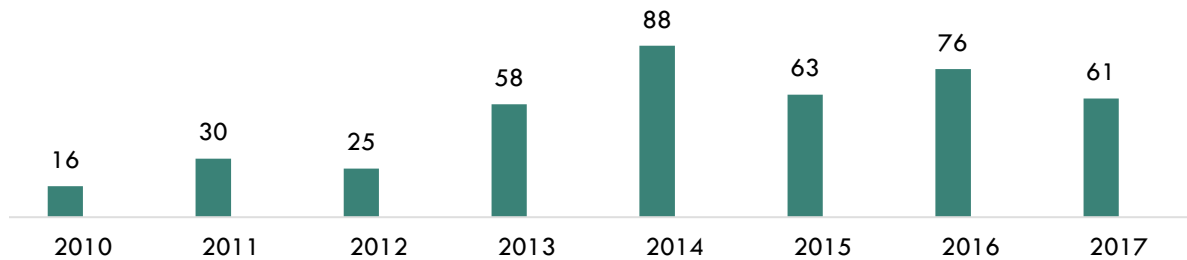
Exhibit 1: Number of Jobs for Mobile Heavy Equipment Mechanics, Except Engines (2007-2022)²



Online Job Postings

Between 2010 and 2017, there was an average of 52 online job postings per year for *Mobile Heavy Equipment Mechanics, Except Engines* (Exhibit 2).

Exhibit 2: Number of Online Job Postings for Mobile Heavy Equipment Mechanics, Except Engines in San Diego County (2010-2017)³



Earnings

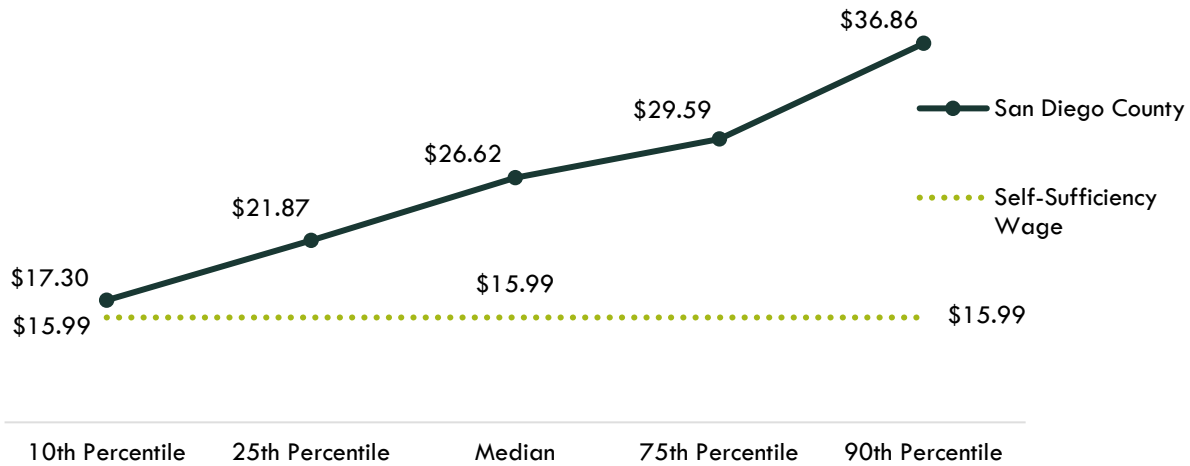
Mobile Heavy Equipment Mechanics, Except Engines earn median hourly earnings of \$26.62; this is more than the Self-Sufficiency Standard for a single adult in San Diego County, which is \$15.99 per hour (Exhibit 3).⁴

² Economic Modeling Specialists, Int'l. (EMSI). San Diego (6073). 2018.03 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2007-2022.

³ Labor Insight Jobs. Burning Glass Technologies. San Diego, CA. Full years 2010-2017.

⁴ The self-sufficiency wage in San Diego for one adult is \$15.99. insightccd.org/2018-self-sufficiency-standard.

Exhibit 3: Hourly Earnings for Mobile Heavy Equipment Mechanics, Except Engines in San Diego County⁵



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.⁶ There are **four** TOP codes associated with this occupation: Agricultural Power Equipment Technology (011600), Diesel Technology (094700), Heavy Equipment Maintenance (094720), and Heavy Equipment Operation (094730) (Exhibit 4). There are **five** CIP codes associated with this occupation; however, only the three most closely related CIP codes are listed in Exhibit 4.

Exhibit 4: Related TOP and CIP Codes in San Diego County

SOC 49-3042: Mobile Heavy Equipment Mechanics, Except Engines

TOP 011600: Agricultural Power Equipment Technology

TOP 094700: Diesel Technology

TOP 094720: Heavy Equipment Maintenance

TOP 094730: Heavy Equipment Operation

CIP 010205: Agricultural Mechanics and Equipment/Machine Technology

CIP 470302: Heavy Equipment Maintenance Technology/Technician

CIP 490202: Construction/Heavy Equipment/Earthmoving Equipment Operation

⁵ EMSI. San Diego (6073). 2018.03 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2017-2022.

⁶ 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).

According to TOP data, **one** community college supplies the region with awards for this occupation: **San Diego Miramar College** (Exhibit 5). The awards for the program, Diesel Technology (094700), were omitted from this brief because they are accounted for in a separate brief, *Bus and Truck Mechanics and Diesel Engine Specialists* (SOC 49-3031). (Visit coecc.net for more information.) According to CIP data, no other providers supply the region with awards for this occupation.

**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)
011600	Agricultural Power Equipment Technology	0	0	0
094720	Heavy Equipment Maintenance	18	0	18
	San Diego Miramar	18	0	
094730	Heavy Equipment Operation	0	0	0
			Total	18

Demand vs. Supply

Comparing labor demand (annual openings) with labor supply⁷ suggests that there is a **supply gap** for this occupation in San Diego County, with **119** annual openings and **18** awards. Comparatively, there are **1,528** annual openings in California and **402** completions⁸ (Exhibit 6).

Exhibit 6: 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
San Diego	119	18	101
California	1,528	402	1,126

⁷ 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.

⁸ EMSI. San Diego (6073). 2018.03 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2017-2022.

Please note: This is a basic analysis of supply and demand of labor. 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. Additionally, the data does not include workers who are currently in the labor force who could fill these positions or workers who are not captured by publicly available data.

Student Outcomes

Based on the information available in the CTE LaunchBoard, students who took courses in the related TOP codes exhibited the following outcomes (Exhibit 7).

Exhibit 7: Strong Workforce Program Metrics for TOP 094720: Heavy Equipment Maintenance San Diego-Imperial Region vs. California (PY2015-16)

Metric	San Diego-Imperial	California
Number of course enrollments ⁹	28	1,311
Completed 12+ CTE Units in One Year ¹⁰	13	215
Completed 48+ CTE Contact Hours in One Year ¹¹	0	0
Number of students who got a degree or certificate ¹²	17	43
Number of students who transferred ¹³	0	N/A
Employed in the second fiscal quarter after exit ¹⁴	87%	85%
Employed in the fourth fiscal quarter after exit ¹⁵	73%	83%
Job closely related to field of study ¹⁶	N/A	N/A
Median earnings in the second fiscal quarter after exit ¹⁷	\$13,093	\$11,383
Median change in earnings ¹⁸	N/A	145%
Attained a living wage ¹⁹	83%	85%

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

¹⁰ The number of students who completed 12 or more credit CTE units.

¹¹ The number of students who completed 48 or more noncredit CTE instructional contact hours.

¹² 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.

¹³ 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.

¹⁴ Among all exiters with a valid SSN, the percentage who were employed two quarters after exiting California Community Colleges.

¹⁵ Among exiting students with a valid SSN, the percentage who were employed four quarters after exiting California Community Colleges.

¹⁶ Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

¹⁷ Among exiting students, the median second-quarter earnings one year after the year in which they exited California Community Colleges.

¹⁸ Among exiting students with a valid SSN, the percentage change in earnings one year before and one year after exiting California Community Colleges.

¹⁹ Among completers and skills builders who exited, the proportion of students who attained a living wage.

Top Employers and Work Locations

Between January 1, 2015 and December 31, 2017, the top five employers in San Diego County for this occupation were [Human Potential Consultants](#), [Naval Facilities Engineering Command](#), [United Rentals](#), [Crown Equipment Corporation](#), and [US Marine Corps](#) (Exhibit 8).

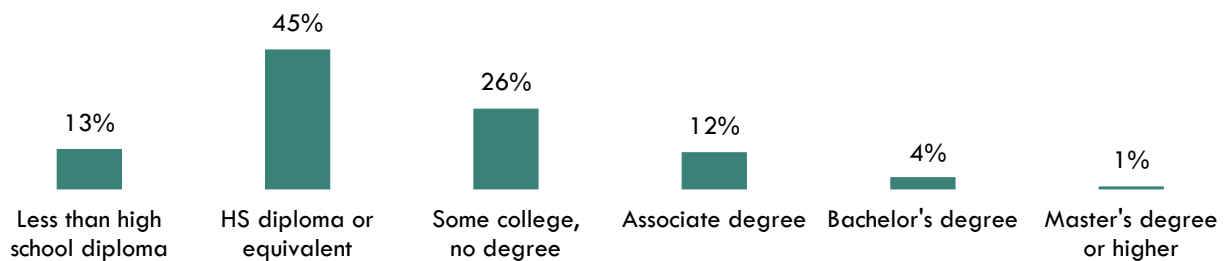
Exhibit 8: Top Employers in San Diego County for Mobile Heavy Equipment Mechanics, Except Engines²⁰

Top Employers	
• Human Potential Consultants	• Sunstate Equipment Company
• Naval Facilities Engineering Command	• Waste Management
• United Rentals	• California Department Transportation
• Crown Equipment Corporation	• US Navy
• US Marine Corps	• General Dynamics

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](#).²¹

Exhibit 9: National Educational Attainment of Mobile Heavy Equipment Mechanics, Except Engines²²



*May not add to 100% due to rounding

Exhibit 10 lists the top specialized, soft and software skills that appeared in online job postings for this occupation between January 1, 2015 and December 31, 2017.

²⁰ Labor Insight Jobs. Burning Glass Technologies. San Diego, CA. Full years 2015-2017.

²¹ EMSI. San Diego (6073). 2018.03 Class of Worker. QCEW + Non-QCEW + Self-Employed. 2017-2022.

²² Bureau of Labor Statistics, Educational attainment for workers 25 years and older by detailed occupation. bls.gov/emp/ep_table_111.htm.

Exhibit 10: Top Skills for Mobile Heavy Equipment Mechanics, Except Engines in San Diego County²³

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Repair • Heavy Equipment • Machinery • Schematic Diagrams • Welding 	<ul style="list-style-type: none"> • Troubleshooting • Preventive Maintenance • Writing • Communication Skills • English 	<ul style="list-style-type: none"> • Active Server Pages • AutoCAD • Microsoft Excel • Microsoft Word • Facebook

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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.

²³ Labor Insight Jobs. Burning Glass Technologies. San Diego, CA. Full years 2015-2017.