

OC RESILIENT JOBS & JOBS FOR RECOVERY

Orange County Center of Excellence

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Executive Summary

The COVID-19 Pandemic was an unprecedented societal and economic shock that led to rapid changes in the labor market. California Governor Gavin Newsom declared a state of emergency on March 4, 2020. Within two weeks, large group gatherings were banned, businesses closed, and schools across the state transitioned to a virtual environment. The unemployment rate in Orange County rapidly increased to an all-time high of 15.5% by May 2020. Industries and occupations that typically require face-to-face contact — such as retail, food services, and live entertainment — were disproportionately impacted, with low-wage occupations bearing the brunt of job losses.

Throughout the early stages of the pandemic, real-time labor market information (LMI) was scarce. In an attempt to quantify the impacts of these labor market shifts and to forecast the types of jobs that can withstand economic downturns, the Orange County Center of Excellence for Labor Market Research (OC COE) published *Resilient Jobs* in October 2020.¹ In that report, the OC COE conducted an analysis of industries and occupations that appeared resilient during the Great Recession (2007-2009), were also positively impactful to the post-Great Recession economic recovery and expansion (2010-2019), and those that appeared to be pandemic-resilient using online job postings as an indicator of real-time labor market demand. A year later, the OC COE analyzed occupational projections to identify in-demand, growing occupations in the immediate post-COVID-19 Pandemic Recession economy in *Jobs for Recovery*.²

To build upon this previous work, this report combines both methodologies to validate the previous studies using the most recent LMI available and comparing it to the results of those reports in order to forecast which occupations are expected to be the most stable with the potential of another recession in the near future. The original *Resilient Jobs* report relied heavily on real-time online job postings data to identify pandemic-resilient jobs. However, online job postings are not the strongest indicator of labor market demand.³ Traditional LMI is now available for 2020 and 2021 and was used in this report to determine which jobs were resilient during the COVID-19 Pandemic Recession and compare them to the original list that used online job postings. Comparing the results of the 2020 analysis to the updated analysis in this report provides a more holistic picture of jobs that were truly resilient during both the Great Recession and COVID-19 Pandemic Recession using validated labor market information.

¹ "Resilient Jobs: Top Jobs During the Great Recession and COVID-19 Pandemic in Orange County," Orange County Center of Excellence for Labor Market Research, last modified March 14, 2023, <https://coecc.net/orange-county/2020/10/resilient-jobs-top-jobs-during-the-great-recession-and-covid-19-pandemic-in-orange-county-2/>.

² "Jobs for Recovery," Orange County Center of Excellence for Labor Market Research, last modified February 2, 2022, <https://coecc.net/orange-county/2022/02/jobs-for-recovery/>.

³ There are several limitations when analyzing online job postings. A single job posting may not represent a single job opening, as employers may be creating a pool of candidates for future openings or hiring for multiple positions with a single posting. Additionally, not all jobs are posted online and jobs may be filled through other methods such as internal promotion, word-of-mouth advertising, physical job boards, or a variety of other channels

These Resilient Jobs and Jobs for Recovery were also compared to U.S. News and World Report's 100 Best Jobs of 2023.⁴ U.S. News considers several factors in its Best Jobs rankings, including projected growth, salary, stress level, and work-life balance.⁵ With recent increased interest in job quality and "good jobs" from federal⁶, state⁷, and local⁸ governments, comparing the results from this study with U.S. News' findings provides further validation of the types of jobs that can withstand economic downturns and provide living wages for jobseekers. Throughout this report, U.S. News and World Report "Best Jobs" are notated with a caret (^).

Finally, the OC COE identified Orange County community college programs that could lead to direct employment or provide a pathway to Resilient Jobs and Jobs for Recovery. Additionally, career and educational pathways for three of the four Resilient Jobs for Recovery were identified. Orange County community colleges can use the information in this report to develop new pathways, refine existing pathways, and for local and regional strategic planning.



⁴ "100 Best Jobs," U.S. News and World Report, accessed February 10, 2023, <https://money.usnews.com/careers/best-jobs/rankings/the-100-best-jobs>.

⁵ U.S. News Staff, "How U.S. News Ranks the Best Jobs," U.S. News and World Report, accessed February 10, 2023, <https://money.usnews.com/money/careers/articles/how-us-news-ranks-the-best-jobs>.

⁶ "Job Quality Toolkit," U.S. Department of Commerce, accessed February 9, 2023, <https://www.commerce.gov/work-us/job-quality-toolkit>.

⁷ "The California High Road: A Road Map to Job Quality," California Workforce Development Board, accessed February 10, 2023, https://cwdb.ca.gov/wp-content/uploads/sites/43/2020/08/OneSheet_Job-Quality_ACCESSIBLE.pdf.

⁸ "An Inclusive Economic Recovery Strategy for the SCAG Region," Southern California Association of Governments, accessed February 10, 2023, https://scag.ca.gov/sites/main/files/file-attachments/iers_report_final.pdf.

The following tables show the time period and various criteria used to determine Resilient Jobs and Jobs for Recovery. The two tables can be compared to understand the differences in the criteria used throughout this report and how it compares to the previous versions of these reports.

Exhibit 1 shows the criteria used to determine which industries and jobs are resilient. The employment and wages criteria are the same for resilient industries and resilient jobs.

Exhibit 1: Resilient Jobs Criteria

Recession	Type	Time Period	Employment Criteria	Number of Jobs Criteria	Annual Openings Criteria	Living Wage Criteria
Great Recession-Resilient	Industries	2005-2019	< 7.4% decline (2005-2009) > 21.4% growth (2010-2019)	> median # of jobs in majority of years (2005-2021)	N/A	\$20.63
	Jobs	2005-2019	< 7.4% decline (2005-2009) > 21.4% growth (2010-2019)	N/A	> 65 openings (2007-2009) > 75 openings (2010-2019)	\$20.63
COVID-19 Pandemic Recession-Resilient	Industries	2019-2021	< 8% decline (2019-2020) > 3.5% growth (2020-2021)	> median # of jobs in majority of years (2005-2021)	N/A	\$20.63
	Jobs	2019-2021	< 8% decline (2019-2020) > 3.5% growth (2020-2021)	N/A	> 71 openings (2019-2020) > 79 openings (2020-2021)	\$20.63

The original *Jobs for Recovery* report analyzed projections from 2020-2025; this report analyzes projections for 2021-2026. **Exhibit 2** shows the criteria used to determine which jobs are considered Jobs for Recovery and how those criteria compare to the 2021 report.

Exhibit 2: Jobs for Recovery Criteria and Comparison to 2021 Report

Report Published	Projection Period	Employment Criteria	Annual Openings Criteria	# of Jobs for Recovery
2021	2020-2025	> 1.53% growth	> 248 openings	54
2023	2021-2026	> 2.5% growth	> 524 openings	39

Key Findings

- **2023 Resilient Jobs**
 - **Recession-Resilient Industries:** Only 16 industries were identified as Great Recession and COVID-19 Pandemic Recession-resilient.
 - **Great Recession-Resilient Jobs:** Only 50 occupations have been identified as Great Recession-Resilient Jobs in Orange County.
 - This figure is slightly higher than the 35 occupations that were considered Great Recession-resilient in 2020.
 - **COVID-19 Pandemic Recession-Resilient Jobs:** There are 72 occupations that met the COVID-19 Pandemic Recession-resilient criteria.
 - **Great Recession and COVID-19 Pandemic Recession-Resilient Jobs:** There are 23 jobs that are considered both Great Recession and COVID-19 Pandemic Recession-Resilient Jobs.
 - 25% (8) are middle-skill occupations that can be obtained with a community college education.
 - From 2005 to 2021, these Resilient Jobs grew by 94%, compared to non-recession resilient jobs which only grew by 3%.
 - In 2005, Recession-Resilient Jobs accounted for 4% of all employment in Orange County and grew to account for 7% of all employment by 2021.
 - Of the 8 middle-skill Recession-Resilient Jobs, 38% (3) are considered a “Best Job” by U.S. News and World Report. These “Best Jobs” are notated throughout this report with a caret (^).
- **2023 Jobs for Recovery**
 - Of the nearly 800 occupations in the SOC system, 39 are considered a Job for Recovery for the 2021-2026 time period.
 - 45% (18) of the Jobs for Recovery are middle-skill occupations that can be obtained with a community college education.
 - Of the 18 middle-skill Jobs for Recovery, 56% (10) are considered a “Best Job” by U.S. News and World Report.
 - Only 4 Jobs for Recovery are also considered a Resilient Job:
 - Managers, All Other (11-9199),
 - Project Management Specialists (13-1082),
 - Market Research Analysts and Marketing Specialists (13-1161), and
 - Registered Nurses (29-1141).

- **2023 Orange County Community Colleges Have Existing Programs...**
 - **Resilient Jobs:** ...that train for 7 of the 8 middle-skill Resilient Jobs.
 - **Jobs for Recovery:** ...that train for 15 of the 18 middle-skill Jobs for Recovery.
 - **Resilient Jobs for Recovery:** ...at all of their institutions that could lead to direct employment or provide a pathway to employment for 3 of the 4 Resilient Jobs for Recovery.

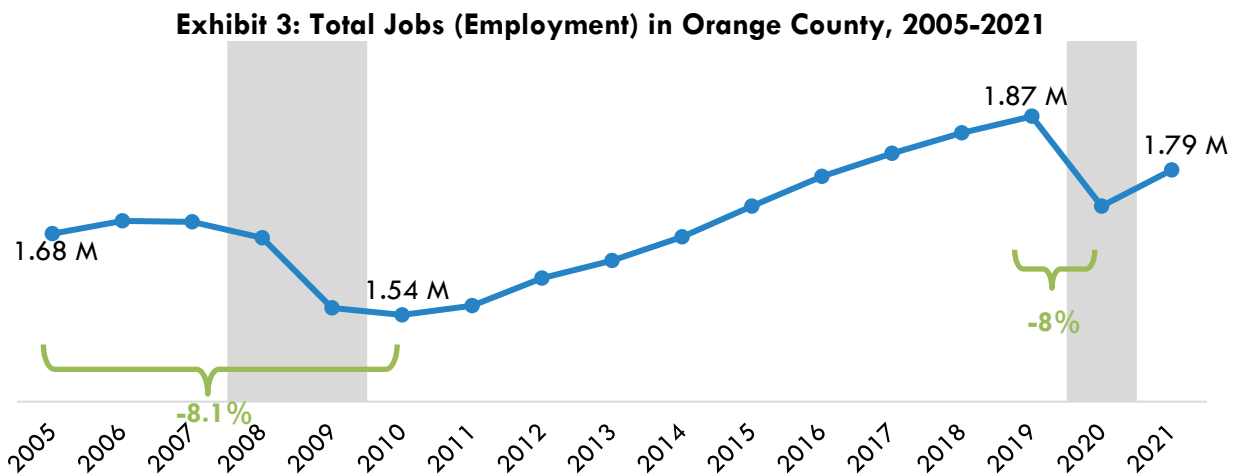
The labor market information throughout this report is intended to help Orange County Community Colleges with program development and strategic planning. However, it is important to note that this study analyzes the *labor market demand* for jobs and does not compare demand with labor market supply. If the region's community colleges decide to create a new program for any of the occupations identified in this study then, per the Orange County Regional Consortium's program recommendation process, a formal request for a supply gap analysis, which compares demand with supply, would need to be made by the college and subsequently conducted by the OC COE.



Introduction

The Great Recession (2007-2009) was considered “the severest labor market downturn since the Great Depression of the 1930s.”⁹ Construction and manufacturing jobs declined the most and the negative economic impact from the financial crisis persisted well after the official end of the recession in 2009.¹⁰ In contrast to the Great Recession, the COVID-19 Pandemic Recession disproportionately affected leisure and hospitality jobs and declines in employment “were roughly 50 percent larger than the cumulative changes over more than two years...in the Great Recession.”¹¹

In Orange County, the total number of jobs (employment) declined by 8.1% from 2005 to 2010. Prior to the Great Recession, the number of jobs in Orange County peaked at 1.7 million in 2006; the number of jobs did not return to that level until 2015, six years after the end of the Great Recession. The number of jobs continued to increase and hit a new high of more than 1.8 million in 2019 before declining 8% to 2020. As of 2021, there were over 1.7 million jobs in Orange County. **Exhibit 3** shows the number of jobs in Orange County from 2005 to 2021; gray areas indicate the Great Recession and the COVID-19 Pandemic Recession periods, respectively.



The economics around the Great Recession and COVID-19 Pandemic Recession are markedly different, but identifying jobs that were resilient can help educators prepare for the next downturn. High inflation throughout 2022 lead the Federal Reserve to repeatedly raise interest rates creating an environment for a “classic recession;” yet economists disagree on when a downturn will occur not if one will happen.¹²

⁹ Kory Kroft et al., "Long-Term Unemployment and the Great Recession: The Role of Composition, Duration Dependence, and Non-Participation," *Journal of Labor Economics* 34 (2014): xx, <https://www.journals.uchicago.edu/doi/10.1086/682390>.

¹⁰ Jesse Rothstein, "Unemployment Insurance and Job Search in the Great Recession," 2011, xx, https://www.nber.org/system/files/working_papers/w17534/w17534.

¹¹ Brian Wallheimer, "How the COVID-19 Recession Has Differed from the Great Recession," The University of Chicago Booth School of Business, last modified December 15, 2020, <https://www.chicagobooth.edu/review/how-covid-19-recession-has-differed-great-recession>.

¹² Patti Domm, "Why Everyone Thinks a Recession is Coming in 2023," CNBC, accessed February 13, 2023, <https://www.cnbc.com/2022/12/23/why-everyone-thinks-a-recession-is-coming-in-2023.html>.

Great Recession-Resilient Industries

To identify Great Recession-resilient industries, the OC COE conducted an analysis of traditional labor market information from 2005 to 2019. Great Recession-resilient industries met the following criteria for employment, number of jobs, and wages:

-
- **Employment** – Less than 7.4% employment decline between 2005 and 2009, as well as greater than 21.4% employment growth between 2010 and 2019
 - **Number of Jobs** – Employment above the median number of jobs for all industries in the majority of years between 2005 and 2021.
 - **Wages** – Average hourly earnings at or above \$20.63.
-

These three criteria were predicated on data patterns that occurred between 2005 and 2019. On average, industries experienced a 7.4% employment decline between 2005 and the end of the Great Recession in Orange County. While these industries performed better than average during the Great Recession, it is also important to consider their performance during the post-recession recovery. On average, industries experienced a 21.4% increase in employment between 2010 and 2019 in Orange County. While some industries may have experienced above average, or even exponential, growth during this time period, these criteria consider those industries that had a significant number of jobs in Orange County. The living wage for a single adult in Orange County is \$20.63. This figure measures the cost of basic expenses, including housing, food, health care, and transportation. Generally, the living wage increases as family size increases; however, for the purpose of this study, only industries that have average hourly earnings at or above the living wage for a single adult were included in the analysis.¹³

Although there are nearly 1,000 NAICS codes, only 70 industries met the above criteria and are therefore considered Great Recession-Resilient industries. Notably, there were 92 industries that met the same criteria in the original *Resilient Jobs* report in 2020. However, the historical data for this time period was revised in late 2020 by Lightcast – a labor market analytics firm and the source for the traditional LMI analyzed throughout this report. Therefore, the data in this report is more accurate than that in the previous report and resulted in 30 industries no longer being considered Great Recession-Resilient; however, eight previously unidentified industries are now considered Great Recession-Resilient.

Exhibit 4 shows the number of jobs in 2005 and 2019 for the top 10 Great Recession-Resilient Industries (by number of jobs in 2019), as well as the change in the number of jobs both as an actual number and a

¹³ The OC COE typically analyzes entry-level earnings as opposed to average earnings in labor market reports. However, industry data only includes average earnings and does not include percentile wages. For that reason, only average earnings are considered in this section.

percentage, and average hourly earnings. The industries in **Exhibit 4** are sorted in descending order, starting with industries that had the highest number of jobs in 2019.

Exhibit 4: Great Recession-Resilient Industries in Orange County

NAICS	Industry	2005 Jobs	2019 Jobs	2005-2019 Employment Change	2005 - 2019 % Employment Change	Average Hourly Earnings
713110	Amusement and Theme Parks	17,839	32,184	14,346	80%	\$24.28
902612	Colleges, Universities, and Professional Schools (State Government)	13,658	21,485	7,827	57%	\$53.40
238210	Electrical Contractors and Other Wiring Installation Contractors	13,365	18,074	4,709	35%	\$40.78
621210	Offices of Dentists	11,204	17,688	6,484	58%	\$36.02
524210	Insurance Agencies and Brokerages	10,950	17,516	6,566	60%	\$57.31
541511	Custom Computer Programming Services	13,240	16,476	3,236	24%	\$61.69
522110	Commercial Banking	9,962	15,246	5,284	53%	\$64.49
531311	Residential Property Managers	10,048	13,274	3,226	32%	\$38.00
452311	Warehouse Clubs and Supercenters	7,780	13,157	5,377	69%	\$24.97
623110	Nursing Care Facilities (Skilled Nursing Facilities)	7,568	12,050	4,482	59%	\$33.18

COVID-19 Pandemic Recession-Resilient Industries

To identify COVID-19 Pandemic Recession-resilient industries, the OC COE conducted an analysis of traditional labor market information from 2019 to 2021. COVID-19 Pandemic Recession-resilient industries met the following criteria for employment, number of jobs, and wages:

- **Employment** – Less than 8% employment decline between 2019 and 2020, as well as greater than 3.5% employment growth between 2020 and 2021.
- **Number of Jobs** – Employment above the median number of jobs for all industries in the majority of years between 2005 and 2021.
- **Wages** – Average hourly earnings at or above \$20.63.

These three criteria were predicated on data patterns that occurred between 2019 and 2021. On average, industries experienced an 8% employment decline between 2019 and 2020 in Orange County. On average, industries experienced a 3.5% increase in employment between 2020 and 2021 in Orange

County. While some industries may have experienced above average, or even exponential, growth during this time period, these criteria consider those industries that had a significant number of jobs in Orange County. The living wage for a single adult in Orange County is \$20.63. This figure measures the cost of basic expenses, including housing, food, health care, and transportation. Generally, the living wage increases as family size increases; however, for the purpose of this study, only industries that have average hourly earnings at or above the living wage for a single adult were included in the analysis.

Although there are nearly 1,000 NAICS codes, only 81 industries met the above criteria and are therefore considered COVID-19 Pandemic Recession-Resilient Industries. **Exhibit 5** shows the number of jobs in 2019 and 2021 for the top 10 COVID-19 Pandemic Recession-Resilient Industries (by number of jobs in 2021), as well as the change in the number of jobs both as an actual number and a percentage, and average hourly earnings. The industries in **Exhibit 5** are sorted in descending order, starting with industries that had the highest number of jobs in 2021.

Exhibit 5: COVID-19 Pandemic Recession-Resilient Industries in Orange County

NAICS	Industry	2019 Jobs	2021 Jobs	2019-2021 Employment Change	2019 - 2021 % Employment Change	Average Hourly Earnings
531210	Offices of Real Estate Agents and Brokers	18,151	19,608	1,456	8%	\$55.34
238210	Electrical Contractors and Other Wiring Installation Contractors	18,074	18,177	103	1%	\$40.78
541219	Other Accounting Services	10,263	13,352	3,090	30%	\$34.88
611110	Elementary and Secondary Schools	11,051	11,736	685	6%	\$24.00
522292	Real Estate Credit	9,587	11,649	2,061	22%	\$85.99
454110	Electronic Shopping and Mail-Order Houses	7,000	9,398	2,398	34%	\$31.63
446110	Pharmacies and Drug Stores	6,855	7,398	543	8%	\$31.98
621511	Medical Laboratories	5,237	7,172	1,935	37%	\$46.80
492110	Couriers and Express Delivery Services	5,857	7,117	1,260	22%	\$28.60
541211	Offices of Certified Public Accountants	6,729	6,989	260	4%	\$55.91

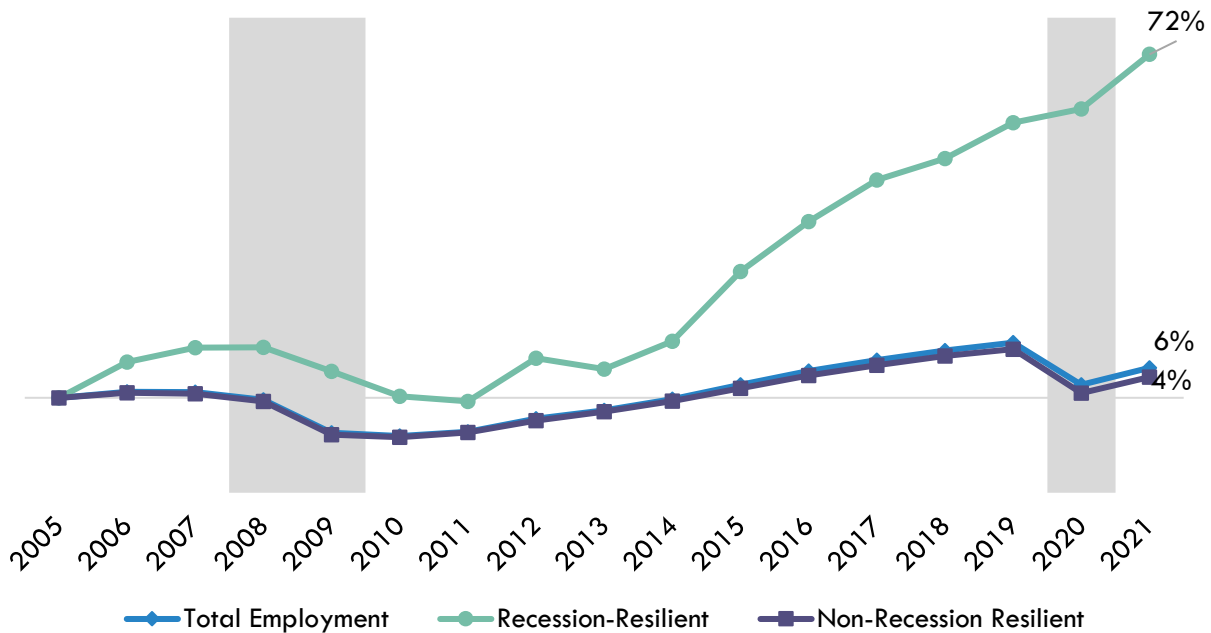
Orange County's Recession-Resilient Industries

There are only 16 industries in Orange County that are considered both Great Recession-resilient and COVID-19 Pandemic Recession-resilient. Examples of these resilient industries include:

- Electrical Contractors and Other Wiring Installation Contractors;
- Elementary and Secondary Schools;
- Electronic Shopping and Mail-Order Houses; and
- Offices of Certified Public Accountants.

From 2005 to 2021, these Recession-Resilient Industries grew by 72%, while non-recession resilient industries grew by 4%. In 2005, Recession-Resilient Industries accounted for 3% of all employment in Orange County. By 2021, these industries grew to account for 5% of all employment in the county. **Exhibit 6** shows the industry employment percentage change between 2005 and 2021 for Recession-Resilient Industries, all industries, and non-recession-resilient industries; gray areas indicate the Great Recession and the COVID-19 Pandemic Recession periods, respectively. A full list of the 16 Recession-Resilient Industries is included in Appendix A.

Exhibit 6: Industry Employment Percentage Change, 2005-2021



Occupations

Great Recession-Resilient Jobs

The following section provides three separate analyses for jobs: Great Recession-Resilient Jobs, COVID-19 Pandemic Recession-Resilient Jobs, and Jobs for Recovery. The employment and wage criteria were the same for both Great Recession-resilient industries and Great Recession-Resilient Jobs. Though the criteria for Resilient Industries included the number of jobs to identify those industries with a significant number of jobs, the criteria for Resilient Jobs uses annual job openings to identify jobs with significant labor market demand.

Great Recession-Resilient jobs are those which have met the following criteria for employment, annual job openings, and wages between 2005 and 2019:

-
- **Employment** – Less than 7.4% employment decline between 2005 and 2009, as well as greater than 21.4% employment growth between 2010 and 2019.
 - **Annual Job Openings** – Annual openings at or above the median during the Great Recession (2007-2009), as well as at or above the median between 2010 and 2019.
 - **Wages** – Entry-level hourly earnings are at or above \$20.63.
-

These three criteria were predicated on data patterns that occurred between 2005 and 2019. On average, occupations experienced a 7.4% employment decline between 2005 and the end of the Great Recession in Orange County. While these occupations performed better than average during the Great Recession, it is also important to consider their performance during the post-recession recovery. On average, occupations experienced a 21.4% increase in employment between 2010 and 2019 in Orange County. The median labor market demand for all occupations in Orange County during the Great Recession was 65 annual job openings. During the post-recession period, the median labor market demand was 75 annual job openings. This study excludes occupations that did not have labor market demand above the median in both periods. The living wage for a single adult in Orange County is \$20.63. This figure measures the cost of basic expenses, including housing, food, health care, and transportation. Generally, the living wage increases as family size increases; however, for the purpose of this study, only occupations that provide entry-level hourly earnings at or above the living wage for a single adult were included in the analysis.

Although there are nearly 800 occupational codes in the SOC system, only 50 occupations met the above criteria and are therefore considered Great Recession-Resilient Jobs. Of the 50 Great Recession-Resilient

Jobs, 32% (16) are considered middle-skill jobs. All 16 middle-skill, Great Recession-Resilient Jobs fall into one of Orange County’s eight priority sectors.¹⁴

In the original *Resilient Jobs* report from 2020, there were 35 jobs that were considered recession-resilient during the Great Recession and post-recession period. Due to changes in the federal SOC system that resulted in several changes to SOC codes, the 35 jobs from the 2020 report represent 41 current SOC codes. Of those 41 occupations, 46% (19) are no longer considered Great Recession-Resilient Jobs. Furthermore, of those 19, 84% (16) no longer meet the employment or annual openings criteria due to changes in Lightcast’s historical data – the remaining 16% (3) no longer meet the living wage criteria. Though several occupations are no longer considered Great Recession-resilient, there are 29 new jobs that are considered Great Recession-resilient due to changes in Lightcast’s historical data.

Exhibit 7, on the following page, shows the typical entry-level education, annual job openings from 2007-2009 and 2010-2019, entry-level and median hourly earnings, and the employment percentage change between 2005 and 2019 for the 16 Great Recession-resilient middle-skill jobs. The occupations in **Exhibit 7** are sorted in descending order, starting with occupations that had the highest number of annual job openings from 2007-2009. A full list of the 50 Great Recession-Resilient Jobs is included in Appendix B.



¹⁴ The eight Priority Sectors are: Advanced Manufacturing; Advanced Transportation and Logistics; Business and Entrepreneurship; Energy, Construction, and Utilities; Health; Information Communication Technology (ICT) and Digital Media; Life Sciences and Biotechnology; and Retail, Hospitality, and Tourism.

Exhibit 7: Great Recession-Resilient, Middle-Skill Jobs in Orange County

SOC	Occupation	Typical Entry Level Education	Annual Openings (2007-2009)	Annual Openings (2010-2019)	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	2005 – 2019 % Employment Change	Great Recession Resilient Job in 2020 Report
29-1141	Registered Nurses	Bachelor's degree	1,068	1,832	\$46.02	\$56.03	40%	Yes
47-2111	Electricians	High school diploma or equivalent	896	1,241	\$22.43	\$30.40	37%	No
41-3021	Insurance Sales Agents	High school diploma or equivalent	640	1,255	\$22.29	\$30.01	36%	No
15-1232	Computer User Support Specialists	Some college, no degree	406	741	\$22.00	\$28.69	48%	No
49-9041	Industrial Machinery Mechanics	High school diploma or equivalent	286	258	\$23.52	\$30.01	133%	No
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	Postsecondary nondegree award	265	509	\$22.57	\$30.13	85%	No
11-3012	Administrative Services Managers	Bachelor's degree	212	347	\$37.60	\$47.33	50%	No
29-1292	Dental Hygienists	Associate degree	170	236	\$48.77	\$48.82	53%	No
49-2098	Security and Fire Alarm Systems Installers	High school diploma or equivalent	143	138	\$24.94	\$31.84	42%	No
13-1081	Logisticians	Bachelor's degree	115	268	\$30.04	\$38.45	136%	Yes
27-3091	Interpreters and Translators	Bachelor's degree	98	129	\$20.66	\$33.54	83%	No
19-4099	Life, Physical, and Social Science Technicians, All Other	Associate degree	97	153	\$20.87	\$27.55	112%	Yes
31-2021	Physical Therapist Assistants	Associate degree	92	93	\$30.31	\$37.61	80%	No
11-3071	Transportation, Storage, and Distribution Managers	High school diploma or equivalent	80	204	\$36.39	\$48.76	83%	No
11-3013	Facilities Managers	Bachelor's degree	79	133	\$36.53	\$47.21	62%	No
31-9093	Medical Equipment Preparers	High school diploma or equivalent	73	86	\$21.38	\$22.56	65%	Yes

COVID-19 Pandemic Recession-Resilient Jobs

COVID-19 Pandemic Recession-Resilient Jobs are those which have met the following three criteria for employment, annual job openings, and wages between 2019 and 2021:

-
- **Employment** – Less than 8% employment decline between 2019 and 2020, as well as greater than 3.5% employment growth between 2020 and 2021.
 - **Annual Job Openings** – Annual openings at or above the median during the COVID-19 Pandemic Recession (2019-2020), as well as at or above the median between 2020 and 2021.
 - **Wages** – Entry-level hourly earnings are at or above \$20.63.
-

These three criteria were predicated on data patterns that occurred between 2019 and 2021. On average, occupations experienced an 8% employment decline between 2019 and 2020 in Orange County. On average, occupations experienced a 3.5% increase in employment between 2020 and 2021 in Orange County. The median labor market demand for all occupations in Orange County during the COVID-19 Pandemic Recession was 71 annual job openings. During the post-recession period, the median labor market demand was 79 annual job openings. This study excludes occupations that did not have labor market demand above the median in both periods. The living wage for a single adult in Orange County is \$20.63. This figure measures the cost of basic expenses, including housing, food, health care, and transportation. Generally, the living wage increases as family size increases; however, for the purpose of this study, only occupations that provide entry-level hourly earnings at or above the living wage for a single adult were included in the analysis.

Although there are nearly 800 occupational codes in the SOC system, only 72 occupations met the above criteria and are therefore considered COVID-19 Pandemic Recession-Resilient Jobs. Of the 72 COVID-19 Pandemic-Resilient Jobs, 42% (30) are considered middle-skill jobs. Of the 30 middle-skill, COVID-19 Pandemic-Resilient Jobs, 93% (28) fall into one of Orange County's eight priority sectors. Furthermore, of the 72 COVID-19 Pandemic-Resilient Jobs, 44% (32) were considered pandemic-resilient in the 2020 *Resilient Jobs* report.

Exhibit 8, on the following page, shows the typical entry-level education, annual job openings from 2019-2020 and 2020-2021, entry-level and median hourly earnings, and the employment percentage change between 2019 and 2021 for these COVID-19 Pandemic Recession-resilient middle-skill jobs. The occupations in **Exhibit 8** are sorted in descending order, starting with occupations that had the highest number of annual job openings from 2019-2020. A full list of the 72 COVID-19 Pandemic Recession-Resilient Jobs is included in Appendix B.

Exhibit 8: COVID-19 Pandemic Recession-Resilient, Middle-Skill Jobs in Orange County

SOC	Occupation	Typical Entry-Level Education	Annual Openings (2019-2020)	Annual Openings (2020-2021)	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	2019-2021 % Employment Change
11-1021	General and Operations Managers	Bachelor's degree	2,193	7,587	\$36.80	\$51.15	13%
29-1141	Registered Nurses	Bachelor's degree	1,305	2,645	\$46.02	\$56.03	2%
41-3021	Insurance Sales Agents	High school diploma or equivalent	1,156	1,291	\$22.29	\$30.01	7%
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	High school diploma or equivalent	827	1,631	\$28.61	\$38.40	6%
13-1028	Buyers and Purchasing Agents	Bachelor's degree	549	915	\$23.48	\$31.48	3%
51-1011	First-Line Supervisors of Production and Operating Workers	High school diploma or equivalent	534	866	\$23.27	\$30.13	1%
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	High school diploma or equivalent	435	1,294	\$23.20	\$26.03	21%
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	High school diploma or equivalent	340	715	\$30.89	\$39.68	4%
13-1051	Cost Estimators	Bachelor's degree	288	671	\$24.73	\$32.77	6%
11-3012	Administrative Services Managers	Bachelor's degree	270	597	\$37.60	\$47.33	7%
47-2073	Operating Engineers and Other Construction Equipment Operators	High school diploma or equivalent	262	349	\$28.59	\$37.60	3%
33-3012	Correctional Officers and Jailers	High school diploma or equivalent	255	173	\$28.99	\$35.17	35%
27-3091	Interpreters and Translators	Bachelor's degree	254	199	\$20.66	\$33.54	23%
17-3011	Architectural and Civil Drafters	Associate degree	238	523	\$24.20	\$30.39	17%
43-3051	Payroll and Timekeeping Clerks	High school diploma or equivalent	213	351	\$21.54	\$27.85	1%
13-2028	Property Appraisers and Assessors	Bachelor's degree	197	186	\$24.24	\$35.56	20%
15-1241	Computer Network Architects	Bachelor's degree	194	270	\$37.50	\$52.69	15%
29-1292	Dental Hygienists	Associate degree	179	1,061	\$48.77	\$48.82	30%
49-2098	Security and Fire Alarm Systems Installers	High school diploma or equivalent	141	533	\$24.94	\$31.84	34%

SOC	Occupation	Typical Entry-Level Education	Annual Openings (2019-2020)	Annual Openings (2020-2021)	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	2019-2021 % Employment Change
11-3071	Transportation, Storage, and Distribution Managers	High school diploma or equivalent	135	474	\$36.39	\$48.76	16%
25-2012	Kindergarten Teachers, Except Special Education	Bachelor's degree	118	229	\$36.20	\$46.86	27%
19-4061	Social Science Research Assistants	Bachelor's degree	110	105	\$21.89	\$22.12	46%
29-2034	Radiologic Technologists and Technicians	Associate degree	108	360	\$29.56	\$38.75	15%
49-9062	Medical Equipment Repairers	Associate degree	104	212	\$24.61	\$32.18	21%
11-3013	Facilities Managers	Bachelor's degree	100	233	\$36.53	\$47.21	6%
33-1012	First-Line Supervisors of Police and Detectives	High school diploma or equivalent	99	159	\$58.35	\$72.60	43%
47-2071	Paving, Surfacing, and Tamping Equipment Operators	High school diploma or equivalent	89	124	\$29.62	\$39.20	52%
29-2032	Diagnostic Medical Sonographers	Associate degree	82	159	\$38.74	\$48.69	21%
51-8021	Stationary Engineers and Boiler Operators	High school diploma or equivalent	75	162	\$23.46	\$29.94	51%
33-9093	Transportation Security Screeners	High school diploma or equivalent	72	137	\$21.33	\$22.39	21%

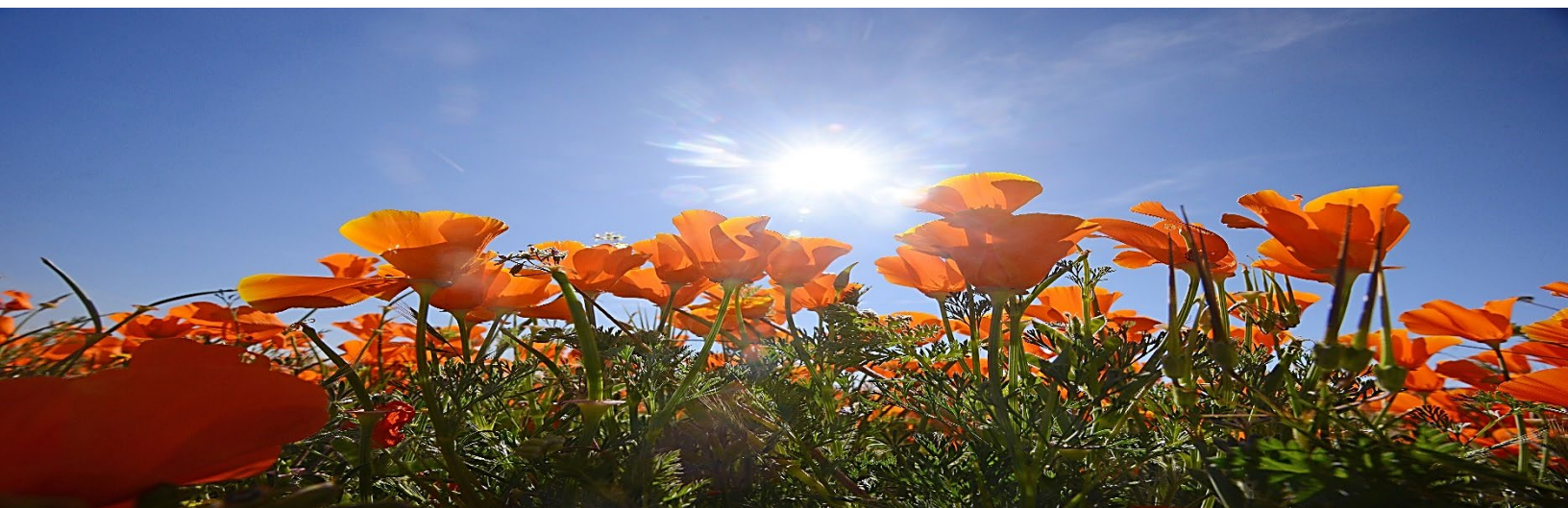
Pandemic-Resilience: Job Postings and Traditional LMI Comparison

In the original *Resilient Jobs* report from 2020, the OC COE analyzed online job postings data from March through August 2020 to identify the jobs that were posted most frequently amid the tumultuous first six months of the COVID-19 Pandemic. In order to be considered pandemic-resilient, jobs had to have been in the top 100 most frequently posted jobs for at least one month between March and August 2020. Of the nearly 800 occupations in the SOC system, 126 jobs were considered pandemic-resilient using online job postings. Due to changes in the federal SOC system that resulted in several changes to SOC codes, those 126 jobs currently represent 137 SOC codes. Of those 137, only 23% (32) are now considered COVID-19 Pandemic Recession-resilient when applying the traditional LMI criteria listed above.

Notably, there were no below middle-skill jobs considered COVID-19 Pandemic Recession-resilient using both online job postings and traditional LMI, primarily because these jobs did not meet the living wage criteria. Additionally, jobs that were considered resilient using job postings and traditional LMI have significantly higher entry-level hourly earnings (\$30.45) than those that are not (\$21.48).

Furthermore, there is no apparent relationship between how frequently a job was listed in the Top 100 jobs and COVID-19 Pandemic Recession-resiliency using traditional LMI. On average, jobs that were considered pandemic-resilient using online job postings but are not considered COVID-19 Pandemic Recession-resilient using traditional LMI were listed in the Top 100 jobs list for 4.8 months while those that are considered COVID-19 Pandemic Recession-resilient using traditional LMI were listed in the Top 100 jobs for 4.68 months.

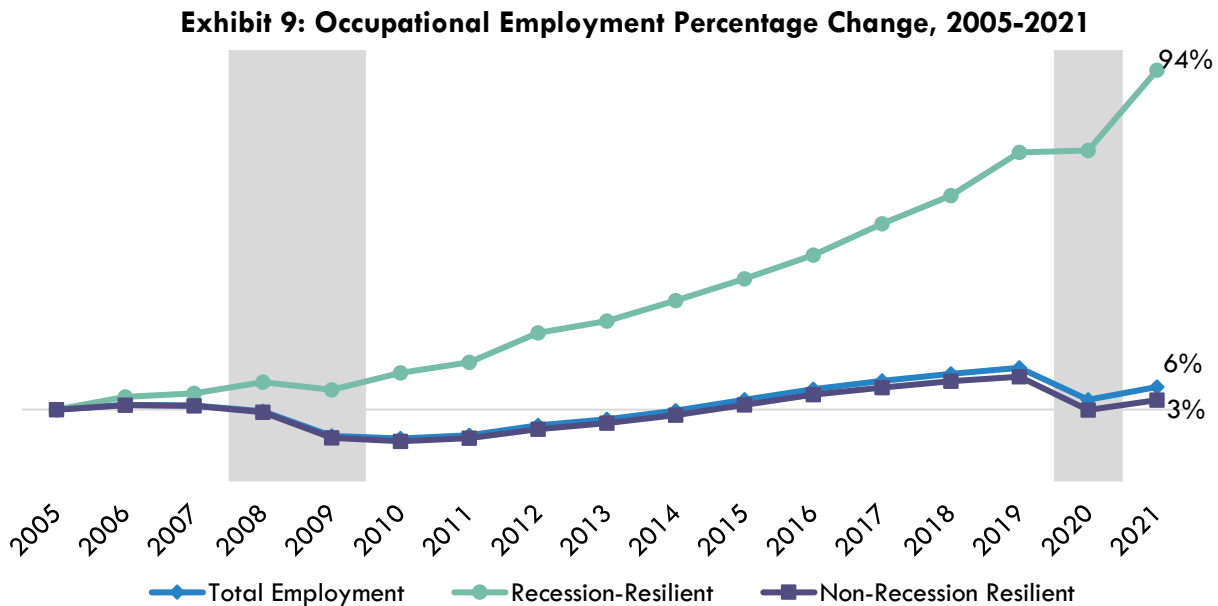
When considering only the jobs that were listed in the Top 50 jobs, the results are similar. Jobs that were considered pandemic-resilient with job postings but not COVID-19 Pandemic Recession-resilient with traditional LMI were listed in the Top 50 jobs from March to August 2020 an average of 4.87 months, while those that are considered COVID-19 Pandemic Recession-resilient with traditional LMI were in the top 50 Jobs an average of 4.7 months. These findings suggest that online job postings are not the most accurate predictor of growth or annual openings.



Orange County's Recession-Resilient Jobs

There are only 23 occupations that are considered both Great Recession-resilient and COVID-19 Pandemic Recession-resilient. From 2005 to 2021, these Recession-Resilient Jobs grew by 94%, compared to non-recession resilient jobs which only grew by 3%. In 2005, Recession-Resilient Jobs accounted for 4% of all employment in Orange County. By 2021, these jobs grew to account for 7% of all employment in the county.

Exhibit 9 shows the occupational employment percentage change between 2005 and 2021 for Recession-Resilient Jobs, all jobs, and non-recession-resilient jobs; gray areas indicate the Great Recession and the COVID-19 Pandemic Recession periods, respectively.



Of the 23 Resilient Jobs, 35% (8) are considered middle-skill occupations. All eight middle-skill Resilient Jobs fall into one of Orange County's eight priority sectors. Additionally, three middle-skill Resilient Jobs were included in one of U.S. News' Best Jobs lists:

- **U.S. News Best Job**
 - Registered Nurses: 17th
 - Dental Hygienists: 35th
- **U.S. News Highest Paying Job Without a College Degree**
 - Insurance Sales Agents: 14th

Exhibit 10 shows the priority sector, typical entry-level education, number of jobs in 2005 and 2021, employment percentage change between 2005 and 2021, and entry-level and median hourly earnings for these eight middle-skill Recession-Resilient Jobs. The occupations in **Exhibit 10** are sorted in descending order, starting with occupations that have the highest entry-level hourly earnings.

Exhibit 10: Middle-Skill Recession-Resilient Jobs

SOC	Occupation	Typical Entry Level Education	Priority Sector	2005 Jobs	2021 Jobs	2005-2021 % Change	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
11-3012	Administrative Services Managers	Bachelor's degree	Business and Entrepreneurship	2,227	3,572	60%	\$37.60	\$47.33
11-3013	Facilities Managers	Bachelor's degree	Business and Entrepreneurship	757	1,298	71%	\$36.53	\$47.21
11-3071	Transportation, Storage, and Distribution Managers	High school diploma or equivalent	Advanced Transportation and Logistics	994	2,108	112%	\$36.39	\$48.76
27-3091	Interpreters and Translators	Bachelor's degree	ICT and Digital Media	538	1,209	125%	\$20.66	\$33.54
29-1141	Registered Nurses [^]	Bachelor's degree	Health	17,913	25,415	42%	\$46.02	\$56.03
29-1292	Dental Hygienists [^]	Associate degree	Health	1,788	3,543	98%	\$48.77	\$48.82
41-3021	Insurance Sales Agents [^]	High school diploma or equivalent	Business and Entrepreneurship	6,986	10,158	45%	\$22.29	\$30.01
49-2098	Security and Fire Alarm Systems Installers	High school diploma or equivalent	Energy, Construction, and Utilities	869	1,659	91%	\$24.94	\$31.84

[^]Denotes a U.S. News and World Report Best Job

Jobs for Recovery

In response to the ongoing economic recovery following the COVID-19 Pandemic Recession, the OC COE published *Jobs for Recovery* in October 2021. This report identified in-demand, growing jobs to assist displaced workers find viable occupational opportunities that could be obtained with training at an Orange County community college. As noted in the Executive Summary, there are 39 occupations that met the following criteria to be considered a Job for Recovery:

-
- **Employment** – Greater than the average 2.5% projected employment increase between 2021 and 2026 in Orange County.
 - **Annual Job Openings** – Projected annual job openings above the average of 524 in Orange County between 2021 and 2026.
-

Although there are nearly 800 occupational codes in the SOC system, only 39 occupations met the above criteria and are therefore considered Jobs for Recovery in Orange County. Of the 39 Jobs for Recovery, 46% (18) are considered middle-skill jobs. Notably, 10 of the 18 middle-skill Jobs for Recovery were included in at least one of U.S. News' best jobs list:

- **U.S. News Best Job**
 - Registered Nurses: 17th
 - Home Health and Personal Care Aides: 65th
 - Medical Assistants: 77th
 - Licensed Practical and Licensed Vocational Nurses: 79th
 - Electricians: 80th
 - Massage Therapists: 81st
 - Manicurists and Pedicurists: 96th
- **U.S. News Best Job Without a College Degree**
 - Home Health and Personal Care Aides: 5th
 - Medical Assistants: 8th
 - Licensed Practical and Licensed Vocational Nurses: 9th
 - Electricians: 10th
 - Massage Therapists: 11th
 - Manicurists and Pedicurists: 19th
 - Medical Secretaries and Administrative Assistants: 20th
- **U.S. News Highest Paying Job Without a College Degree**
 - Plumbers, Pipefitters, and Steamfitters: 7th
 - Computer User Support Specialists: 15th

Exhibit 11, on the following page, shows the typical entry-level education, projected annual job openings from 2021-2026, entry-level and median hourly earnings, and the projected employment percentage change between 2021-2026 for these middle-skill Jobs for Recovery. The occupations in **Exhibit 11** are sorted in descending order, starting with occupations that have the highest projected number of annual job openings from 2021-2026. A full list of the 39 Jobs for Recovery is included in Appendix B.



Exhibit 11: Jobs for Recovery in Orange County (by Projected Annual Openings from 2021-2026)

SOC	Occupation	Typical Entry-Level Education	Annual Openings (2021-2026)	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	2019-2021 % Employment Change
31-1128	Home Health and Personal Care Aides [^]	High school diploma or equivalent	9,414	\$14.15	\$14.15	23%
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	High school diploma or equivalent	1,852	\$17.03	\$17.78	8%
29-1141	Registered Nurses [^]	Bachelor's degree	1,654	\$46.02	\$56.03	6%
43-4171	Receptionists and Information Clerks	High school diploma or equivalent	1,329	\$14.30	\$17.21	4%
53-3032	Heavy and Tractor-Trailer Truck Drivers	Postsecondary nondegree award	1,307	\$18.88	\$24.02	3%
31-1131	Nursing Assistants	Postsecondary nondegree award	1,300	\$16.12	\$18.53	10%
39-9011	Childcare Workers	High school diploma or equivalent	1,234	\$14.05	\$14.82	7%
31-9092	Medical Assistants [^]	Postsecondary nondegree award	1,201	\$17.27	\$18.51	9%
39-5092	Manicurists and Pedicurists [^]	Postsecondary nondegree award	1,177	\$10.24	\$14.00	19%
47-2111	Electricians [^]	High school diploma or equivalent	1,093	\$22.43	\$30.40	8%
31-9011	Massage Therapists [^]	Postsecondary nondegree award	1,087	\$13.05	\$20.09	17%
25-9045	Teaching Assistants, Except Postsecondary	Some college, no degree	1,076	\$17.37	\$17.96	5%
43-6013	Medical Secretaries and Administrative Assistants [^]	High school diploma or equivalent	1,048	\$18.08	\$22.66	6%
31-9091	Dental Assistants	Postsecondary nondegree award	709	\$18.47	\$23.25	7%
29-2061	Licensed Practical and Licensed Vocational Nurses [^]	Postsecondary nondegree award	683	\$29.41	\$30.59	10%
47-2152	Plumbers, Pipefitters, and Steamfitters [^]	High school diploma or equivalent	654	\$22.32	\$30.52	4%
15-1232	Computer User Support Specialists [^]	Some college, no degree	609	\$22.00	\$28.69	5%
21-1093	Social and Human Service Assistants	High school diploma or equivalent	606	\$17.21	\$21.15	16%

[^]Denotes a U.S. News and World Report Best Job

Related Community College Programs

Resilient Jobs

Orange County Community Colleges have existing programs that could train job seekers for all Recession-Resilient, middle-skill jobs except Insurance Sales Agents. The OC COE reviewed active programs listed in the Chancellor’s Office Curriculum Inventory (COCI) to identify which community colleges offer programs related to these Recession-Resilient Jobs. Exhibit 12 shows the related TOP code and title for each program, as well as colleges that have existing programs. CTE faculty, administrators, and other stakeholders should review these programs to confirm that they provide the knowledge, skills, and abilities for students to successfully obtain employment in the occupations listed in [Exhibit 12](#).

Exhibit 12: Community College Programs Related to Middle-Skill Recession-Resilient Jobs

Occupation (SOC)	TOP Code and Title	College
Administrative Services Managers (11-3012)	0501.00 - Business and Commerce, General	Coastline
		Saddleback
		Coastline
		Cypress
	0505.00 - Business Administration	Fullerton
		Golden West
		Irvine
		Orange Coast
		Saddleback
		Santa Ana
		Santiago Canyon
	0506.00 - Business Management	Coastline
		Cypress
		Fullerton
		Golden West
		Irvine
		North Orange Adult
		Orange Coast
		Santa Ana
		Santiago Canyon
Coastline		
0506.30 – Management Development and Supervision	Cypress	
	Irvine	
	Saddleback	
0514.40 - Office Management	Santa Ana	
	Santiago Canyon	
0836.10 - Recreation Assistant	Cypress	
0957.00 - Civil and Construction Management Technology	Cypress	
1202.00 - Hospital and Health Care Administration	Fullerton	
1307.20 - Lodging Management	Cypress	
	Golden West	

Occupation (SOC)	TOP Code and Title	College
Facilities Managers (11-3013)	0501.00 - Business and Commerce, General	Orange Coast
		Coastline
		Saddleback
	0505.00 - Business Administration	Coastline
		Cypress
		Fullerton
		Golden West
		Irvine
		Orange Coast
		Saddleback
	Santa Ana	
	0506.00 - Business Management	Santiago Canyon
		Coastline
		Cypress
		Fullerton
		Golden West
		Irvine
		North Orange Adult
	Orange Coast	
0506.30 - Management Development and Supervision	Santa Ana	
	Santiago Canyon	
	Coastline	
	Cypress	
	Irvine	
0514.40 - Office Management	Saddleback	
0836.10 - Recreation Assistant	Santa Ana	
0957.00 - Civil and Construction Management Technology	Santiago Canyon	
1202.00 - Hospital and Health Care Administration	Coastline	
	Cypress	
	Golden West	
Transportation, Storage, and Distribution Managers (11-3071)	0501.00 - Business and Commerce, General	Coastline
	0501.00 - Business and Commerce, General	Saddleback
	0505.00 - Business Administration	Coastline
		Cypress
		Fullerton
		Golden West
		Irvine
		Orange Coast
		Saddleback
	Santa Ana	
0506.00 - Business Management	Santiago Canyon	
	Coastline	

Occupation (SOC)	TOP Code and Title	College
		Cypress
		Fullerton
		Golden West
		Irvine
		North Orange Adult
		Orange Coast
		Santa Ana
		Santiago Canyon
	3020.00 - Aviation and Airport Management and Services	Cypress
		Orange Coast
	3020.10 - Aviation and Airport Management	Cypress
Interpreters and Translators (27-3091)	0850.10 - Sign Language Interpreting	Golden West
		Santiago Canyon
	2140.00 - Legal and Community Interpretation	Santa Ana
Registered Nurses (29-1141)	1230.10 - Registered Nursing	Cypress
		Golden West
		Saddleback
		Santa Ana
Dental Hygienists (29-1292)	1240.20 - Dental Hygienist	Cypress
Insurance Sales Agents (41-3021)	0512.00 – Insurance	No Programs
Security and Fire Alarm Systems Installers (49-2098)	0952.20 - Electrical	Irvine
		North Orange Adult
		Orange Coast
		Santiago Canyon

Jobs for Recovery

The Jobs for Recovery identified in this report can be grouped into four “training buckets” based on the typical length of time it would take to complete a related program: Short-Term Training (1-3 months), Moderate-Term Training (4-11 months), Long-Term Training (1-2 years), and Pathway/Transfer (2+ years). The full methodology for each training bucket is included in Appendix D. The training buckets for all 18 middle-skill Jobs for Recovery are listed in **Exhibit 13**. Jobs for which Orange County community colleges have training programs are marked with an asterisk (*). Training programs for 78% (14) of the middle-skill Jobs for Recovery can be completed in less than one year.

Exhibit 13: Middle-Skill Jobs for Recovery in Orange County by Length of Training Program

Occupations			
Short-Term Training (1-3 months)			
Childcare Workers*	First-Line Supervisors of Food Preparation and Serving Workers*	Home Health and Personal Care Aides*	Nursing Assistants*
Receptionists and Information Clerks	Social and Human Service Assistants*		
Moderate-Term Training (4-11 Months)			
Computer User Support Specialists*	Dental Assistants*	Licensed Practical and Licensed Vocational Nurses	Manicurists and Pedicurists*
Massage Therapists*	Medical Assistants*	Medical Secretaries and Administrative Assistants*	Teaching Assistants, Except Postsecondary*
Long-Term Training (1-2 Years)			
Electricians*	Heavy and Tractor-Trailer Truck Drivers	Plumbers, Pipefitters, and Steamfitters*	Registered Nurses*

Orange County Community Colleges have existing programs that could train job seekers for 15 of the 18 middle-skill Jobs for Recovery. The OC COE reviewed active programs listed in the Chancellor’s Office Curriculum Inventory (COCI) to identify which community colleges offer programs related to each Job for Recovery. **Exhibit 14** shows the related TOP code and title for each program, as well as colleges that have existing programs. CTE faculty, administrators, and other stakeholders should review these programs to confirm that they provide the knowledge, skills, and abilities for students to successfully obtain employment in the occupations listed in **Exhibit 14**.

Exhibit 14: Community College Programs Related to Middle-Skill Jobs for Recovery

Occupation (SOC)	TOP Code and Title	College
Social and Human Service Assistants (21-1093)	2104.00 - Human Services	Coastline
		Cypress
		Saddleback
		Santa Ana
Teaching Assistants, Postsecondary (25-9044)	0802.00 - Educational Aide (Teacher Assistant)	Coastline
		Cypress
		Santa Ana
		Santiago Canyon
Registered Nurses (29-1141)	1230.10 - Registered Nursing	Cypress
		Golden West
		Saddleback
		Santa Ana
Licensed Practical and Licensed Vocational Nurses (29-2061)	1230.20 - Licensed Vocational Nursing	No Programs
Home Health and Personal Care Aides (31-1128)	1230.80 - Home Health Aide	Saddleback
		Santiago Canyon
	1299.00 - Other Health Occupations	North Orange Adult
		Santa Ana
Nursing Assistants (31-1131)	1230.30 - Certified Nurse Assistant	Santiago Canyon
		Saddleback
		Santa Ana
Massage Therapists (31-9011)	1262.00 - Massage Therapy	Fullerton
Dental Assistants (31-9091)	1240.10 - Dental Assistant	Cypress
		Orange Coast
		North Orange Adult
Medical Assistants (31-9092)	1208.00 - Medical Assisting	Orange Coast
		Saddleback
		Santa Ana
	1208.10 - Clinical Medical Assisting	Saddleback
	First-Line Supervisors of Food Preparation and Serving Workers (35-1012)	1306.00 - Nutrition, Foods, and Culinary Arts
Fullerton		
Orange Coast		
Saddleback		
Santa Ana		
1306.20 - Dietetic Services and Management		Orange Coast
1306.30 - Culinary Arts		Cypress
		Orange Coast
		Saddleback
		Santa Ana
	Santiago Canyon	
1307.10 - Restaurant and Food Services and Management	Cypress	
Manicurists and Pedicurists		Orange Coast
		Fullerton

Occupation (SOC)	TOP Code and Title	College
(39-5092)	3007.00 - Cosmetology and Barbering	Golden West Saddleback Santiago Canyon
Childcare Workers (39-9011)	1305.00 - Child Development/Early Care and Education	Fullerton
		Irvine
		North Orange Adult
		Orange Coast
		Saddleback
	1305.10 - Child and Adolescent Development	Santa Ana
		Santiago Canyon
		Coastline
		Fullerton
		Golden West
	1305.40 - Preschool Age Children	Saddleback
		Santiago Canyon
		Fullerton
	1305.50 - The School Age Child	Orange Coast
		Santa Ana
Santiago Canyon		
Irvine		
1305.90 - Infants and Toddlers	Saddleback	
	Irvine	
	Orange Coast	
	Saddleback	
Receptionists and Information Clerks (43-4171)	No Programs	No Programs
Medical Secretaries and Administrative Assistants (43-6013)	1208.00 - Medical Assisting	North Orange Adult
		Orange Coast
	1208.20 - Administrative Medical Assisting	Saddleback
		Santa Ana
1223.10 - Health Information Coding	Saddleback	
Electricians (47-2111)	0952.20 - Electrical	Irvine
		North Orange Adult
		Orange Coast
Plumbers, Pipefitters, and Steamfitters (47-2152)	0952.30 - Plumbing, Pipefitting and Steamfitting	Santiago Canyon Orange Coast

Career Pathways to Resilient Jobs for Recovery

Only four occupations met the criteria to be considered both a Resilient Job and a Job for Recovery: Managers, All Other; Project Management Specialists; Market Research Analysts and Marketing Specialists; and Registered Nurses. This section analyzes career pathways, as well as community college programs that can support students along that pathway, for three of the four occupations that are considered a Resilient Job and Job for Recovery. Managers, All Other was not included in the analysis because “All Other” occupations represent a wide range of characteristics that do not fit into one of the existing SOC codes. These “All Other” occupations typically include emerging occupations for which data is not available.

To define a career pathway, the OC COE used the O*NET Related Occupations dataset to identify the top 10 related occupations for each Resilient Job/Job for Recovery. Each occupation has a related COE skill-level that determines if an occupation is considered below middle-skill, middle-skill, or above middle-skill. Middle-skill occupations typically require a community college education. The OC COE classified these related occupations into three categories: feeder occupations, lateral occupations, and advancement occupations.

Feeder occupations are those that typically require less education and have lower entry-level wages but could lead to employment in a Resilient Job/Job for Recovery, lateral occupations are those that have similar education requirements and wages, and advancement occupations are those that typically require more education or would result in a significant wage gain. In an ideal pathway, an individual would earn an educational credential as the initial step, become employed in a feeder occupation, reengage in training at an educational institution to earn additional credentials, then advance in their career with a promotion or significant wage gain.¹⁵ The OC COE also analyzed skills listed in online job postings to identify the shared skills between related occupations and determine which skills would be needed to advance from a feeder occupation to a Resilient Job/Job for Recovery. To support advancement from these feeder occupations to each Resilient Job for Recovery, the County community colleges should consider the skills taught in existing programs and how they can bridge the gap between a feeder occupation and a Resilient Job for Recovery.

An educational pathway is the corresponding training an individual can engage with to advance along the career pathway. To determine the educational pathways for each occupation, the OC COE used the COE TOP-CIP-SOC Crosswalk to determine the related TOP codes for each occupation. Using the Chancellor’s Office Curriculum Inventory (COCI), the OC COE identified active community college programs for each of those TOP codes.

¹⁵ Lauren Eyster and Semhar Gebrekristos, "Fulfilling the Promise of Career Pathways: Strategies That Support Career Advancement," Urban Institute, last modified October 11, 2018, <https://www.urban.org/research/publication/fulfilling-promise-career-pathways-strategies-support-career-advancement>.

Career Pathway: Project Management Specialists

Though project management is not a new skill, *project management specialists* is a new occupation that was added to the SOC system in 2018. This occupation is considered above middle-skill because it typically requires a bachelor's degree and nearly 70% of workers in the field have completed a bachelor's, master's, or doctoral degree as their highest level of education. Though there is no required license for this occupation, jobseekers would likely benefit from holding a third-party credential such as a Project Management Professional (PMP) certification.

When examining the top 10 related occupations for *project management specialists*, 70% (7) are above middle-skill and the remaining 30% (3) are middle-skill. Two occupations, both of which are middle-skill, are considered feeder occupations: *logisticians* and *production, planning, and expediting clerks*. **Exhibit 15** shows the related occupations for *project management specialists*, as well as the typical entry-level education, skill-level, and the O*NET Relatedness ranking for each occupation.

Exhibit 15: Related Occupations for Project Management Specialists

SOC	Occupation	Typical Entry-Level Education	Skill Level	O*NET Relatedness Rank	Occupation Type
13-1111	Management Analysts	Bachelor's degree	Above Middle-Skill	1	Lateral
11-3021	Computer and Information Systems Managers	Bachelor's degree	Above Middle-Skill	2	Advancement
13-1081	Logisticians	Bachelor's degree	Middle-Skill	3	Feeder
15-1252	Software Developers	Bachelor's degree	Above Middle-Skill	4	Advancement
11-9041	Architectural and Engineering Managers	Bachelor's degree	Above Middle-Skill	5	Advancement
17-2112	Industrial Engineers	Bachelor's degree	Above Middle-Skill	6	Advancement
43-5061	Production, Planning, and Expediting Clerks	High school diploma or equivalent	Middle-Skill	7	Feeder
15-1211	Computer Systems Analysts	Bachelor's degree	Above Middle-Skill	8	Advancement
11-9121	Natural Sciences Managers	Bachelor's degree	Above Middle-Skill	9	Advancement
11-3012	Administrative Services Managers	Bachelor's degree	Middle-Skill	10	Advancement

Currently, there is no specific TOP code related to project management. However, one Orange County community college (Cypress) has an air conditioning and ventilation project management program. Five community colleges offer at least one project management course and all nine Orange County community colleges have programs related to the feeder occupations *logisticians* and *production, planning, and expediting clerks*. **Exhibit 16** shows the related TOP codes and community colleges that offer training programs for these three occupations.

Exhibit 16: Community College Programs for Project Management Specialists and Related Feeder Occupations

Occupation (SOC)	TOP Code and Title	College
Project Management Specialists (13-1082)	No Programs	No Programs
Logisticians (13-1081)	0506.00 – Business Management	Coastline
		Cypress
		Fullerton
		Golden West
		Irvine Valley
Production, Planning, and Expediting Clerks (43-5061)	0510.00 – Logistics and Materials Transportation	Saddleback
		Saddleback

Exhibit 17 shows the typical entry-level wages for these feeder occupations, the percentage increase in typical entry-level wages compared to *project management specialists*, as well as the shared skills between the two occupations and the skills that a jobseeker would likely need to advance from a feeder occupation to *project management specialists*.

Exhibit 17: Wage and Skills Comparisons for Project Management Specialists and Related Feeder Occupations

Feeder Occupation	Feeder Occupation Entry-Level Wages	Entry-Level Wage Increase	Shared Skills	Skills to Advance from Feeder Occupation
Base Occupation:	Project Management Specialists (13-1161)		Base Entry-Level Wage:	\$34.65
Logisticians (13-1081)	\$30.00	15%	Microsoft Project	Project Management
				Construction
				Project Schedules
				Project Planning
				Project Scoping
Production, Planning, and Expediting Clerks (43-5061)	\$18.68	85%	Construction Management	Change Orders
				Construction Management
				Milestones
				Subcontracting
				Project Management
Production, Planning, and Expediting Clerks (43-5061)	\$18.68	85%	Microsoft Project	Project Schedules
				Project Planning
				Project Scoping, Change Orders

Orange County community colleges could consider developing dedicated project management programs and engage students that are currently enrolled in, or previously exited, business management or logistics programs. Additionally, if Orange County community colleges create project management programs, they should engage students from other programs such as construction or information technology as well as incumbent workers that may be looking to make a lateral career move or advance from their current position by obtaining project management skills.

Career Pathway: Market Research Analysts and Marketing Specialists

This occupation includes a variety of job titles ranging from marketing assistant to market research analyst and business development specialist. This occupation is considered above middle-skill because it typically requires a bachelor’s degree and nearly 80% of workers in the field have completed a bachelor’s, master’s, or doctoral degree as their highest level of education. However, the wide range of job titles suggests that there are entry-level job opportunities for jobseekers with a community college education.

When examining the top 10 related occupations, 80% (8) are above middle-skill, 10% (1) are middle-skill, and the remaining 10% (1) are below middle-skill. Two occupations, both of which are middle-skill, are considered feeder occupations: *sales representatives of services, except advertising, insurance, financial services, and travel* and *advertising sales agents*. **Exhibit 18** shows the related occupations for *market research analysts and marketing specialists*, as well as the typical entry-level education, skill-level, and the O*NET Relatedness ranking for each occupation.

Exhibit 18: Related Occupations for Market Research Analysts and Marketing Specialists

SOC	Occupation	Typical Entry-Level Education	Skill Level	O*NET Relatedness Rank	Occupation Type
11-2021	Marketing Managers	Bachelor’s degree	Above Middle-Skill	1	Advancement
11-2011	Advertising and Promotions Managers	Bachelor’s degree	Above Middle-Skill	2	Advancement
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	High school diploma or equivalent	Below Middle-Skill	3	Feeder
13-1111	Management Analysts	Bachelor’s degree	Above Middle-Skill	4	Advancement
11-2022	Sales Managers	Bachelor’s degree	Above Middle-Skill	5	Advancement
15-2051	Data Scientists	Bachelor’s degree	Above Middle-Skill	6	Advancement
41-3011	Advertising Sales Agents	High school diploma or equivalent	Middle-Skill	7	Feeder
11-2032	Public Relations Managers	Bachelor’s degree	Above Middle-Skill	8	Advancement

SOC	Occupation	Typical Entry-Level Education	Skill Level	O*NET Relatedness Rank	Occupation Type
13-2051	Financial and Investment Analysts	Bachelor's degree	Above Middle-Skill	9	Advancement
27-3031	Public Relations Specialists	Bachelor's degree	Above Middle-Skill	10	Lateral

Nine Orange County community colleges have programs related to market research analysts and marketing specialists or the related feeder occupations sales representatives of services, except advertising, insurance, financial services, and travel and advertising sales agents. **Exhibit 19** shows the related TOP codes and community colleges that offer training programs for these three occupations. Notably, seven Orange County community colleges offer marketing and distribution programs that could directly lead to entry-level employment for market research analysts and marketing specialists.

Exhibit 19: Community College Programs for Market Research Analysts and Marketing Specialists and Related Feeder Occupations

Occupation (SOC)	TOP Code and Title	College
Market Research Analysts and Marketing Specialists (13-1161)	0509.00 – Marketing and Distribution	Cypress
		Fullerton
		Golden West
		Orange Coast
		Saddleback
		Santa Ana
		Santiago Canyon
Advertising Sales Agents (41-3011)	0509.40 – Sales and Salesmanship	Fullerton
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel (41-3091)	0506.50 – Retail Store Operations and Management	Cypress
		Fullerton
		Golden West
		Orange Coast
		Saddleback
		Santa Ana
		Santiago Canyon

Exhibit 20 shows the typical entry-level wages for these feeder occupations, the percentage increase in typical entry-level wages compared to *market research analysts and marketing specialists*, as well as the shared skills between the two occupations and the skills that a jobseeker would likely need to advance from a feeder occupation to *market research analysts and marketing specialists*.

Exhibit 20: Wage and Skills Comparisons for Market Research Analysts and Marketing Specialists and Related Feeder Occupations

Feeder Occupation	Feeder Occupation Entry-Level Wages	Entry-Level Wage Increase	Shared Skills	Skills to Advance from Feeder Occupation
Base Occupation:	Market Research Analysts and Marketing Specialists (13-1161)		Base Entry-Level Wage:	\$23.13
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel (41-3091)	\$19.20	21%	Marketing	Social Media Digital Marketing Instagram Search Engine Optimization
			Customer Relationship Management	Analytics Marketing Communications Marketing Strategies Social Media Marketing
Advertising Sales Agents (41-3011)	\$20.56	13%	Marketing	Instagram
			Social Media	Analytics
			Digital Marketing	Marketing Strategies
			Marketing Communications	Social Media Marketing

Orange County community colleges have existing marketing programs that could lead to entry-level employment for *market research analysts and marketing specialists*. Additionally, Orange County community colleges could engage with students enrolled in, or those that previously exited, sales and retail store operations and management programs to encourage enrollment in marketing programs that could help students advance to a higher paying job. Additionally, Orange County community colleges could engage with current marketing professionals that are looking to upskill and add in-demand skills related to social media and search engine optimization.

Career Pathway: Registered Nurses

This occupation requires a license from the California Board of Registered Nursing. To apply for licensure, applicants must meet educational requirements, pass a background check, and pass the National Council Licensing Examination (NCLEX). There are at least four types of educational programs that students can complete to be eligible for licensure: Associate Degree in Nursing (ADN), Bachelor of Science in Nursing (BSN), Entry-Level Master’s Program in Nursing (ELM), and LVN 30-Unit Option. Though *registered nurses* typically requires a bachelor’s degree, it is considered a middle-skill occupation because of the various educational programs that provide multiple paths to employment.

When examining the top 10 related occupations, 60% (6) are above middle-skill and the remaining 40% (4) are middle-skill. Four occupations, all of which are middle-skill, are considered feeder occupations: *licensed practical and licensed vocational nurses, paramedics, emergency medical technicians, and nursing assistants*.

Exhibit 21 shows the related occupations for *registered nurses*, as well as the typical entry-level education, skill-level, and the O*NET Relatedness ranking for each occupation.

Exhibit 21: Related Occupations for Registered Nurses

SOC	Occupation	Typical Entry-Level Education	Skill Level	O*NET Relatedness Rank	Occupation Type
29-1214	Emergency Medicine Physicians	Bachelor's degree	Above Middle-Skill	1	Advancement
29-1171	Nurse Practitioners	Bachelor's degree	Above Middle-Skill	2	Advancement
29-2061	Licensed Practical and Licensed Vocational Nurses	Bachelor's degree	Middle-Skill	3	Feeder
29-1161	Nurse Midwives	High school diploma or equivalent	Above Middle-Skill	4	Lateral
29-2043	Paramedics	Bachelor's degree	Middle-Skill	5	Feeder
29-1215	Family Medicine Physicians	Bachelor's degree	Above Middle-Skill	6	Advancement
29-2042	Emergency Medical Technicians	Bachelor's degree	Middle-Skill	7	Feeder
29-1071	Physician Assistants	High school diploma or equivalent	Above Middle-Skill	8	Advancement
29-1211	Anesthesiologists	Bachelor's degree	Above Middle-Skill	9	Advancement
31-1131	Nursing Assistants	Bachelor's degree	Middle-Skill	10	Feeder

Six Orange County community colleges have programs related to *registered nurses* or the related feeder occupations *paramedics, emergency medical technicians, and nursing assistants*. There are no programs that specifically train for *licensed practical and licensed vocational nurses*. However, Cypress, Golden West, and Saddleback offer LVN 30-Unit Option programs that prepare existing *licensed practical and licensed vocational nurses* to become *registered nurses*.

Exhibit 22 shows the related TOP codes and community colleges that offer training programs for these five occupations. Notably, four Orange County community colleges offer nursing programs that could directly lead to employment for *registered nurses*. All three certified nurse assistant programs are noncredit programs.

Exhibit 22: Community College Programs for Registered Nurses and Related Feeder Occupations

Occupation (SOC)	TOP Code and Title	College
Registered Nurses (29-1141)	1230.10 – Registered Nursing	Cypress
		Golden West
		Saddleback
		Santa Ana
Emergency Medical Technicians (29-2042)	1250.00 – Emergency Medical Services	Orange Coast
Paramedics (29-2043)	1251.00 – Paramedic	Saddleback
Licensed Practical and Licensed Vocational Nurses (29-2061)	1230.20 – Licensed Vocational Nursing	No Programs
Nursing Assistants (31-1131)	1230.30 – Certified Nurse Assistant	Saddleback*
		Santa Ana*
		Santiago Canyon*

*Noncredit programs

Exhibit 23 shows the typical entry-level wages for these feeder occupations, the percentage increase in typical entry-level wages compared to *registered nurses*, as well as the shared skills between the two occupations and the skills that a jobseeker would likely need to advance from a feeder occupation to *registered nurses*.

Exhibit 23: Wage and Skills Comparisons for Registered Nurses and Related Feeder Occupations

Feeder Occupation	Feeder Occupation Entry-Level Wages	Entry-Level Wage Increase	Shared Skills	Skills to Advance from Feeder Occupation
Base Occupation:	Registered Nurses (29-1141)		Base Entry-Level Wage:	\$46.01
Emergency Medical Technicians (29-2042)	\$16.11	186%	Nursing	Nursing Care
			Acute Care	Nursing Process
				Intensive Care Unit
				Medical Surgical Nursing
				Medical Telemetry
				Pediatrics
				Discharge Planning
				Clinical Nursing
Paramedics (29-2043)	\$22.32	106%	N/A	Nursing
				Nursing Care
				Nursing Process
				Acute Care
				Intensive Care Unit
				Medical Surgical Nursing
				Medical Telemetry
				Pediatrics
				Discharge Planning
				Clinical Nursing
Licensed Practical and Licensed Vocational Nurses (29-2061)	\$29.38	57%	Nursing Nursing Care Nursing Process	Intensive Care Unit

Feeder Occupation	Feeder Occupation Entry-Level Wages	Entry-Level Wage Increase	Shared Skills	Skills to Advance from Feeder Occupation
			Acute Care	
			Medical Surgical Nursing	
			Pediatrics	Medical Telemetry
			Discharge Planning	
			Clinical Nursing	
			Nursing	Nursing Process
			Nursing Care	Intensive Care Unit
			Acute Care	Pediatrics
Nursing Assistants (31-1131)	\$16.11	186%	Medical Surgical Nursing	Discharge Planning
			Medical Telemetry	Clinical Nursing

Orange County community colleges have existing nursing programs that could lead to employment for *registered nurses*. Additionally, Orange County community colleges offer several programs that train for feeder occupations that could lead to employment as a registered nurses upon the completion of an ADN program and passing the NCLEX. Previous research has shown that about 23% of California Community College health students that earn a short-term or long-term certificate as their first award go on to earn another credential.¹⁶ Targeted engagement of students enrolled in programs related to the feeder occupations identified above, as well as students that previously exited those programs, could result in increased earnings potential for these students.

¹⁶ Shannon McConville, Sarah Bohn, and Landon Gibson, "Health Training Pathways at California's Community Colleges," Public Policy Institute of California, last modified May 15, 2019, <https://www.ppic.org/publication/health-training-pathways-at-californias-community-colleges/>.

Conclusion

This report provides an overview of industries and jobs that were resilient during the two most recent economic downturns: The Great Recession and the COVID-19 Pandemic Recession. Though the causes of these two recessions were different, identifying jobs that were resilient during a financial crisis and unprecedented pandemic can help educators and jobseekers prepare for the next economic downturn. Additionally, this report identified Jobs for Recovery that are projected to be in-demand and growing in the post-COVID-19 Pandemic Recession economy.

There were only 16 of nearly 1,000 industries in Orange County that are considered both Great Recession-Resilient and COVID-19 Pandemic Recession-Resilient. Additionally, only 23 of nearly 800 occupations are considered both Great Recession-Resilient and COVID-19 Pandemic Recession-Resilient and only 39 occupations are considered Jobs for Recovery. There are 8 middle-skill Resilient Jobs and 18 middle-skill Jobs for Recovery; Orange County Community Colleges have training programs for nearly all of these occupations.

Orange County Community Colleges should review existing programs that train for these occupations and verify that students exiting those programs are prepared for employment in a Resilient Job or Job for Recovery. While Jobs for Recovery are in-demand and growing in the short-term, Orange County Community Colleges should also consider how existing career education programs can help students and incumbent workers transition from a Job for Recovery to a Resilient Job in preparation of the next economic downturn.



Appendices

Appendix A: Recession-Resilient Industries

For more information regarding each industry, including descriptions, visit the Census Bureau North American Industry Classification website.¹⁷

Great Recession-Resilient Industries

The 70 Great Recession-Resilient Industries identified in this study are provided in **Exhibit 24** below.

Exhibit 24: Great Recession-Resilient Industries in Orange County

NAICS	Industry	2005 Jobs	2019 Jobs	2005-2019 Employment Change	2005-2019 % Employment Change	Average Hourly Earnings
713110	Amusement and Theme Parks	17,839	32,184	14,346	80%	\$50,508
902612	Colleges, Universities, and Professional Schools (State Government)	13,658	21,485	7,827	57%	\$111,079
238210	Electrical Contractors and Other Wiring Installation Contractors	13,365	18,074	4,709	35%	\$84,820
621210	Offices of Dentists	11,204	17,688	6,484	58%	\$74,926
524210	Insurance Agencies and Brokerages	10,950	17,516	6,566	60%	\$119,212
541511	Custom Computer Programming Services	13,240	16,476	3,236	24%	\$128,315
522110	Commercial Banking	9,962	15,246	5,284	53%	\$134,133
531311	Residential Property Managers	10,048	13,274	3,226	32%	\$79,039
452311	Warehouse Clubs and Supercenters	7,780	13,157	5,377	69%	\$51,936
623110	Nursing Care Facilities (Skilled Nursing Facilities)	7,568	12,050	4,482	59%	\$69,005
611110	Elementary and Secondary Schools	8,946	11,051	2,105	24%	\$49,921
339112	Surgical and Medical Instrument Manufacturing	3,389	9,873	6,484	191%	\$145,367
624410	Child Day Care Services	5,277	9,800	4,523	86%	\$44,248
621610	Home Health Care Services	5,460	9,681	4,221	77%	\$56,237
541512	Computer Systems Design Services	5,464	9,397	3,933	72%	\$200,091
511210	Software Publishers	3,278	8,329	5,051	154%	\$200,290

¹⁷ "North American Industry Classification System (NAICS)," U.S. Census Bureau, accessed March 7, 2023, <https://www.census.gov/naics/>.

NAICS	Industry	2005 Jobs	2019 Jobs	2005-2019 Employment Change	2005-2019 % Employment Change	Average Hourly Earnings
621340	Offices of Physical, Occupational and Speech Therapists, and Audiologists	3,085	8,083	4,998	162%	\$56,520
454110	Electronic Shopping and Mail-Order Houses	3,919	7,000	3,081	79%	\$65,787
541211	Offices of Certified Public Accountants	5,196	6,729	1,533	30%	\$116,294
623312	Assisted Living Facilities for the Elderly	4,757	6,726	1,969	41%	\$49,805
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	1,493	6,491	4,998	335%	\$191,216
424210	Drugs and Druggists' Sundries Merchant Wholesalers	3,906	6,235	2,328	60%	\$156,463
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	4,476	5,955	1,479	33%	\$101,938
541940	Veterinary Services	3,697	5,449	1,753	47%	\$63,995
339116	Dental Laboratories	2,979	5,074	2,095	70%	\$79,055
238160	Roofing Contractors	3,062	4,509	1,446	47%	\$72,250
711510	Independent Artists, Writers, and Performers	3,101	4,212	1,111	36%	\$44,219
423830	Industrial Machinery and Equipment Merchant Wholesalers	3,098	4,122	1,024	33%	\$101,907
624190	Other Individual and Family Services	1,542	3,841	2,299	149%	\$53,974
623311	Continuing Care Retirement Communities	1,264	3,826	2,562	203%	\$48,658
237310	Highway, Street, and Bridge Construction	2,132	3,765	1,633	77%	\$104,848
334419	Other Electronic Component Manufacturing	1,786	3,631	1,845	103%	\$83,282
541380	Testing Laboratories	2,028	3,154	1,126	56%	\$82,472
623220	Residential Mental Health and Substance Abuse Facilities	1,227	3,128	1,900	155%	\$63,091
519130	Internet Publishing and Broadcasting and Web Search Portals	1,437	3,041	1,604	112%	\$197,867
238390	Other Building Finishing Contractors	2,092	2,906	814	39%	\$72,631
621330	Offices of Mental Health Practitioners (except Physicians)	665	2,817	2,152	323%	\$45,490

NAICS	Industry	2005 Jobs	2019 Jobs	2005-2019 Employment Change	2005-2019 % Employment Change	Average Hourly Earnings
423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	2,022	2,662	640	32%	\$109,262
221210	Natural Gas Distribution	880	2,195	1,315	149%	\$184,992
238290	Other Building Equipment Contractors	1,256	2,116	860	69%	\$112,869
621910	Ambulance Services	1,389	2,114	725	52%	\$53,831
561621	Security Systems Services (except Locksmiths)	1,888	2,083	194	10%	\$106,232
531120	Lessors of Nonresidential Buildings (except Miniwarehouses)	1,493	1,990	497	33%	\$140,629
488510	Freight Transportation Arrangement	1,371	1,856	485	35%	\$94,661
424330	Women's, Children's, and Infants' Clothing and Accessories Merchant Wholesalers	766	1,837	1,071	140%	\$80,751
562111	Solid Waste Collection	900	1,751	851	94%	\$81,392
622310	Specialty (except Psychiatric and Substance Abuse) Hospitals	1,069	1,744	675	63%	\$76,124
311812	Commercial Bakeries	761	1,674	913	120%	\$58,299
711211	Sports Teams and Clubs	804	1,617	813	101%	\$332,387
337110	Wood Kitchen Cabinet and Countertop Manufacturing	1,446	1,605	159	11%	\$68,058
621492	Kidney Dialysis Centers	722	1,575	853	118%	\$90,935
611710	Educational Support Services	842	1,571	730	87%	\$61,514
446191	Food (Health) Supplement Stores	768	1,560	792	103%	\$55,395
339114	Dental Equipment and Supplies Manufacturing	1,013	1,546	533	53%	\$152,820
334417	Electronic Connector Manufacturing	758	1,457	698	92%	\$123,267
541213	Tax Preparation Services	856	1,347	491	57%	\$60,591
624110	Child and Youth Services	568	1,315	747	132%	\$55,718
532490	Other Commercial and Industrial Machinery and Equipment Rental and Leasing	459	1,289	830	181%	\$94,557

NAICS	Industry	2005 Jobs	2019 Jobs	2005-2019 Employment Change	2005-2019 % Employment Change	Average Hourly Earnings
424130	Industrial and Personal Service Paper Merchant Wholesalers	904	1,246	342	38%	\$83,795
711219	Other Spectator Sports	506	1,239	733	145%	\$47,854
423840	Industrial Supplies Merchant Wholesalers	680	1,138	458	67%	\$102,808
424810	Beer and Ale Merchant Wholesalers	463	1,036	573	124%	\$123,273
332912	Fluid Power Valve and Hose Fitting Manufacturing	679	956	277	41%	\$111,401
335999	All Other Miscellaneous Electrical Equipment and Component Manufacturing	489	918	429	88%	\$110,038
512110	Motion Picture and Video Production	572	854	282	49%	\$112,009
446130	Optical Goods Stores	522	838	316	60%	\$58,026
448110	Men's Clothing Stores	578	784	206	36%	\$49,951
423620	Household Appliances, Electric Housewares, and Consumer Electronics Merchant Wholesalers	536	757	221	41%	\$329,032
325998	All Other Miscellaneous Chemical Product and Preparation Manufacturing	472	730	258	55%	\$107,997
335122	Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing	571	519	-52	-9%	\$84,763

COVID-19 Pandemic Recession-Resilient Industries

The 81 COVID-19 Pandemic Recession-Resilient Industries identified in this study are provided in [Exhibit 25](#) below.

Exhibit 25: COVID-19 Pandemic Recession-Resilient Industries in Orange County

NAICS	Industry	2019 Jobs	2021 Jobs	2019-2021 Employment Change	2019 - 2021 % Employment Change	Average Hourly Earnings
531210	Offices of Real Estate Agents and Brokers	18,151	19,608	1,456	8%	\$55
238210	Electrical Contractors and Other Wiring Installation Contractors	18,074	18,177	103	1%	\$41
541219	Other Accounting Services	10,263	13,352	3,090	30%	\$35
611110	Elementary and Secondary Schools	11,051	11,736	685	6%	\$24
522292	Real Estate Credit	9,587	11,649	2,061	22%	\$86
454110	Electronic Shopping and Mail-Order Houses	7,000	9,398	2,398	34%	\$32
446110	Pharmacies and Drug Stores	6,855	7,398	543	8%	\$32
621511	Medical Laboratories	5,237	7,172	1,935	37%	\$47
492110	Couriers and Express Delivery Services	5,857	7,117	1,260	22%	\$29
541211	Offices of Certified Public Accountants	6,729	6,989	260	4%	\$56
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	6,491	6,927	435	7%	\$92
522310	Mortgage and Nonmortgage Loan Brokers	5,181	6,587	1,406	27%	\$71
541990	All Other Professional, Scientific, and Technical Services	3,864	6,244	2,381	62%	\$31
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	5,021	6,219	1,199	24%	\$86
423450	Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers	4,505	5,179	673	15%	\$65
902999	State Government, Excluding Education and Hospitals	4,187	4,756	569	14%	\$55
711510	Independent Artists, Writers, and Performers	4,212	4,553	341	8%	\$21
237310	Highway, Street, and Bridge Construction	3,765	4,537	772	21%	\$50
624190	Other Individual and Family Services	3,841	4,525	684	18%	\$26

NAICS	Industry	2019 Jobs	2021 Jobs	2019-2021 Employment Change	2019 - 2021 % Employment Change	Average Hourly Earnings
811111	General Automotive Repair	3,649	3,719	70	2%	\$32
524127	Direct Title Insurance Carriers	3,026	3,667	641	21%	\$77
444190	Other Building Material Dealers	3,231	3,291	60	2%	\$48
621330	Offices of Mental Health Practitioners (except Physicians)	2,817	3,191	374	13%	\$22
519130	Internet Publishing and Broadcasting and Web Search Portals	3,041	3,050	9	0%	\$95
518210	Data Processing, Hosting, and Related Services	2,652	2,996	344	13%	\$59
621320	Offices of Optometrists	2,255	2,691	436	19%	\$30
541420	Industrial Design Services	810	2,639	1,829	226%	\$97
561621	Security Systems Services (except Locksmiths)	2,083	2,297	215	10%	\$51
541620	Environmental Consulting Services	1,915	2,237	322	17%	\$53
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing	1,854	2,045	191	10%	\$57
237130	Power and Communication Line and Related Structures Construction	1,839	1,985	146	8%	\$60
423990	Other Miscellaneous Durable Goods Merchant Wholesalers	1,824	1,956	133	7%	\$45
337110	Wood Kitchen Cabinet and Countertop Manufacturing	1,605	1,854	248	15%	\$33
423320	Brick, Stone, and Related Construction Material Merchant Wholesalers	1,814	1,785	-29	-2%	\$44
323113	Commercial Screen Printing	1,702	1,784	82	5%	\$27
541614	Process, Physical Distribution, and Logistics Consulting Services	1,699	1,757	58	3%	\$34
541213	Tax Preparation Services	1,347	1,725	378	28%	\$29
561710	Exterminating and Pest Control Services	1,678	1,689	11	1%	\$33
453998	All Other Miscellaneous Store Retailers (except Tobacco Stores)	1,260	1,630	369	29%	\$29
611710	Educational Support Services	1,571	1,533	-38	-2%	\$30

NAICS	Industry	2019 Jobs	2021 Jobs	2019-2021 Employment Change	2019 - 2021 % Employment Change	Average Hourly Earnings
423220	Home Furnishing Merchant Wholesalers	1,328	1,416	88	7%	\$38
238150	Glass and Glazing Contractors	1,175	1,391	215	18%	\$37
624110	Child and Youth Services	1,315	1,363	48	4%	\$27
339115	Ophthalmic Goods Manufacturing	1,355	1,326	-29	-2%	\$46
561431	Private Mail Centers	882	1,279	397	45%	\$29
339920	Sporting and Athletic Goods Manufacturing	1,037	1,158	121	12%	\$33
561790	Other Services to Buildings and Dwellings	981	1,128	147	15%	\$26
541410	Interior Design Services	1,122	1,124	2	0%	\$39
484121	General Freight Trucking, Long-Distance, Truckload	784	1,111	327	42%	\$34
312111	Soft Drink Manufacturing	993	1,092	99	10%	\$47
484210	Used Household and Office Goods Moving	976	1,074	98	10%	\$29
561440	Collection Agencies	915	880	-35	-4%	\$37
314999	All Other Miscellaneous Textile Product Mills	766	834	68	9%	\$29
484220	Specialized Freight (except Used Goods) Trucking, Local	526	778	251	48%	\$39
423620	Household Appliances, Electric Housewares, and Consumer Electronics Merchant Wholesalers	757	750	-7	-1%	\$158
326160	Plastics Bottle Manufacturing	713	746	32	5%	\$36
423920	Toy and Hobby Goods and Supplies Merchant Wholesalers	573	728	155	27%	\$71
444220	Nursery, Garden Center, and Farm Supply Stores	545	586	41	8%	\$25
424820	Wine and Distilled Alcoholic Beverage Merchant Wholesalers	503	578	75	15%	\$76
424720	Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	427	562	135	31%	\$57
481111	Scheduled Passenger Air Transportation	547	555	8	1%	\$46
611430	Professional and Management Development Training	484	526	42	9%	\$57

NAICS	Industry	2019 Jobs	2021 Jobs	2019-2021 Employment Change	2019 - 2021 % Employment Change	Average Hourly Earnings
811191	Automotive Oil Change and Lubrication Shops	512	498	-13	-3%	\$21
523991	Trust, Fiduciary, and Custody Activities	383	485	102	27%	\$48
541191	Title Abstract and Settlement Offices	312	424	112	36%	\$63
562212	Solid Waste Landfill	331	413	82	25%	\$47
336991	Motorcycle, Bicycle, and Parts Manufacturing	345	406	61	18%	\$56
336390	Other Motor Vehicle Parts Manufacturing	373	401	28	8%	\$36
334290	Other Communications Equipment Manufacturing	348	376	28	8%	\$35
221113	Nuclear Electric Power Generation	217	324	107	49%	\$128
517919	All Other Telecommunications	260	258	-3	-1%	\$53
424930	Flower, Nursery Stock, and Florists' Supplies Merchant Wholesalers	238	244	6	3%	\$29
311412	Frozen Specialty Food Manufacturing	146	223	77	53%	\$27
522120	Savings Institutions	181	218	38	21%	\$26
325520	Adhesive Manufacturing	195	209	13	7%	\$68
311824	Dry Pasta, Dough, and Flour Mixes Manufacturing from Purchased Flour	157	195	38	24%	\$40
811118	Other Automotive Mechanical and Electrical Repair and Maintenance	187	195	8	4%	\$30
325212	Synthetic Rubber Manufacturing	143	163	20	14%	\$39
561613	Armored Car Services	107	138	31	29%	\$39
325413	In-Vitro Diagnostic Substance Manufacturing	92	119	27	29%	\$44
332311	Prefabricated Metal Building and Component Manufacturing	12	19	7	59%	\$28

Recession-Resilient Industries

The 16 recession-resilient industries identified in this study are provided in [Exhibit 26](#) below.

Exhibit 26: Recession-Resilient Industries in Orange County

NAICS	Industry	2005 Jobs	2021 Jobs	2019-2021 Employment Change	2019 - 2021 % Employment Change	Average Hourly Earnings
238210	Electrical Contractors and Other Wiring Installation Contractors	13,365	18,177	4,812	36%	\$40.78
611110	Elementary and Secondary Schools	8,946	11,736	2,790	31%	\$91.93
454110	Electronic Shopping and Mail-Order Houses	3,919	9,398	5,479	140%	\$31.63
541211	Offices of Certified Public Accountants	5,196	6,989	1,794	35%	\$46.80
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	1,493	6,927	5,433	364%	\$34.88
711510	Independent Artists, Writers, and Performers	3,101	4,553	1,453	47%	\$55.20
237310	Highway, Street, and Bridge Construction	2,132	4,537	2,405	113%	\$55.34
624190	Other Individual and Family Services	1,542	4,525	2,983	193%	\$65.30
621330	Offices of Mental Health Practitioners (except Physicians)	665	3,191	2,526	380%	\$31.00
519130	Internet Publishing and Broadcasting and Web Search Portals	1,437	3,050	1,613	112%	\$31.98
561621	Security Systems Services (except Locksmiths)	1,888	2,297	409	22%	\$55.91
337110	Wood Kitchen Cabinet and Countertop Manufacturing	1,446	1,854	407	28%	\$24.00
541213	Tax Preparation Services	856	1,725	869	102%	\$28.60
611710	Educational Support Services	842	1,533	691	82%	\$71.42
624110	Child and Youth Services	568	1,363	795	140%	\$85.83
423620	Household Appliances, Electric Housewares, and Consumer Electronics Merchant Wholesalers	536	750	214	40%	\$85.99

Appendix B: Recession-Resilient Jobs

For more information regarding each occupation, including descriptions, related job titles, and more, visit the O*NET website.¹⁸

Great Recession-Resilient Jobs

The 50 Great Recession-Resilient Jobs identified in this study are provided in **Exhibit 27** below. Middle-skill jobs are denoted with an asterisk (*).

Exhibit 27: Great Recession-Resilient Jobs in Orange County

SOC	Occupation	Typical Entry Level Education	2005 Jobs	2019 Jobs	2005-2019 Employment Change	2005-2019 % Employment Change	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
29-1141	Registered Nurses	Bachelor's degree	17,913	24,993	7,081	40%	\$46.02	\$56.03
13-1111	Management Analysts	Bachelor's degree	6,863	13,491	6,628	97%	\$29.25	\$44.64
13-1199	Business Operations Specialists, All Other	Bachelor's degree	8,472	13,291	4,819	57%	\$22.61	\$31.00
11-9199	Managers, All Other	Bachelor's degree	6,692	12,947	6,255	93%	\$26.87	\$49.17
13-1161	Market Research Analysts and Marketing Specialists	Bachelor's degree	3,320	11,537	8,217	247%	\$23.16	\$32.84
47-2111	Electricians	High school diploma or equivalent	7,042	9,652	2,609	37%	\$22.43	\$30.40
41-3021	Insurance Sales Agents	High school diploma or equivalent	6,986	9,497	2,510	36%	\$22.29	\$30.01
11-2022	Sales Managers	Bachelor's degree	6,492	8,993	2,501	39%	\$37.54	\$60.10
15-1232	Computer User Support Specialists	Some college, no degree	5,202	7,675	2,473	48%	\$22.00	\$28.69
13-1082	Project Management Specialists	Bachelor's degree	5,180	7,281	2,100	41%	\$34.69	\$46.75
11-9021	Construction Managers	Bachelor's degree	5,856	7,008	1,152	20%	\$25.30	\$40.10
17-2051	Civil Engineers	Bachelor's degree	3,989	6,146	2,157	54%	\$37.65	\$48.33
49-9021	Heating, Air Conditioning, and	Postsecondary nondegree award	2,295	4,250	1,955	85%	\$22.57	\$30.13

¹⁸ O*NET OnLine, accessed March 7, 2023, <https://www.onetonline.org/>.

SOC	Occupation	Typical Entry Level Education	2005 Jobs	2019 Jobs	2005-2019 Employment Change	2005-2019 % Employment Change	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
	Refrigeration Mechanics and Installers							
13-1041	Compliance Officers	Bachelor's degree	1,984	4,145	2,161	109%	\$29.17	\$37.80
21-1021	Child, Family, and School Social Workers	Bachelor's degree	1,453	3,690	2,237	154%	\$22.20	\$28.44
25-3099	Teachers and Instructors, All Other	Bachelor's degree	1,139	3,667	2,527	222%	\$23.31	\$25.22
11-9111	Medical and Health Services Managers	Bachelor's degree	1,626	3,525	1,899	117%	\$35.12	\$52.76
11-3012	Administrative Services Managers	Bachelor's degree	2,227	3,351	1,124	50%	\$37.60	\$47.33
17-2112	Industrial Engineers	Bachelor's degree	2,292	3,290	998	44%	\$39.07	\$49.56
29-1051	Pharmacists	Doctoral or professional degree	1,934	3,260	1,326	69%	\$61.01	\$63.21
29-1123	Physical Therapists	Doctoral or professional degree	1,454	3,069	1,615	111%	\$31.36	\$47.51
21-1012	Educational, Guidance, and Career Counselors and Advisors	Master's degree	2,094	2,987	893	43%	\$27.52	\$35.15
29-1021	Dentists, General	Doctoral or professional degree	1,262	2,908	1,646	130%	\$34.95	\$78.65
29-1292	Dental Hygienists	Associate degree	1,788	2,734	946	53%	\$48.77	\$48.82
21-2011	Clergy	Bachelor's degree	1,794	2,729	935	52%	\$21.99	\$29.10
49-9041	Industrial Machinery Mechanics	High school diploma or equivalent	1,109	2,584	1,475	133%	\$23.52	\$30.01
13-1081	Logisticians	Bachelor's degree	996	2,349	1,353	136%	\$30.04	\$38.45
13-2099	Financial Specialists, All Other	Bachelor's degree	1,491	2,049	558	37%	\$27.23	\$35.64

SOC	Occupation	Typical Entry Level Education	2005 Jobs	2019 Jobs	2005-2019 Employment Change	2005-2019 % Employment Change	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
29-1127	Speech-Language Pathologists	Master's degree	703	1,896	1,192	170%	\$35.06	\$46.37
43-4061	Eligibility Interviewers, Government Programs	High school diploma or equivalent	1,352	1,891	539	40%	\$21.32	\$27.11
11-9032	Education Administrators, Kindergarten through Secondary	Master's degree	1,562	1,871	309	20%	\$47.02	\$59.53
11-9151	Social and Community Service Managers	Bachelor's degree	939	1,823	884	94%	\$27.81	\$35.57
11-3071	Transportation, Storage, and Distribution Managers	High school diploma or equivalent	994	1,820	826	83%	\$36.39	\$48.76
25-9031	Instructional Coordinators	Master's degree	1,100	1,764	664	60%	\$23.17	\$30.50
21-1023	Mental Health and Substance Abuse Social Workers	Master's degree	786	1,638	852	108%	\$23.67	\$35.41
37-3013	Tree Trimmers and Pruners	High school diploma or equivalent	802	1,544	743	93%	\$22.36	\$23.74
11-9033	Education Administrators, Postsecondary	Master's degree	1,122	1,513	391	35%	\$45.18	\$57.90
27-2012	Producers and Directors	Bachelor's degree	328	1,385	1,057	322%	\$33.05	\$54.41
29-1122	Occupational Therapists	Master's degree	713	1,285	572	80%	\$41.15	\$47.99
49-2098	Security and Fire Alarm Systems Installers	High school diploma or equivalent	869	1,236	366	42%	\$24.94	\$31.84
11-3013	Facilities Managers	Bachelor's degree	757	1,226	469	62%	\$36.53	\$47.21

SOC	Occupation	Typical Entry Level Education	2005 Jobs	2019 Jobs	2005-2019 Employment Change	2005-2019 % Employment Change	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
19-3039	Psychologists, All Other	Master's degree	100	1,119	1,019	1019%	\$27.31	\$45.70
29-1071	Physician Assistants	Master's degree	540	1,064	524	97%	\$53.49	\$59.99
19-4099	Life, Physical, and Social Science Technicians, All Other	Associate degree	490	1,039	549	112%	\$20.87	\$27.55
27-3091	Interpreters and Translators	Bachelor's degree	538	986	448	83%	\$20.66	\$33.54
15-2031	Operations Research Analysts	Bachelor's degree	389	961	572	147%	\$29.58	\$41.12
17-2081	Environmental Engineers	Bachelor's degree	438	808	370	84%	\$37.23	\$48.04
31-2021	Physical Therapist Assistants	Associate degree	391	704	313	80%	\$30.31	\$37.61
31-9093	Medical Equipment Preparers	High school diploma or equivalent	403	668	264	65%	\$21.38	\$22.56
51-9082	Medical Appliance Technicians	High school diploma or equivalent	291	557	266	91%	\$22.39	\$22.39

COVID-19 Pandemic Recession-Resilient Jobs

The 72 COVID-19 Pandemic Recession-Resilient Jobs identified in this study are provided in [Exhibit 28](#) below. Middle-skill jobs are denoted with an asterisk (*).

Exhibit 28: COVID-19 Pandemic Recession-Resilient Jobs in Orange County

SOC	Occupation	Typical Entry Level Education	2019 Jobs	2021 Jobs	2019-2021 Employment Change	2019-2021 % Employment Change	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
11-1021	General and Operations Managers	Bachelor's degree	26,680	30,246	3,566	13%	\$36.80	\$51.15
29-1141	Registered Nurses	Bachelor's degree	24,993	25,415	421	2%	\$46.02	\$56.03
13-1199	Business Operations Specialists, All Other	Bachelor's degree	13,291	17,731	4,440	33%	\$22.61	\$31.00
23-1011	Lawyers	Doctoral or professional degree	16,040	17,615	1,574	10%	\$38.87	\$63.93
11-9199	Managers, All Other	Bachelor's degree	12,947	14,386	1,439	11%	\$26.87	\$49.17
11-3031	Financial Managers	Bachelor's degree	11,819	12,439	620	5%	\$46.64	\$69.76
25-2021	Elementary School Teachers, Except Special Education	Bachelor's degree	11,239	12,014	775	7%	\$29.71	\$46.26
13-1161	Market Research Analysts and Marketing Specialists	Bachelor's degree	11,537	11,913	376	3%	\$23.16	\$32.84
41-3021	Insurance Sales Agents	High school diploma or equivalent	9,497	10,158	661	7%	\$22.29	\$30.01
13-1082	Project Management Specialists	Bachelor's degree	7,281	9,518	2,238	31%	\$34.69	\$46.75
13-1071	Human Resources Specialists	Bachelor's degree	8,134	9,229	1,095	13%	\$27.45	\$34.47
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	High school diploma or equivalent	7,975	8,492	517	6%	\$28.61	\$38.40

SOC	Occupation	Typical Entry Level Education	2019 Jobs	2021 Jobs	2019-2021 Employment Change	2019-2021 % Employment Change	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
15-1299	Computer Occupations, All Other	Bachelor's degree	7,692	7,975	283	4%	\$27.55	\$37.17
11-3021	Computer and Information Systems Managers	Bachelor's degree	6,766	7,649	883	13%	\$59.31	\$76.67
13-2052	Personal Financial Advisors	Bachelor's degree	5,338	6,721	1,383	26%	\$25.74	\$42.40
13-1028	Buyers and Purchasing Agents	Bachelor's degree	5,603	5,785	182	3%	\$23.48	\$31.48
51-1011	First-Line Supervisors of Production and Operating Workers	High school diploma or equivalent	5,453	5,481	28	1%	\$23.27	\$30.13
53-1047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	High school diploma or equivalent	4,069	4,914	845	21%	\$23.20	\$26.03
11-1011	Chief Executives	Bachelor's degree	4,321	4,482	161	4%	\$50.30	\$95.05
11-9111	Medical and Health Services Managers	Bachelor's degree	3,525	4,334	809	23%	\$35.12	\$52.76
21-1021	Child, Family, and School Social Workers	Bachelor's degree	3,690	4,284	594	16%	\$22.20	\$28.44
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	High school diploma or equivalent	3,865	4,037	172	4%	\$30.89	\$39.68
27-1024	Graphic Designers	Bachelor's degree	3,620	3,685	65	2%	\$22.29	\$29.01
11-3012	Administrative Services Managers	Bachelor's degree	3,351	3,572	221	7%	\$37.60	\$47.33

SOC	Occupation	Typical Entry Level Education	2019 Jobs	2021 Jobs	2019-2021 Employment Change	2019-2021 % Employment Change	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
25-3099	Teachers and Instructors, All Other	Bachelor's degree	3,667	3,554	-112	-3%	\$23.31	\$25.22
29-1292	Dental Hygienists	Associate degree	2,734	3,543	809	30%	\$48.77	\$48.82
17-2071	Electrical Engineers	Bachelor's degree	3,166	3,516	350	11%	\$46.71	\$60.19
13-1051	Cost Estimators	Bachelor's degree	3,239	3,443	203	6%	\$24.73	\$32.77
13-1151	Training and Development Specialists	Bachelor's degree	2,944	3,136	193	7%	\$23.63	\$30.71
25-2022	Middle School Teachers, Except Special and Career/Technical Education	Bachelor's degree	2,669	3,046	376	14%	\$30.50	\$47.03
29-1021	Dentists, General	Doctoral or professional degree	2,908	2,979	71	2%	\$34.95	\$78.65
43-4061	Eligibility Interviewers, Government Programs	High school diploma or equivalent	1,891	2,879	988	52%	\$21.32	\$27.11
11-3121	Human Resources Managers	Bachelor's degree	2,363	2,624	262	11%	\$46.26	\$61.44
11-3051	Industrial Production Managers	Bachelor's degree	2,551	2,610	59	2%	\$38.86	\$50.10
47-2073	Operating Engineers and Other Construction Equipment Operators	High school diploma or equivalent	2,347	2,422	75	3%	\$28.59	\$37.60
17-3011	Architectural and Civil Drafters	Associate degree	1,915	2,244	328	17%	\$24.20	\$30.39
11-3071	Transportation, Storage, and Distribution Managers	High school diploma or equivalent	1,820	2,108	288	16%	\$36.39	\$48.76

SOC	Occupation	Typical Entry Level Education	2019 Jobs	2021 Jobs	2019-2021 Employment Change	2019-2021 % Employment Change	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
43-3051	Payroll and Timekeeping Clerks	High school diploma or equivalent	2,013	2,034	21	1%	\$21.54	\$27.85
15-1241	Computer Network Architects	Bachelor's degree	1,695	1,953	258	15%	\$37.50	\$52.69
11-9032	Education Administrators, Kindergarten through Secondary	Master's degree	1,871	1,884	13	1%	\$47.02	\$59.53
11-9033	Education Administrators, Postsecondary	Master's degree	1,513	1,726	213	14%	\$45.18	\$57.90
29-2034	Radiologic Technologists and Technicians	Associate degree	1,485	1,714	230	15%	\$29.56	\$38.75
49-2098	Security and Fire Alarm Systems Installers	High school diploma or equivalent	1,236	1,659	424	34%	\$24.94	\$31.84
27-2012	Producers and Directors	Bachelor's degree	1,385	1,618	233	17%	\$33.05	\$54.41
29-1171	Nurse Practitioners	Master's degree	1,208	1,531	323	27%	\$61.33	\$64.11
29-1071	Physician Assistants	Master's degree	1,064	1,433	369	35%	\$53.49	\$59.99
25-2052	Special Education Teachers, Kindergarten and Elementary School	Bachelor's degree	1,120	1,429	309	28%	\$29.19	\$37.73
29-1041	Optometrists	Doctoral or professional degree	1,064	1,387	323	30%	\$43.67	\$60.81
11-9039	Education Administrators, All Other	Bachelor's degree	1,206	1,374	169	14%	\$34.20	\$44.47
19-3039	Psychologists, All Other	Master's degree	1,119	1,332	213	19%	\$27.31	\$45.70

SOC	Occupation	Typical Entry Level Education	2019 Jobs	2021 Jobs	2019-2021 Employment Change	2019-2021 % Employment Change	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
47-2161	Plasterers and Stucco Masons	No formal educational credential	1,129	1,311	183	16%	\$22.85	\$29.45
11-3013	Facilities Managers	Bachelor's degree	1,226	1,298	72	6%	\$36.53	\$47.21
13-2028	Property Appraisers and Assessors	Bachelor's degree	1,032	1,239	206	20%	\$24.24	\$35.56
27-1011	Art Directors	Bachelor's degree	1,029	1,227	198	19%	\$31.11	\$49.28
27-3091	Interpreters and Translators	Bachelor's degree	986	1,209	222	23%	\$20.66	\$33.54
15-2051	Data Scientists	Bachelor's degree	778	1,179	401	52%	\$36.93	\$55.03
15-1212	Information Security Analysts	Bachelor's degree	933	1,161	228	24%	\$44.48	\$56.23
15-1243	Database Architects	Bachelor's degree	854	1,119	265	31%	\$35.51	\$35.51
33-3012	Correctional Officers and Jailers	High school diploma or equivalent	769	1,038	270	35%	\$28.99	\$35.17
19-3033	Clinical and Counseling Psychologists	Doctoral or professional degree	911	1,031	120	13%	\$33.88	\$56.91
25-2012	Kindergarten Teachers, Except Special Education	Bachelor's degree	734	930	196	27%	\$36.20	\$46.86
49-9062	Medical Equipment Repairers	Associate degree	758	913	156	21%	\$24.61	\$32.18
15-1242	Database Administrators	Bachelor's degree	613	839	227	37%	\$34.14	\$46.13
29-2032	Diagnostic Medical Sonographers	Associate degree	679	821	143	21%	\$38.74	\$48.69
11-9179	Personal Service Managers, All Other	Bachelor's degree	592	805	214	36%	\$27.16	\$27.16
51-9082	Medical Appliance Technicians	High school diploma or equivalent	557	788	231	41%	\$22.39	\$22.39

SOC	Occupation	Typical Entry Level Education	2019 Jobs	2021 Jobs	2019-2021 Employment Change	2019-2021 % Employment Change	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
33-9093	Transportation Security Screeners	High school diploma or equivalent	536	650	114	21%	\$21.33	\$22.39
33-1012	First-Line Supervisors of Police and Detectives	High school diploma or equivalent	455	649	195	43%	\$58.35	\$72.60
51-8021	Stationary Engineers and Boiler Operators	High school diploma or equivalent	308	464	156	51%	\$23.46	\$29.94
47-2071	Paving, Surfacing, and Tamping Equipment Operators	High school diploma or equivalent	283	430	147	52%	\$29.62	\$39.20
19-4061	Social Science Research Assistants	Bachelor's degree	292	425	133	46%	\$21.89	\$22.12
29-1218	Obstetricians and Gynecologists	Doctoral or professional degree	182	347	165	91%	\$81.51	\$124.28

Recession-Resilient Jobs

The 23 Recession-Resilient Jobs identified in this study are provided in **Exhibit 29** below. Middle-skill jobs are denoted with an asterisk (*).

Exhibit 29: Recession-Resilient Jobs in Orange County

SOC	Occupation	Typical Entry Level Education	2005 Jobs	2021 Jobs	2005-2021 Employment Change	2005 - 2021 % Employment Change	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
29-1141	Registered Nurses*	Bachelor's degree	17,913	25,415	7,502	42%	\$46.02	\$56.03
13-1199	Business Operations Specialists, All Other	Bachelor's degree	8,472	17,731	9,259	109%	\$22.61	\$31.00
11-9199	Managers, All Other	Bachelor's degree	6,692	14,386	7,694	115%	\$26.87	\$49.17
13-1161	Market Research Analysts and Marketing Specialists	Bachelor's degree	3,320	11,913	8,593	259%	\$23.16	\$32.84
41-3021	Insurance Sales Agents*	High school diploma or equivalent	6,986	10,158	3,171	45%	\$22.29	\$30.01
13-1082	Project Management Specialists*	Bachelor's degree	5,180	9,518	4,338	84%	\$34.69	\$46.75
11-9111	Medical and Health Services Managers	Bachelor's degree	1,626	4,334	2,708	167%	\$35.12	\$52.76
21-1021	Child, Family, and School Social Workers	Bachelor's degree	1,453	4,284	2,831	195%	\$22.20	\$28.44
11-3012	Administrative Services Managers*	Bachelor's degree	2,227	3,572	1,345	60%	\$37.60	\$47.33
25-3099	Teachers and Instructors, All Other	Bachelor's degree	1,139	3,554	2,415	212%	\$23.31	\$25.22
29-1292	Dental Hygienists*	Associate degree	1,788	3,543	1,755	98%	\$48.77	\$48.82
29-1021	Dentists, General	Doctoral or professional degree	1,262	2,979	1,717	136%	\$34.95	\$78.65
43-4061	Eligibility Interviewers, Government Programs	High school diploma or equivalent	1,352	2,879	1,527	113%	\$21.32	\$27.11

SOC	Occupation	Typical Entry Level Education	2005 Jobs	2021 Jobs	2005-2021 Employment Change	2005 - 2021 % Employment Change	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
11-3071	Transportation, Storage, and Distribution Managers*	High school diploma or equivalent	994	2,108	1,114	112%	\$36.39	\$48.76
11-9032	Education Administrators, Kindergarten through Secondary	Master's degree	1,562	1,884	322	21%	\$47.02	\$59.53
11-9033	Education Administrators, Postsecondary	Master's degree	1,122	1,726	604	54%	\$45.18	\$57.90
49-2098	Security and Fire Alarm Systems Installers*	High school diploma or equivalent	869	1,659	790	91%	\$24.94	\$31.84
27-2012	Producers and Directors	Bachelor's degree	328	1,618	1,290	393%	\$33.05	\$54.41
29-1071	Physician Assistants	Master's degree	540	1,433	894	166%	\$53.49	\$59.99
19-3039	Psychologists, All Other	Master's degree	100	1,332	1,232	1232%	\$27.31	\$45.70
11-3013	Facilities Managers*	Bachelor's degree	757	1,298	541	71%	\$36.53	\$47.21
27-3091	Interpreters and Translators*	Bachelor's degree	538	1,209	671	125%	\$20.66	\$33.54
51-9082	Medical Appliance Technicians	High school diploma or equivalent	291	788	497	171%	\$22.39	\$22.39

Appendix C: Jobs for Recovery

The 39 Jobs for Recovery identified in this study are listed in **Exhibit 30**. Middle-skill jobs are denoted with an asterisk (*). For more information regarding each occupation, including descriptions, related job titles, and more, visit the O*NET website.¹⁹

Exhibit 30: Jobs for Recovery in Orange County

SOC	Occupation	Typical Entry-Level Education	2021 Jobs	2026 Jobs	2021-2026 Employment Change	2019-2021 % Employment Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
31-1128	Home Health and Personal Care Aides*	High school diploma or equivalent	52,628	64,540	11,912	23%	9,414	\$14.15	\$14.15
13-2011	Accountants and Auditors	Bachelor's degree	21,336	22,076	740	3%	2,035	\$27.90	\$36.82
25-1099	Postsecondary Teachers	Doctoral or professional degree	18,261	19,387	1,126	6%	2,032	\$37.59	\$47.08
35-1012	First-Line Supervisors of Food Preparation and Serving Workers*	High school diploma or equivalent	11,025	11,933	908	8%	1,852	\$17.03	\$17.78
15-1252	Software Developers	Bachelor's degree	17,818	19,799	1,981	11%	1,744	\$45.10	\$59.52
29-1141	Registered Nurses*	Bachelor's degree	25,415	26,902	1,488	6%	1,654	\$46.02	\$56.03
43-4171	Receptionists and Information Clerks	High school diploma or equivalent	9,907	10,256	349	4%	1,329	\$14.30	\$17.21
13-1161	Market Research Analysts and Marketing Specialists	Bachelor's degree	11,913	12,555	642	5%	1,310	\$23.16	\$32.84
53-3032	Heavy and Tractor-Trailer Truck Drivers*	Postsecondary nondegree award	11,142	11,506	364	3%	1,307	\$18.88	\$24.02
31-1131	Nursing Assistants*	Postsecondary nondegree award	8,804	9,720	916	10%	1,300	\$16.12	\$18.53
53-3033	Light Truck Drivers	High school diploma or equivalent	10,399	10,894	495	5%	1,263	\$17.17	\$20.13

¹⁹ <https://www.onetonline.org/>

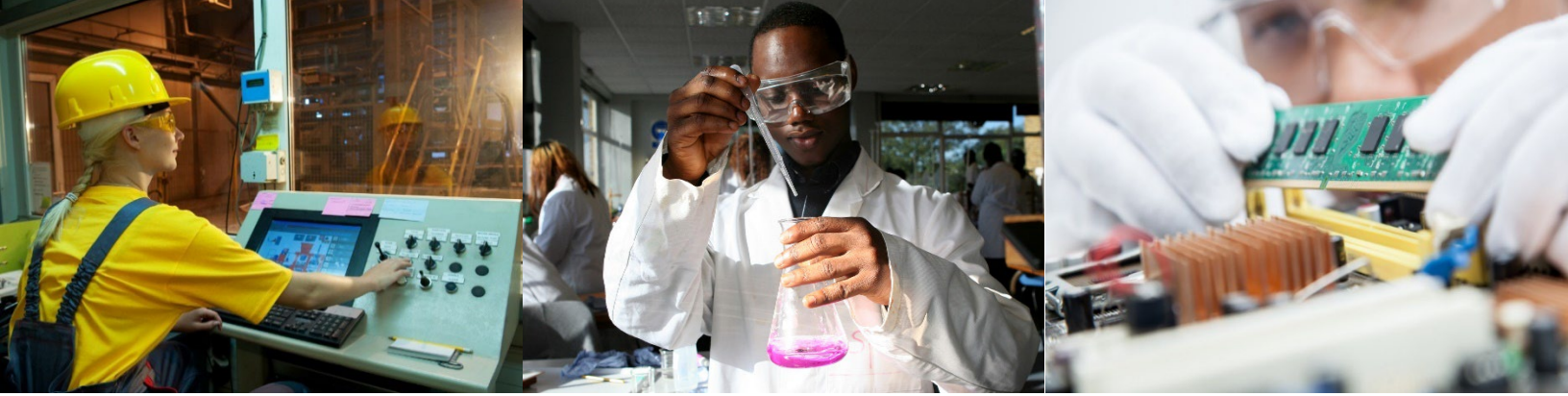
SOC	Occupation	Typical Entry-Level Education	2021 Jobs	2026 Jobs	2021-2026 Employment Change	2019-2021 % Employment Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
39-9011	Childcare Workers*	High school diploma or equivalent	7,811	8,325	513	7%	1,234	\$14.05	\$14.82
11-9199	Managers, All Other	Bachelor's degree	14,386	15,121	734	5%	1,208	\$26.87	\$49.17
31-9092	Medical Assistants*	Postsecondary nondegree award	8,590	9,399	808	9%	1,201	\$17.27	\$18.51
39-5092	Manicurists and Pedicurists*	Postsecondary nondegree award	7,755	9,264	1,509	19%	1,177	\$10.24	\$14.00
23-1011	Lawyers	Doctoral or professional degree	17,615	18,980	1,366	8%	1,112	\$38.87	\$63.93
47-2111	Electricians*	High school diploma or equivalent	8,958	9,680	723	8%	1,093	\$22.43	\$30.40
31-9011	Massage Therapists*	Postsecondary nondegree award	7,082	8,283	1,201	17%	1,087	\$13.05	\$20.09
25-9045	Teaching Assistants, Except Postsecondary*	Some college, no degree	10,540	11,038	497	5%	1,076	\$17.37	\$17.96
43-6013	Medical Secretaries and Administrative Assistants*	High school diploma or equivalent	8,601	9,108	507	6%	1,048	\$18.08	\$22.66
13-1111	Management Analysts	Bachelor's degree	10,488	10,880	392	4%	1,040	\$29.25	\$44.64
11-3031	Financial Managers	Bachelor's degree	12,439	13,090	651	5%	1,034	\$46.64	\$69.76
25-2021	Elementary School Teachers, Except Special Education	Bachelor's degree	12,014	12,553	539	4%	976	\$29.71	\$46.26
13-1071	Human Resources Specialists	Bachelor's degree	9,229	9,523	294	3%	938	\$27.45	\$34.47
41-3031	Securities, Commodities, and	Bachelor's degree	8,942	9,179	236	3%	819	\$21.33	\$27.99

SOC	Occupation	Typical Entry-Level Education	2021 Jobs	2026 Jobs	2021-2026 Employment Change	2019-2021 % Employment Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings
	Financial Services Sales Agents								
25-3041	Tutors	Bachelor's degree	5,281	5,944	663	13%	761	\$14.76	\$16.61
13-1082	Project Management Specialists*	Bachelor's degree	9,518	9,809	291	3%	754	\$34.69	\$46.75
31-9091	Dental Assistants*	Postsecondary nondegree award	5,270	5,652	382	7%	709	\$18.47	\$23.25
25-3031	Substitute Teachers, Short-Term	Bachelor's degree	5,408	5,750	342	6%	694	\$17.51	\$18.34
39-2021	Animal Caretakers	High school diploma or equivalent	3,605	4,226	621	17%	694	\$14.00	\$14.53
29-2061	Licensed Practical and Licensed Vocational Nurses*	Postsecondary nondegree award	7,015	7,682	667	10%	683	\$29.41	\$30.59
47-2152	Plumbers, Pipefitters, and Steamfitters*	High school diploma or equivalent	5,887	6,122	235	4%	654	\$22.32	\$30.52
11-9021	Construction Managers	Bachelor's degree	7,277	7,755	478	7%	627	\$25.30	\$40.10
13-2052	Personal Financial Advisors	Bachelor's degree	6,721	7,325	604	9%	625	\$25.74	\$42.40
15-1232	Computer User Support Specialists*	Some college, no degree	7,199	7,584	386	5%	609	\$22.00	\$28.69
21-1093	Social and Human Service Assistants*	High school diploma or equivalent	3,887	4,515	627	16%	606	\$17.21	\$21.15
13-2072	Loan Officers	Bachelor's degree	7,319	7,507	188	3%	604	\$18.16	\$29.08
39-9032	Recreation Workers	High school diploma or equivalent	3,455	3,630	175	5%	571	\$14.01	\$14.21
25-9099	Educational Instruction and Library Workers, All Other	Bachelor's degree	4,976	5,253	276	6%	529	\$15.99	\$22.41

Appendix D: Training Buckets Methodology

The following methodology was used to determine the typical length of time it would take to complete a training program for each in-demand, growing occupation.

- **Short-Term Training (1-3 Months)**
 - All occupations that:
 - Typically require no formal education or a high school diploma.
 - Do not require on-the-job training or short-term on-the-job training.
 - All occupations for which license or certification requirements can be completed in less than 3 months.
- **Moderate-Term Training (4-11 Months)**
 - All occupations that typically require some college, no degree or a postsecondary nondegree award.
 - All occupations for which license or certification requirements can be completed in 4-11 months.
- **Long-Term Training (1-2 Years)**
 - All occupations that typically require an associate degree.
 - All occupations that typically require a bachelor's degree but have about 33% of workers in the field that have completed some college or an associate degree as their highest level of education.
 - All occupations that typically require apprenticeship
 - All occupations for which license or certification requirements can be completed in 1-2 years.
- **Pathway/Transfer (2+Years)**
 - All occupations that typically require a bachelor's degree or higher and that are not included in the Long-Term Training bucket.



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 the COVID-19 Pandemic. 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.

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