

Rail Car Occupations

Labor Market Analysis: San Diego County

November 2020

Summary



The San Diego-Imperial Center of Excellence for Labor Market Research (COE) prepared this brief about *Rail Car Occupations* to assist the San Diego and Imperial Counties Community Colleges with program development and strategic planning. *Rail Car Occupations* include “Locomotive Engineers,” “Rail Car Repairers,” and “Rail-Track Laying and Maintenance Equipment Operators.” According to available labor market information (LMI), *Rail Car Occupations* in San Diego County have a labor market demand of 19 annual job openings (while average demand for a single occupation in San Diego County is 277 annual job openings), and no educational institutions in San Diego County supply awards for these occupations, suggesting that there is a small supply gap in the labor market. Entry-level and median wages for all occupations are above the living wage. This brief recommends proceeding with caution when developing a **new** program because 1) a small supply gap exists for these occupations; 2) most of these occupations’ entry-level and median earnings are above the living wage; and 3) no institutions provide awards for these occupations. However, this LMI is based on reported data. San Diego City College offers an apprenticeship program in partnership with the San Diego Metropolitan Transit System (MTS). Therefore, the COE supports a program modification for the existing apprenticeship program.

Introduction

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

- **Rail-Track Laying and Maintenance Equipment Operators (SOC 47-4061):** Lay, repair, and maintain track for standard or narrow-gauge railroad equipment used in regular railroad service or in plant yards, quarries, sand and gravel pits, and mines. Includes ballast cleaning machine operators and railroad bed tamping machine operators.
- **Rail Car Repairers (SOC 49-3043):** Diagnose, adjust, repair, or overhaul railroad rolling stock, mine cars, or mass transit rail cars.
- **Locomotive Engineers (SOC 53-4011):** Drive electric, diesel-electric, steam, or gas-turbine-electric locomotives to transport passengers or freight. Interpret train orders, electronic or manual signals, and railroad rules and regulations.

For the purpose of this report, these occupations are referred to as *Rail Car Occupations*.

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).

Projected Occupational Demand

Between 2019 and 2024, *Rail Car Occupations* are projected to increase by **two** net jobs or **one** percent (Exhibit 1a). During this period, employers in San Diego County are projected to hire **19** workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.

Exhibit 1a: Number of Jobs for Rail Car Occupations (2009-2024)²

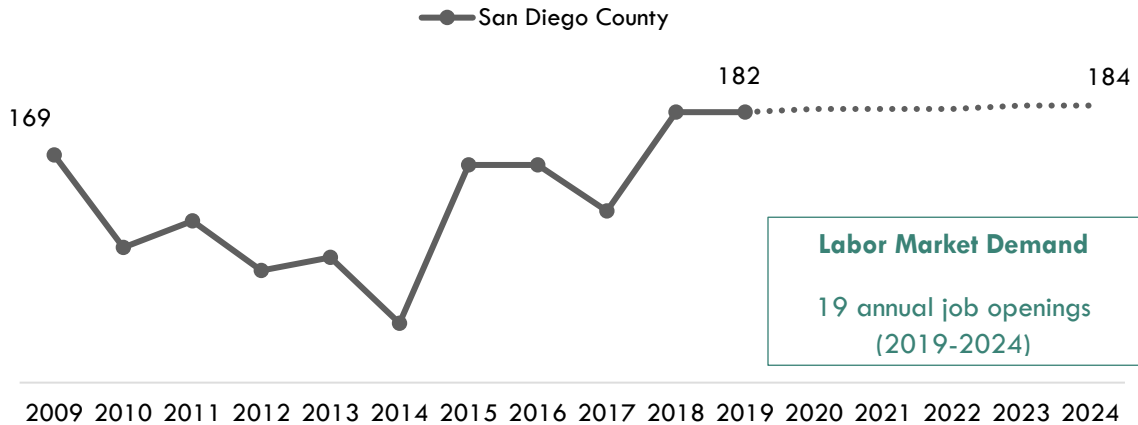


Exhibit 1b breaks down the projected number of jobs change by occupation more specifically: *Rail Car Repairers* are projected to increase the most by four total jobs between 2019 and 2024.

Exhibit 1b: Number of Jobs for Rail Car Occupations in San Diego County (2019-2024)³

Occupational Title	2019 Jobs	2024 Jobs	2019 - 2024 Net Jobs Change	2019-2024 % Net Jobs Change	Annual Job Openings (Demand)
Rail Car Repairers	101	105	4	4%	11
Rail-Track Laying and Maintenance Equipment Operators	44	45	1	2%	5
Locomotive Engineers	37	34	-3	-8%	3
Total	182	184	2	2%	19

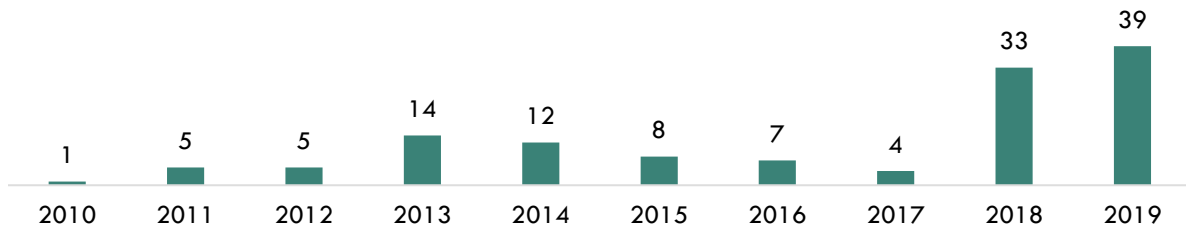
² EMSI 2020.04; QCEW, Non-QCEW, Self-Employed.

³ EMSI 2020.04; QCEW, Non-QCEW, Self-Employed.

Online Job Postings

This report analyzes not only historical and projected data (traditional labor market information or LMI), 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 that are not captured by historical data. Between 2010 and 2019, there was an average of 13 online job postings per year in San Diego County for *Rail Car Occupations* (Exhibit 2). Please note that online job postings do **not** equal labor market demand; demand is represented by annual job openings (Exhibit 1b). Employers may post a position multiple times for various reasons, such as increasing the pool of applicants, for example.

Exhibit 2: Number of Online Job Postings for *Rail Car Occupations* in San Diego County (2010-2019)⁴



⁴ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2010-2019.

Earnings

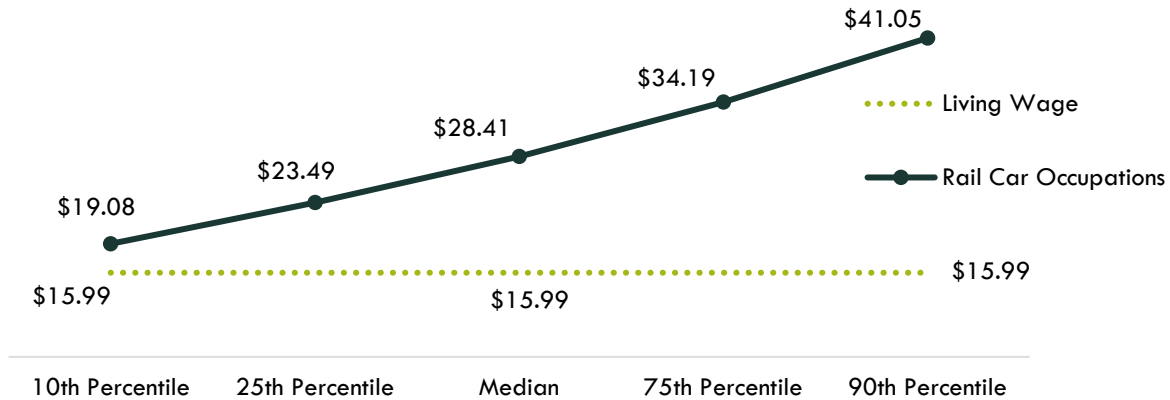
The entry-level hourly earnings for *Rail Car Occupations* range from \$18.96 to \$32.41 (Exhibit 3a).

Exhibit 3a: Hourly Earnings for Rail Car Occupations in San Diego County⁵

Occupational Title	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Locomotive Engineers	\$32.41	\$38.27	\$47.42
Rail-Track Laying and Maintenance Equipment Operators	\$19.10	\$24.05	\$27.44
Rail Car Repairers	\$18.96	\$22.90	\$27.71

On average, the entry-level hourly earnings for *Rail Car Occupations* is \$23.49; this is less than the living wage for a single adult in San Diego County, which is \$15.99 per hour (Exhibit 3b).⁶

Exhibit 3b: Average Hourly Earnings⁷ for Rail Car Occupations in San Diego County⁸



⁵ EMSI 2020.04; QCEW, Non-QCEW, Self-Employed.

⁶ "California Family Needs Calculator (formerly the Self-Sufficiency Standard)," Insight: Center for Community Economic Development, last updated 2018. insightccd.org/2018-self-sufficiency-standard.

⁷ 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.

⁸ EMSI 2020.04; QCEW, Non-QCEW, Self-Employed.

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.⁹ There is **one** TOP code and **two** CIP codes related to *Rail Car Occupations* (Exhibit 4).

Exhibit 4: Related TOP and CIP Codes for Rail Car Occupations

<i>Rail Car Occupations</i>
TOP 094740: Railroad and Light Rail Operations
CIP 49.0208: Railroad and Railway Transportation
CIP 49.0299: Ground Transportation, Other

According to TOP and CIP data, no colleges or other providers supply the region with awards for this occupation (Exhibit 5). However, San Diego City College offers an apprenticeship program in partnership with the San Diego Metropolitan Transit System (MTS) and supplies that employer with workers directly.

Exhibit 5: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions (Program Year 2014-15 through PY2018-19 Average)

TOP6 or CIP	TOP6 or CIP Title	3-Yr Annual Average CC Awards (PY16-17 to PY18-19)	Other Educational Institutions 3-Yr Annual Average Awards (PY14-15 to PY16-17)	3-Yr Total Average Supply (PY14-15 to PY18-19)
094740	Railroad and Light Rail Operations	0	0	0
49.0208	Railroad and Railway Transportation	0	0	0
49.0299	Ground Transportation, Other	0	0	0
			Total	0

⁹ 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).

Demand vs. Supply

Comparing labor demand (annual openings) with labor supply¹⁰ suggests that there is a **supply gap** for these occupations in San Diego County, with **19** annual openings and **no** awards. Comparatively, there are **476** annual openings in California and **nine** awards, demonstrating that there is a supply gap across the state¹¹ (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
San Diego	19	0	19
California	476	9	467

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.

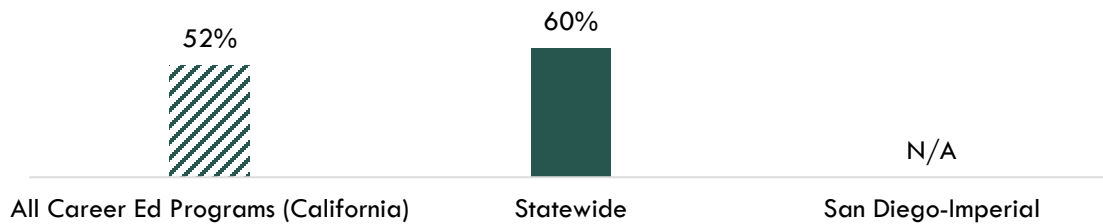
¹⁰ Labor supply can be found from two different sources: EMSI or the California Community Colleges Chancellor's Office MIS Data Mart. EMSI uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.

¹¹ "Supply and Demand," Centers of Excellence Student Outcomes, coecc.net/Supply-and-Demand.aspx.

Student Outcomes and Regional Comparisons

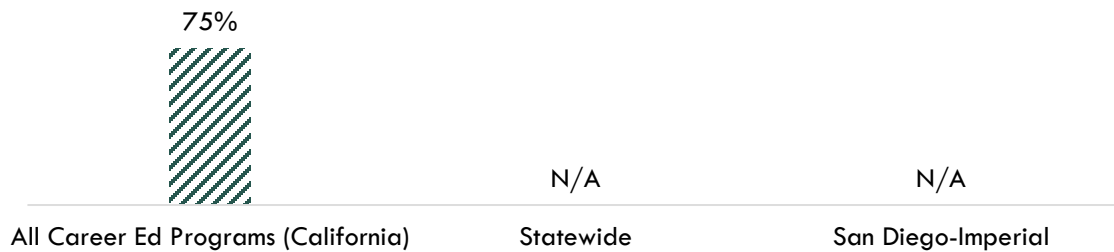
According to the California Community Colleges LaunchBoard, 60 percent of students statewide earned a living wage after completing an Railroad and Light Rail Operations (TOP 094740) program, compared to 52 percent of students in Career Education programs in general across the state (Exhibit 7a).

**Exhibit 7a: Proportion of Students Who Earned a Living Wage
(Railroad and Light Rail Operations, PY2015-16)¹²**



According to the California Community Colleges LaunchBoard, 75 percent of students obtained a job closely related to their field of study in Career Education programs in general across the state. Comparative data is not available for Railroad and Light Rail Operations (TOP 094740) programs statewide or in the region (Exhibit 7b).

**Exhibit 7b: Percentage of Students in a Job Closely Related to Field of Study
(Railroad and Light Rail Operations, PY2016-17)¹³**



¹² Among completers and skills builders who exited, the proportion of students who attained a living wage. calpassplus.org/LaunchBoard/SWP.aspx

¹³ 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. calpassplus.org/LaunchBoard/SWP.aspx

Top Employers

Between January 1, 2017 and December 31, 2019, the top five employers in San Diego County for these occupations were [Carnival Entertainment](#), [UniFirst Corporation](#), [Calpine Corporation](#), [Bombardier](#), and [Caterpillar Incorporated](#) (Exhibit 8).

Exhibit 8: Top Employers in San Diego County for Rail Car Occupations¹⁴

Top Employers	
<ul style="list-style-type: none"> • Carnival Entertainment • UniFirst Corporation • Calpine Corporation • Bombardier • Caterpillar Incorporated 	<ul style="list-style-type: none"> • Sterigenics US International LLC • Sorrento Therapeutics • YoGov • US Department of Homeland Security • Sorrento Therapeutics, Inc.

Education and Skills

Rail Car Occupations have national educational requirement of a [high school diploma or equivalent](#) (Exhibit 9a).

Exhibit 9a: National Educational Attainment for Rail Car Occupations¹⁵

Occupational Title	Typical Entry-Level Education
Rail-Track Laying and Maintenance Equipment Operators	High school diploma or equivalent
Rail Car Repairers	High school diploma or equivalent
Locomotive Engineers	High school diploma or equivalent

¹⁴ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2017-2019.

¹⁵ EMSI 2020.04; QCEW, Non-QCEW, Self-Employed.

Based on online job postings between January 1, 2017 and December 31, 2019 in San Diego County, the top listed educational requirement for *Rail Car Occupations* is also a [high school or vocational training](#) (Exhibit 9b).¹⁶

Exhibit 9b: Educational Requirements for *Rail Car Occupations* in San Diego County¹⁷



*May not add to 100% due to rounding

Exhibit 10 lists the top specialized, soft and software skills that appeared in online job postings between January 1, 2017 and December 31, 2019.

Exhibit 10: Top Skills for *Rail Car Occupations* in San Diego County¹⁸

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Transposition • Newsletters • Repair • Keyboards • Forklift Operation 	<ul style="list-style-type: none"> • Communication Skills • English • Physical Abilities • Computer Literacy • Troubleshooting 	<ul style="list-style-type: none"> • Microsoft PowerPoint • Microsoft Excel • Microsoft Word

¹⁶ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2017-2019.

¹⁷ "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," Bureau of Labor Statistics, last modified September 4, 2019. bls.gov/emp/tables/educational-attainment.htm.

¹⁸ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2017-2019.

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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.

This workforce demand report uses state and federal job projection data that was developed before the economic impact of COVID-19. The COE is monitoring the situation and will provide more information as it becomes available. Please consult with local employers to understand their current employment needs.