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CENTER FOR A COMPETITIVE WORKFORCE

Middle-Skill Occupations and Related Career Education Programs Through the Lens of Race and Ethnicity

IN THE LOS ANGELES BASIN

C·O·E

LAEDC

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View this report online at www.CompetitiveWorkforce.LA/race-and-ethnicity

About CCW
Center for a Competitive Workforce

CCW

The Center for a Competitive Workforce (CCW) was established in 2017 as a Strong Workforce Program regional project of the 19 community colleges in the Los Angeles region, in collaboration with the L.A./O.C. Center of Excellence for Labor Market Research (COE), hosted at Mt. San Antonio College, the Los Angeles County Economic Development Corporation (LAEDC) and its Institute for Applied Economics.

CCW is focused on institutionalizing the regular engagement of and partnerships between our 19 community colleges in the L.A. region and employers from high-growth industry sectors (i.e., those with productive advantages, deep labor concentrations and projected growth of middle skill jobs). It is through the development, institutionalization and activation of these productive partnerships and realtime feedback loops that colleges can adaptively attune their programs, courses and curricula to the workforce needs in a way that is truly responsive, demand-driven and future-forward, while also providing students with the very important real-world experiences that come from work-based learning opportunities such as internships.

CCW has published 17 regional labor market and occupational reports for L.A. and Orange County. These reports analyze labor supply and demand data for middle-skill occupations in high-growth industries to inform and influence the expansion of new or modified career education, and workforce development programs and curricula. CCW hosts regional program advisory meetings for faculty at multiple colleges with regional employers to get feedback on curriculum and training programs, and get their insights on workplace trends, new technology and the in-demand skills that will make students even more competitive for employment and work-based learning opportunities. CCW supports quarterly convenings for faculty, workforce, nonprofit, government and industry leaders in three of the L.A. region's most highly concentrated and fastest growing industry sectors—advanced transportation, bioscience and digital media/entertainment—with the co-equal goals to strengthen industry engagement with faculty, and connect students to meaningful work-based learning opportunities and employment.

This is one of the best ways to constructively prepare students for the 21st century jobs and careers, in the fast emerging and rapidly-changing knowledge-intensive industries that drive our regional economy. In partnership with the regional directors for employer engagement, CCW has hosted seven regional program advisory committee meetings to further strengthen regional alignment of, and ongoing connections between, faculty and industry. CCW has developed two online platforms: a Biosciences Industry Portal, and a regional Workforce and Education Partner Portal to increase the speed and richness of industry-college connections. The goal is to seamlessly access and deploy the economic intelligence gleaned through industry engagement, and to rapidly expand and scale the number of work-based learning and employment opportunities for career education students and graduates.

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Executive Summary

In this report, the Center for a Competitive Workforce:

- Analyzes target occupations through the lens of race and ethnicity
- Projects regional employment in target occupations
- Identifies the jobs that have the brightest future for community college students in the region
- Illuminates systemic inequities in the labor market to raise awareness and bring positive cultural change in the LA Basin

The Los Angeles Basin's competitive and rapidly changing economic landscape has given rise to a job market in which highly specialized knowledge and skills often mean the difference between success and failure. To help meet this challenge, the Center for a Competitive Workforce (CCW or "the Center") set out to study occupations within target industries of the Los Angeles Basin, to highlight occupations that would benefit from equitable access and greater participation for community college students, especially Black, Latinx, Indigenous, and underrepresented Asian American and Pacific Islander (AAPI) students. This report is the latest in a series of reports by the Center for a Competitive Workforce, the LA/OC Center of Excellence for Labor Market Research and the Los Angeles County Economic Development Corporation (LAEDC), published to support calibrating the region's talent development system.

Why Focus on Occupations Through the Lens of Race and Ethnicity?

Center for a Competitive Workforce is motivated by the vision of equity and more widely shared prosperity. Though the Los Angeles Basin, which encompasses Los Angeles and Orange counties, is home to an extremely diverse employment base and abundant opportunities in all industry sectors, persistent inequality hinders the ability for every worker to take advantage of the region's economic offerings. One of the clearest disparities dividing the Basin's workforce is the opportunity gap along racial and ethnic lines. This is revealed in the data, which shows many of the Basin's better-paying industries and occupations have lower levels of diversity than our population demographics would suggest. More inclusivity and more widely shared opportunity can be achieved, and one valuable tool is workforce development, which can be focused to create an increasingly racially and ethnically diverse pool of skilled talent for the Basin's well-paying jobs which are highlighted in this report.

The COVID-19 pandemic has only exacerbated these divisions, as a disproportionately large percentage of the region's workers of color were impacted by job loss and many families struggled to participate in remote education due to financial constraints and lack of resources. The pandemic has brought to the foreground how race related barriers and occupational segregation have contributed to the current economic fallout from COVID-19. In response to the urgency arising from the need to rebuild the economy, this report attempts the shed light on several areas where employers and community colleges working together can address disparities in the workforce.

The data also shows that employment in jobs requiring some college or post-secondary training were largely immune to the economic downturn during the pandemic, and in general, wages and lifetime earnings have consistently trended higher for those who advanced beyond a high school diploma. That fact emphasizes the importance of extending educational opportunities, especially in post-secondary career training, to create a more resilient and prosperous workforce.

This report comes at a critical point, where the economy of the Los Angeles Basin can be strengthened with the proper attention to improving opportunity for Black, Hispanic, Asian American and Pacific Islander (AAPI) and other communities of color. Through the promotion of increased diversity in higher-skilled, higher-paying industries and occupations, the region can build back more equitably than before while fostering a more dynamic economy that is positioned for stronger future growth.

SUPPLY VS. DEMAND

CCW also assesses whether community college supply is meeting workforce demand for occupations that are considered middle-skill and accessible via community college pathways. In the context of this report, the community colleges in in Los Angeles and Orange counties provide talent pathways into well-paying careers for a highly diverse population of students. With total enrollment of nearly 750,000 students in the LA region's community college system and opportunity to further expand enrollment, the scale of training in this system is large enough to make significant and measurable progress on creating a more diverse talent pool — a foundation for greater ethnic and racial diversity in the Los Angeles Basin's key industries and well-paying, middle-skill occupations.

Based on annual job openings projected for the eleven target occupations studied in this report, which total about 100,000 openings across five years, there is significant opportunity to expand regional community college completions to prepare more students for these well-paying jobs, which will serve as an engine of economic recovery.

OCCUPATION PROFILES

This report identifies 11 occupations which exist within our three highlighted industry sectors. Construction, health care and professional and business services have all been selected as industries in which more diverse racial and ethnic representation would better reflect the diversity of the Los Angeles Basin's population. Within the industries, these occupations have been chosen as targets where opportunities are available for certain demographics that are less concentrated here currently.

Occupations in Construction

1. **Electricians**
2. **Construction Managers**
3. **Construction and Building Inspectors**
4. **Solar Photovoltaic Installers**

Occupations in Health Care

1. **Licensed Vocational Nurses**
2. **Dental Assistants**
3. **Respiratory Therapists**

Occupations in Professional and Business Services

1. **Secretaries and Administrative Assistants**
2. **Executive Secretaries and Executive Administrative Assistants**
3. **Paralegals and Legal Assistants**
4. **Graphic Designers**

ADDITIONAL TRENDS

Of all the developing trends in our target equitable recovery industries, the introduction of new technology and the impact this has had on the workforce is the most important to note. The manner in which these technological advances are implemented in each sector varies, but the constant theme is that workers must be able to quickly adapt to remain relevant in the Los Angeles Basin. Becoming familiar with and able to work alongside new technology will give new workforce entrants of all races and ethnicities a competitive advantage.

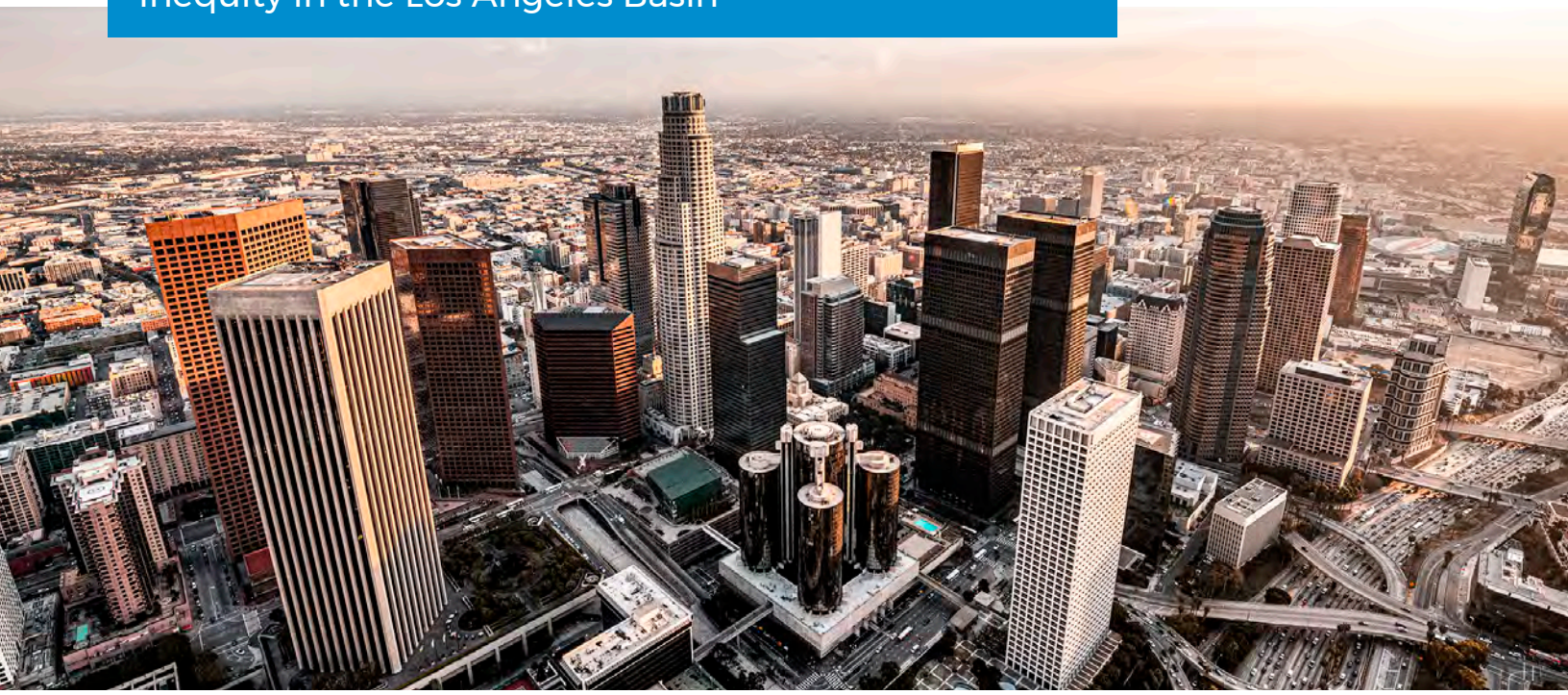
In professional and business services, new technology has arrived predominantly in the form of machine learning, advanced data analytics and artificial intelligence, as companies work to gain more insight for their customers than ever before. In the construction field, wearables and sensors are providing workers and site managers with more information to increase efficiency and improve safety, while new construction modeling programs are allowing designers a new level of oversight. In health care, the pandemic has spurred a rapid growth in telehealth and helped care providers become even more connected with their patients. It is yet to be seen whether robots and automated processes will displace the workforce in these sectors to a significant degree or simply augment their daily routines, but this will be an issue to watch closely.

In all three of these sectors, we see a high level of middle-skill job opportunities that will be available for community college graduates and others who have some level of training or education that is above a high school diploma but less than a bachelor's degree. Many of the noted middle-skill opportunities have high levels of replacement openings due to exits (such as retirements) and occupational transfers, and when combined with new jobs being added to the workforce, over the next few years occupations in these industries will have an abundance of job openings.

RECOMMENDATIONS

The process of increasing diversity and equity at the higher wage levels of the regional workforce is complex and requires significant, intentional investment even in a strong economy, and it has become still more challenging as the Los Angeles Basin struggles to rebound from the devastating COVID-19 pandemic that caused hundreds of thousands of job losses and a large number of business closures. In order to begin down this path, CCW offers several recommendations in the conclusion of this report.

Inequity in the Los Angeles Basin



In this report, the Center for a Competitive Workforce and the LAEDC's Institute for Applied Economics, in partnership with the region's network of community colleges, focus on occupations in the Los Angeles Basin through the lens of race and ethnicity.

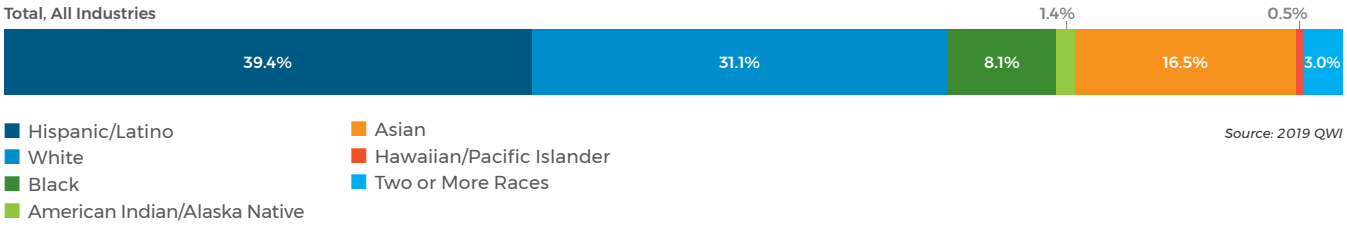
Home to over 6.6 million workers, the counties of Los Angeles and Orange, which together comprise the Los Angeles Basin, feature an extremely diverse and multi-faceted employment base. Workers across racial and ethnic groups are often concentrated at different levels of skill and pay. An examination of employment across different occupations by demographic characteristics reveals that there are clearly occupations which don't exhibit as much diversity as exists in the LA Basin's population. Strategic efforts to attract workers from a broader array of racial and cultural backgrounds could improve existing occupational segregation.

There is an abundance of talent and experience within the workforce of the Los Angeles Basin, but much of this potential may remain untapped without the proper resources and programs that allow workers from all races and ethnicities to access employment opportunities. A wide variety of middle-skill opportunities are within reach for well-prepared job-seekers who have less than a bachelor's degree, but some occupations do not reflect the region's rich cultural and ethnic diversity. An increase in workforce diversity within the higher-paying industries in the Los Angeles Basin could lead to more equitable economic outcomes over time and give people from a diverse array of backgrounds greater access to career ladders and economic mobility.

This report seeks to illuminate workforce disparities that exist along the lines of race and ethnicity, and offer solutions to help the many thousands of people who lost employment due to the COVID-19 pandemic. It also provides recommendations on how to tailor a recovery in the LA Basin that is more equitable and develop stronger opportunities for communities that have been hardest hit by the employment effects of the pandemic.

Enrolling over 350,000 career education students per year, the 19 regional community colleges in Los Angeles County, and the additional nine community colleges and one stand-alone continuing education center in Orange County, have adapted to this changing economic landscape by offering a wide range of short-term, industry-recognized training programs aimed at reskilling recently displaced workers so they can access new and emerging opportunities in the rapidly evolving economic landscape.

EXHIBIT 1-1
RACE/ETHNICITY OF WORKERS IN THE LOS ANGELES BASIN, 2019



Source: 2019 QWI

Defining the Workforce

A logical place to begin is a review of baseline workforce demographics in the Los Angeles Basin. From there, we can begin to devise targeted solutions that aim at the root of workforce diversity issues in specific occupations and industries.

In Exhibit 1-1, the distribution of the entire workforce is displayed by race and ethnicity across all industries in the Los Angeles Basin from the base year of 2019, before the COVID-19 pandemic began and upended employment and wage trends.[1] Hispanic workers made up nearly 40 percent of the workforce, and white workers another 31 percent. More than 16 percent of employees were Asian, while 8 percent identified as Black. Smaller proportions classified themselves as American Indian or Alaska Natives, Pacific Islanders or multiple races.

From this exhibit, it is apparent that the LA Basin's workforce is quite diverse, with higher concentrations of Hispanic and white workers. However, this does not equate to equal opportunities by industry and occupation. Based on public use microdata and occupational skills classifications from the Center for a Competitive Workforce, the proportion of workers employed in each skill category by race and ethnicity is estimated and shown in Exhibit 1-2.

This analysis provides an initial view of the disparities present in the region's workforce. White workers are much more prevalent in higher-skill occupations; a third of this demographic group works in jobs classified as high skill and over 75 percent overall work at the middle-skill level or above. Asian workers share a similar distribution with nearly three quarters of workers attaining at least a middle-skill job. In contrast, 53 percent of Hispanic workers are employed in occupations classified as low-skill and less than 10 percent work in high-skill occupations. It is estimated that about 38 percent of Black workers are in low-skill occupations and 46 percent in middle-skill, with just 15 percent in high-skill opportunities.

Higher-skill jobs are almost always higher-paying jobs, which has contributed to the range of median incomes present in the Los Angeles Basin when broken down by demographic groupings. Exhibit 1-3 displays median household incomes in 2019 by race and ethnicity for both Los Angeles County and Orange County. White and Asian workers, who are employed more frequently in higher-skill occupations, have the highest median household incomes; in Orange County household incomes reach nearly $100,000. Meanwhile, workers of Hispanic origin have a median household income of about $61,200 in Los Angeles County and $73,700 in Orange County. Black workers have a median household income of $52,100 and $66,400 in these two counties respectively. In the Los Angeles Basin, the median income overall was about $66,000 in 2019, meaning that white and Asian households are well above this figure on average while Hispanic and Black households remain slightly below.

Low educational attainment is one of the contributing factors to occupational disparities. Higher levels of educational attainment allow workers in the LA Basin to access higher-skill job opportunities that have stronger job security and career pathways, thus leading to higher incomes overall for those who have more education.

Exhibit 1-4, shows educational attainment for the population 25 years and older distributed across the four largest demographic groups in the Los Angeles Basin for 2019. White and Asian residents have attained bachelor's degrees or higher at a much greater rate than the overall population in the Basin; 80 percent and 75 percent of white and Asian residents respectively have at least some college education. Nearly 40 percent of Black residents have some college or an associate degree, but less than 30 percent have at least a bachelor's degree. Meanwhile, close to three quarters of Hispanic residents have just a high school diploma or below, with only 14 percent attaining a bachelor's or graduate degree. These differences are caused by a multitude of factors, ranging from access and household wealth to K-12 experiences and how well those schools have prepared learners for college.

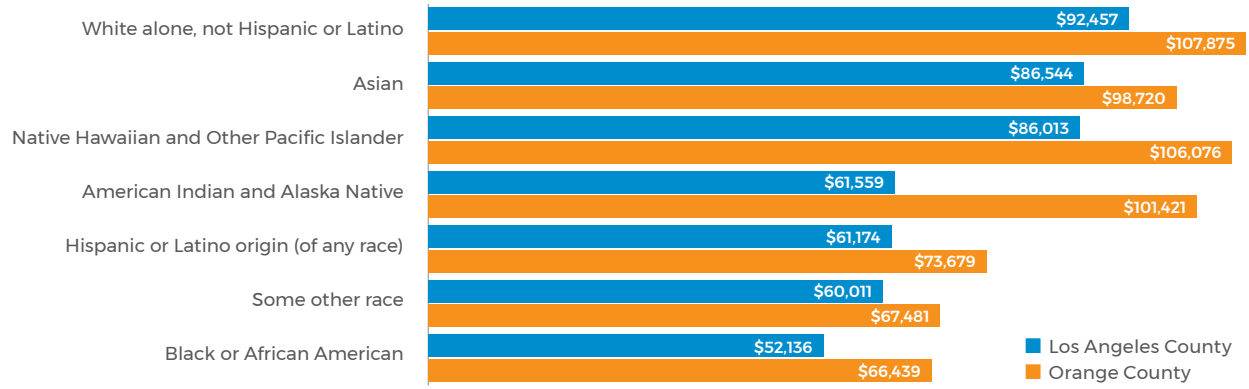
[1] *This report relies on race and ethnicity data collected by the U.S. Census Bureau, as such the terms, such as white, Hispanic, and Black, used in this report adhere to the terms the Census bureau uses in collecting the data. For a definition of terms, see https://www.census.gov/topics/population/race/about.html.*

EXHIBIT 1-2
OCCUPATIONAL SKILL CLASSIFICATIONS FOR WORKERS IN THE LOS ANGELES BASIN, 2019

TYPE OF OCCUPATION	HISPANIC	WHITE	ASIAN	BLACK
Low-Skill Occupations	53.3%	24.1%	25.5%	38.4%
Middle-Skill Occupations	36.8%	42.3%	45.6%	46.6%
High-Skill Occupations	9.9%	33.6%	28.9%	15.1%
Total, All Occupations	**100%**	**100%**	**100%**	**100%**

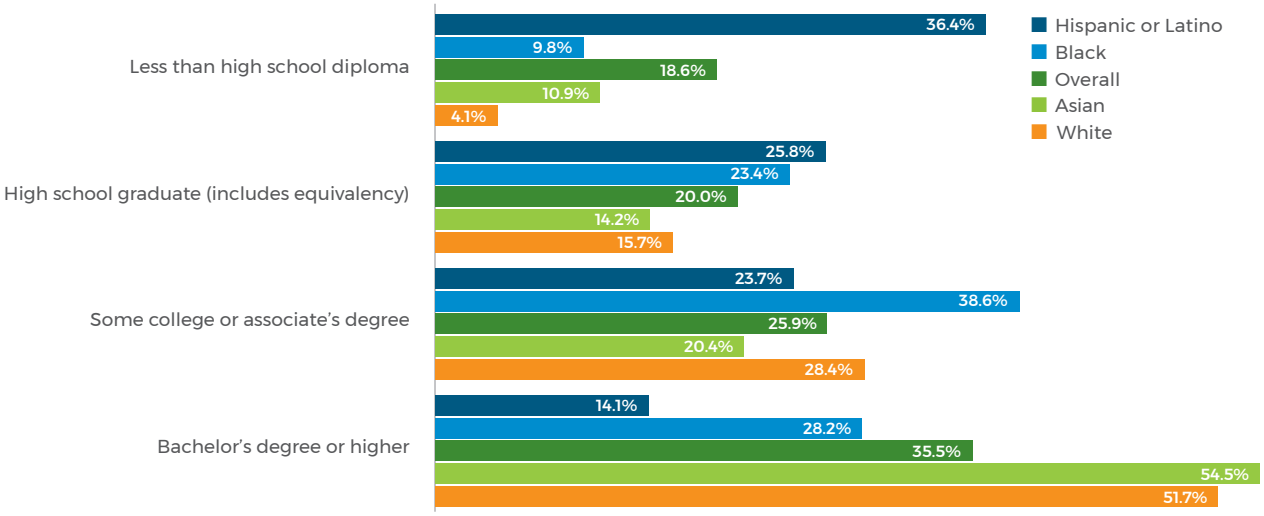
Source: PUMS, LAEDC

EXHIBIT 1-3
MEDIAN HOUSEHOLD INCOME BY RACE /ETHNICITY, 2019



Source: 2019 ACS 1-year estimates

EXHIBIT 1-4
EDUCATIONAL ATTAINMENT BY RACE, 2019
Population 25+ years



Source: 2019 ACS 1-year estimates

Workforce Demographics in the LA Basin

This initial analysis provides some insights into the inequalities present in our regional workforce and while there are many factors responsible for the demographic composition in higher wage jobs, the correlation between educational attainment and income is noteworthy and provides an opportunity for action which will be explored further. To take a closer look at where the workforce in the Los Angeles Basin is lacking in diversity and equity, it is important to also examine where workers from each demographic group are currently employed. This involves not only identifying the industries with high concentrations of workers according to each demographic group to map out our economic sectors, but also looking at trends by occupation to determine the prevailing skill levels among each group.

Exhibit 1-5 displays the top ten industries in which the highlighted demographic groups are currently working in the LA Basin by total employment numbers. For Hispanic workers, the highest number of workers are employed in the food services and drinking places industry, with nearly 260,000 employees. This is followed by administrative and support services, educational services and ambulatory health care services.

Meanwhile, the greatest total number of Black workers are in similar industries in Los Angeles and Orange Counties, with administrative and support services, social assistance, educational services and food services and drinking places making up the top four. Nearly 100,000 Asian employees are in the professional, scientific and technical services sector, with high numbers of workers in similar industries compared to our previous two demographics.

While this exhibit is helpful in showing where these demographic groups are working, the figures are heavily influenced by the overall size of the top few industries by total employment. To gain a better picture of true over- and under-representation by certain demographics, **we must also look at employment figures by proportion** within these industries, as follows.

Exhibit 1-6 displays the five industries where each of our three highlighted demographic groups have the highest proportion of total employment, along with the ten industries where these groups have the lowest proportion of total employment. This provides a better sense of where certain segments of the population are not well-represented.

EXHIBIT 1-5
INDUSTRIES BY HIGHEST EMPLOYMENT FOR SELECTED DEMOGRAPHICS IN THE LA BASIN, 2019

HISPANIC		BLACK		ASIAN	
Industry	**Employment**	**Industry**	**Employment**	**Industry**	**Employment**
722 Food Services and Drinking Places	259,200	561 Administrative and Support Services	56,000	541 Professional, Scientific and Technical Services	96,600
561 Administrative and Support Services	209,400	624 Social Assistance	51,700	722 Food Services and Drinking Places	84,200
611 Educational Services	174,300	611 Educational Services	42,700	621 Ambulatory Health Care Services	77,100
621 Ambulatory Health Care Services	125,400	722 Food Services and Drinking Places	36,700	611 Educational Services	66,500
624 Social Assistance	113,200	541 Professional, Scientific and Technical Services	24,800	624 Social Assistance	60,400
541 Professional, Scientific and Technical Services	109,700	621 Ambulatory Health Care Services	23,500	622 Hospitals	58,300
238 Specialty Trade Contractors	91,300	512 Motion Picture and Sound Recording Industries	23,400	561 Administrative and Support Services	51,500
445 Food and Beverage Stores	65,400	622 Hospitals	18,300	423 Merchant Wholesalers, Durable Goods	35,100
622 Hospitals	62,400	623 Nursing and Residential Care Facilities	14,200	424 Merchant Wholesalers, Nondurable Goods	32,500
423 Merchant Wholesalers, Durable Goods	59,700	922 Justice, Public Order & Safety Activities	11,800	623 Nursing and Residential Care Facilities	31,600

EXHIBIT 1-6
HIGHEST AND LOWEST PERCENTAGES OF INDUSTRY EMPLOYMENT FOR SELECTED DEMOGRAPHICS IN THE LA BASIN, 2019
(Nonfarm)

	HISPANIC		BLACK		ASIAN	
	Industry	**%**	**Industry**	**%**	**Industry**	**%**
HIGH CONCENTRATION INDUSTRIES	316 Leather and Allied Product Manufacturing	73.7%	485 Transit and Ground Passenger Transportation	23.4%	334 Computer and Electronic Product Manufacturing	32.1%
	562 Waste Management and Remediation Services	68.7%	925 Administration of Housing Programs, Urban Planning and Community Development	21.8%	622 Hospitals	30.1%
	322 Paper Manufacturing	66.9%	923 Administration of Human Resource Programs	17.5%	623 Nursing and Residential Care Facilities	27.3%
	331 Primary Metal Manufacturing	65.9%	624 Social Assistance	16.2%	339 Miscellaneous Manufacturing	26.9%
	326 Plastics and Rubber Products Manufacturing	61.2%	492 Couriers and Messengers	15.6%	425 Wholesale Electronic Markets and Agents and Brokers	25.2%
LOW CONCENTRATION INDUSTRIES	711 Performing Arts, Spectator Sports and Related Industries	23.4%	315 Apparel Manufacturing	3.9%	327 Nonmetallic Mineral Product Manufacturing	7.2%
	481 Air Transportation	22.7%	326 Plastics and Rubber Products Manufacturing	3.8%	512 Motion Picture and Sound Recording Industries	7.2%
	515 Broadcasting (except Internet)	22.7%	316 Leather and Allied Product Manufacturing	3.8%	444 Building Material and Garden Equipment and Supplies Dealers	7.1%
	525 Funds, Trusts and Other Financial Vehicles	22.2%	332 Fabricated Metal Product Manufacturing	3.8%	321 Wood Product Manufacturing	6.9%
	518 Data Processing, Hosting and Related Services	19.2%	425 Wholesale Electronic Markets and Agents and Brokers	3.7%	312 Beverage and Tobacco Product Manufacturing	6.7%
	533 Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	19.0%	335 Electrical Equipment, Appliance and Component Manufacturing	3.5%	238 Specialty Trade Contractors	6.5%
	519 Other Information Services	17.9%	339 Miscellaneous Manufacturing	3.5%	213 Support Activities for Mining	5.8%
	523 Securities, Commodity Contracts and Other Financial Investments and Related Activities	17.0%	211 Oil and Gas Extraction	3.2%	212 Mining (except Oil and Gas)	5.5%
	511 Publishing Industries (except Internet)	15.7%	333 Machinery Manufacturing	3.1%	562 Waste Management and Remediation Services	4.7%
	512 Motion Picture and Sound Recording Industries	15.6%	212 Mining (except Oil and Gas)	0.0%	211 Oil and Gas Extraction	0.0%

Hispanic workers are heavily concentrated in manufacturing industries, waste management and remediation services and private households. In industries like leather and allied product manufacturing (non-apparel products made from rubber, plastics or textiles), paper manufacturing and primary metal manufacturing they make up over 65 percent of the total workforce. Meanwhile, they have poor representation in information, finance, air transportation and the industries of performing arts and spectator sports. Many of these industries where Hispanic workers are present at lower levels are higher-skilled, information-based industries that pay high wages and require advanced levels of education.

Black workers have high concentrations in industries such as government, transportation and social assistance. Administration of housing programs and human resource programs are two important sectors where their proportion of total employment are highest, with transit and ground passenger transportation ranked first. Black workers are not as prevalent in wholesale, manufacturing and oil and gas extraction industries.

The highest proportion of industry employment for Asian workers is in health care, computer and electronic product manufacturing and wholesale. At its highest concentration this demographic accounts for about 30 percent of employment in certain industries. Asian workers are under-represented in oil and gas extraction, mining, waste management and certain manufacturing industries.

We can also examine **how these demographics are concentrated by occupational groups.**

Hispanic workers make up high percentages of the total employment in construction and extraction occupations, production occupations and building and grounds cleaning and maintenance occupations. Meanwhile, they comprise lower proportions of employment in life, physical and social science occupations, health care practitioners and technical occupations and architecture and engineering occupations.

Black workers in the Los Angeles Basin are more heavily concentrated in occupations related to transportation and material moving, office and administrative support and installation, maintenance and repair, among others. Black workers are underrepresented in health care practitioner and technical occupations, business and financial occupations and architecture and engineering occupations.

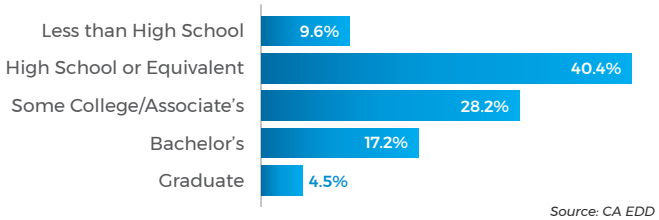
In the region, Asian workers comprise higher percentages of total employment in personal care and service occupations, health care practitioners and technical occupations and certain production occupations. In particular, nearly 90 percent of manicurists and pedicurists in the LA Basin identified as Asian. While Asian workers are underrepresented in construction and extraction occupations, installation, maintenance and repair occupations and transportation and material moving occupations.

COVID-19 Impact on Employment

Data from 2019 provided a baseline for prevailing industry and workforce trends in the Los Angeles Basin; however, the COVID-19 pandemic and its resulting economic effects dramatically changed the regional landscape in 2020. This pandemic did not affect workers equally, as those in certain occupations and industries fared much better than others. In many cases, the inequities were only made worse by the rampant unemployment and financial insecurity of the past fifteen months, making solutions to issues of equity even more complex.

Exhibit 1-7 shows the breakdown of unemployment insurance claims in the Los Angeles Basin from January 2020 to May 2021. Over 40 percent of claims come from workers with only a high school education, and nearly an additional 30 percent from those who have completed some college. Meanwhile, unemployment insurance claims from workers with bachelor's or graduate degrees were less than a quarter of the total. As the pandemic forced industries that were more service-oriented with higher levels of personal interaction to close, a high proportion of workers in these occupations were laid off. This was particularly the case in food services, in-store retail, entertainment and recreation and accommodation — industries which generally require lower levels of education across most occupations. In contrast, employees in higher-skill information and knowledge-based industries made the transition to online work fairly seamlessly, leading to lower levels of unemployment for those with advanced degrees.

EXHIBIT 1-7
UNEMPLOYMENT CLAIMS BY EDUCATIONAL ATTAINMENT, LOS ANGELES BASIN , JAN 2020 - MAY 2021



Source: CA EDD

As the previous section demonstrated, Black and Hispanic workers are found more commonly in these service sectors and occupations that were frequently laid off during the pandemic. Analysis of unemployment insurance claims from the California Employment Development Department finds that nearly 650,000 initial claims were filed by Black workers in the Los Angeles Basin since the start of the pandemic, which is equivalent to 10.5 percent of all claims filed in the region; however, Black workers make up just 8.1 percent of the labor force. Hispanic workers filed about 38 percent of all initial unemployment insurance claims in this timeframe, and make up just under 40 percent of the labor force. In other words, the layoffs driven by the COVID-19 pandemic affected specific industries and occupations that tended to have higher percentages of Black and Hispanic workers, so the impacts of the crisis worsened equity in the region as a whole.

Even with industries currently undergoing the reopening process in the region, workers and households are still struggling, with this report's highlighted demographic groups bearing the heaviest burden from the pandemic. For this reason, our report focuses on identifying industries and occupations that these workers can target during the recovery which can lead to higher pay, more secure careers and pathways that with additional training and experience can lead to even higher-skilled occupations. Addressing the occupations and industries that could benefit from heightened inclusion can ultimately strengthen the economic recovery process in the LA Basin and advance economic opportunities of local workers from all racial and demographic backgrounds.

Equitable Recovery Target Sectors

CONSTRUCTION

- Construction of Buildings
- Heavy and Civil Engineering Construction
- Specialty Trade Contractors

HEALTH CARE

- Ambulatory Health Care Services
- Hospitals
- Nursing and Residential Care Facilities

PROFESSIONAL AND BUSINESS SERVICES

- Professional, Scientific and Technical Services
- Management of Companies and Enterprises
- Administrative and Support Services
- Waste Management and Remediation Services

The Sectors Defined

In this report, three industry sectors have been identified that stand to benefit from increased diversity as the LA Basin embarks upon its recovery process. These are industries which have a high number of workers in occupations where Black, Hispanic and Asian workers are currently not well represented. Yet these industries have well-paying occupations with significant job openings. As such, these become opportunities for developing a more diverse base of employees. Hence, the term "equitable recovery target industries" will be used in this report.

The first industry focus is the construction sector, which comprises establishments primarily engaged in the construction of buildings or engineering projects, as well as establishments primarily engaged in the preparation of new sites for construction or subdividing land for sale as building sites. The construction sector and its component subsectors generally have high proportional representation by Hispanic and white employees in the workforce, while the presence of Asian and Black workers is relatively low.

The second industry focus is the health care sector, which includes ambulatory health care services like offices of physicians and dentists, general medical and specialty hospitals and nursing care facilities. In many higher-paying, middle- and high-skilled occupations in the health care sector, we have identified a low concentration of Black employees, illuminating an opportunity for upskilling and increased workforce equity.

The third focus is the professional business services supersector, which includes the professional, scientific and technical services sector. This sector is home to establishments that specialize in activities such as legal advice and representation, accounting and payroll services, architectural and engineering services, consulting and research services, computer services and much more. Often these activities require a higher degree of expertise and training, and work with clients in a variety of industries and households. In many middle-skill occupations within this sector, there is under-representation of employees that identify as people of color.

Technological Trends in the Workforce

For community college graduates to progress along career pathways in these industries toward higher-skill occupations, they must be able to adapt to the new technologies and expertise that will be required as these sectors evolve.

In the construction sector, technology has been changing the nature of day-to-day work for years and will continue to do so. One such advancement comes in the field of wearables such as smart watches, smart boots and power gloves, which give managers and workers better real-time information about health and safety – potentially saving avoidable injuries and increasing efficiency by large margins. Businesses that are able to harness the data gathered by these devices to increase worker effectiveness and optimize construction sites can gain a competitive advantage.

Computerized design programs are also coming to the forefront in an effort to eliminate unforeseen challenges and risk while maximizing communication and efficiency. This includes building information modeling programs that can visualize a construction project over its entire lifecycle and provide valuable insights to construction managers and building owners. Another developing strategy is modular construction, where sections of buildings are constructed offsite while the actual grounds are being prepared, then quickly assembled on-location. Alongside the growth of three-dimensional printing, modular construction could become an essential element of optimizing build times.

Finally, drones and robots are likely to play a larger role in the construction sector in the future. These are critical for automating certain rote processes and increasing safety and efficiency. Over time, workers will have to increasingly work alongside these machines and become adept at using them to maximize their own productivity at the job site.

In the field of health care, technology is helping nurses and doctors care for residents of the region more effectively than ever. Telehealth has surged during the pandemic, as health care professionals have been able to stay connected with many of their patients even from long distances and provide them with real-time, up-to-date information without the need for in-person visits. We will likely see an increased emphasis on telehealth to save time and money in the future, and patients may feel more secure knowing their service providers are just a video call away, assuming of course they have access to high-speed internet which is by no means certain in lower income households.

The internet of things and data analytics have been extremely important in the evolution of the health care sector as well. Monitors can provide detailed and accurate readings of patient vital signs and measurements at all times, giving attendants a constant stream of information in the hospital. Wearables also go hand-in-hand with telehealth by giving individuals the ability to track their health at home and share results with their physicians remotely.

Over time, big data management will become even more essential as predictive analytics further transforms health care. Analytics has the potential to lead to more effective patient management and proactive care that can keep individuals out of hospitals by monitoring for risk factors and noticing causes for concern before they become true problems.

But this is only the beginning for the health care sector, as the possibilities are nearly limitless. Experiments with nanotechnology, three-dimensional printing, augmented and virtual reality and more are revealing the extent to which technology can lead to better health outcomes for all.

In the business and professional services sector, artificial intelligence and machine learning are becoming more and more transformational. Interpreting real-time data from clients, organizing it into information that can be analyzed and generating actionable insights are critical processes that AI can speed up, allowing firms in this space to spend less time on data work and more time on generating strategies and communicating with clients.

In all three of these industry sectors, firms that can leverage the advantages of technology will be able to make their business models more effective and set themselves apart from competitors. On the worker side, those who enter the industry with a solid understanding of developing trends and the expertise necessary to work alongside these technologies will be poised to capitalize on the opportunities of a transforming economy. A detailed profile of each of the 11 target occupations is included at the end of this report.

Overall, our target industries for equitable recovery employed 1,812,600 private payroll workers in the Los Angeles Basin in 2019, accounting for 33.4 percent of total regional employment.

The Industries Defined

Analysis of trends in the three target industries provides insights into the challenges and opportunities facing the sectors' workers and employers. To develop a recovery process that builds industries back equitably and strongly, it is important to understand where the jobs are now and where we have found success in the past, coupled with analysis of opportunities for improvement in the future.

In this section, job counts, changes in payroll employment and wages are discussed for the Los Angeles Basin (Los Angeles and Orange counties).

Industry Employment

Employment in the three target industries accounts for 33.4 percent of total employment in the Los Angeles Basin. Overall, there are 1,812,600 private payroll workers in these sectors.

Exhibit 3-1 displays the distribution of employment across our target industry sectors in the LA Basin. Professional and technical services is the largest sector with over 429,000 workers, followed by administrative and support services at 417,000. Another critical sector in the region is health care, which is home to 324,000 workers across the two counties. While the construction sector is comparatively smaller, its three component industries still employ 250,000 workers.

employment

EXHIBIT 3-1
EMPLOYMENT DISTRIBUTION ACROSS TARGET INDUSTRIES, 2019

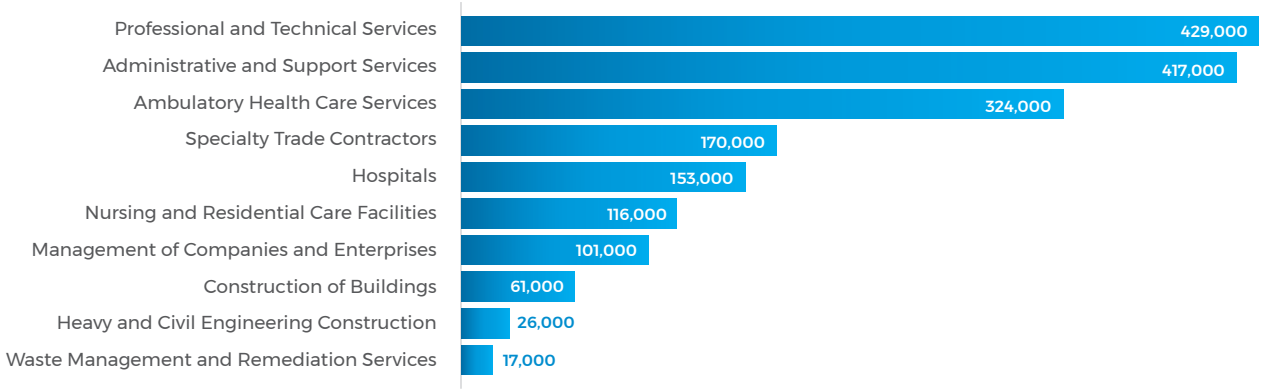


EXHIBIT 3-2
TARGET INDUSTRY EMPLOYMENT DISTRIBUTION BETWEEN COUNTIES

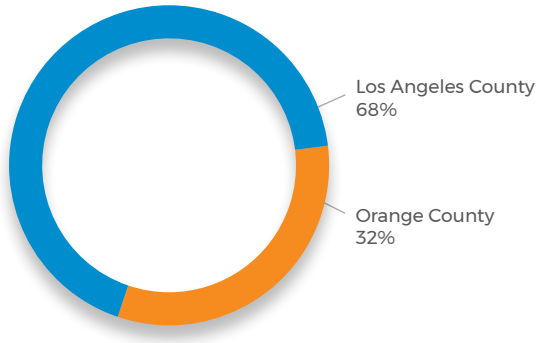


EXHIBIT 3-3
CHANGE IN PAYROLL EMPLOYMENT FROM 2009-2019

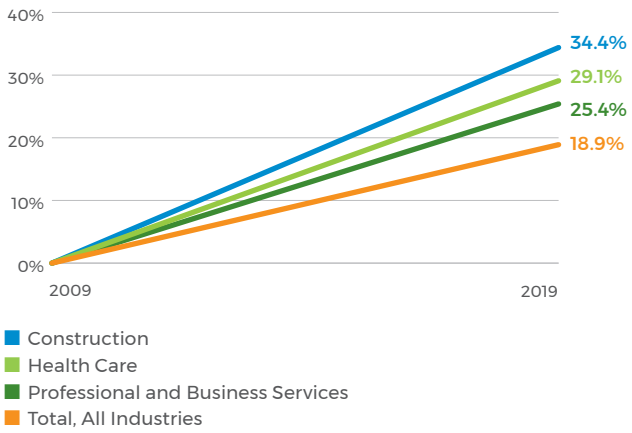
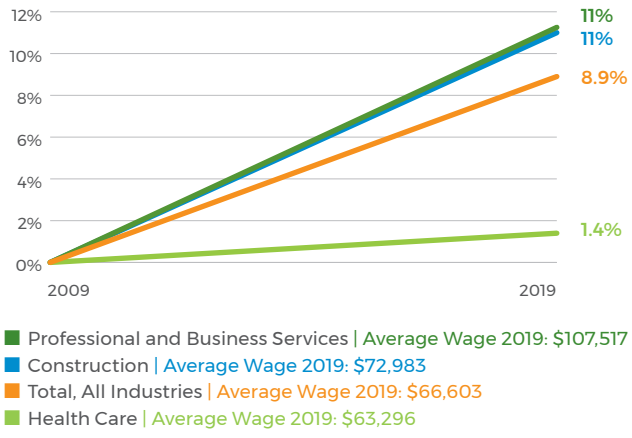


EXHIBIT 3-4
CHANGE IN REAL WAGES FROM 2009-2019



Los Angeles County accounts for 68 percent of the employment in these sectors, supported by the size of its health care industry and professional, scientific and technical services industry, while Orange County comprises 32 percent of the employment.

Total employment in the three industries identified by this study grew substantially from 2009 to 2019, with an overall gain of over 862,000 jobs (Exhibit 3-3). **All three sectors have grown significantly faster than the average growth rate of all industries in the Los Angeles Basin,** in which the workforce grew by just 19 percent.

Construction has witnessed the highest rate of growth since 2009 at 34.4 percent, with over 65,000 jobs added to the workforce over a ten-year span. Health care has also been growing quite rapidly at 29.1 percent, with over 133,000 new jobs added to the workforce in the Los Angeles Basin. While the professional and business services sector has grown the slowest at 25.4 percent, the size of the industry means that over 195,000 new workers have joined the sector between 2009 and 2019.

Industry Wages

In 2019 the average wage in the Los Angeles Basin was $66,603 (Exhibit 3-4). Average wages in professional and business services are well above this figure at $107,517, and the average wage in the construction industry is also slightly higher at $72,983. Generally, workers in the health care sector earn slightly below the average basin wage at $63,296 due to lower wages in home health care services ($31,843) which brings down the average wage in the industry.

Real wages in professional and business services and construction have been rising slightly faster than wages across all industries in the Los Angeles Basin; each have seen a growth rate of 11 percent between 2009 and 2019. However, the real wages in health care have increased more modestly over the decade, at just 1.4 percent growth. Real wages account for inflation, so even 1.4 percent growth outpaces inflation.

Industry Outlook and Future Workforce Needs

To determine the outlook for the three target industries, CCW forecasted growth over the next five years both for the sectors themselves and their component occupations. It is important to note that the complications of the COVID-19 pandemic and its effects on occupational and industry employment make forecasting more difficult, as it is unclear how the economic situation of the Los Angeles Basin will unfold throughout the recovery process. This report outlines CCW's best estimation of the future at the writing of this report, but changing circumstances could have a dramatic impact on the trajectory of these industries at some point in the near future.

Between 2019 and 2024, the three targeted industries for equitable recovery are all expected to add jobs. Compared to the average growth over the last decade in the previous section, projections are much more modest in health care and construction due to the pandemic and the effect that is has had on the overall economy of the Los Angeles Basin. However, the professional and business services sector is expected to add new jobs at a fairly rapid pace over the next five years as this sector becomes increasingly influential in the region. Exhibit 4-1 displays the breakdown by industry of net employment growth between 2019 and 2024 in these industries.

The number of projected new jobs can be combined with job openings from exits which includes attrition (retirements) and transfers (job churn), which collectively are referred to as replacements, to provide an overall estimate of employer hiring needs.

industry outlook

EXHIBIT 4-1
INDUSTRY OUTLOOK

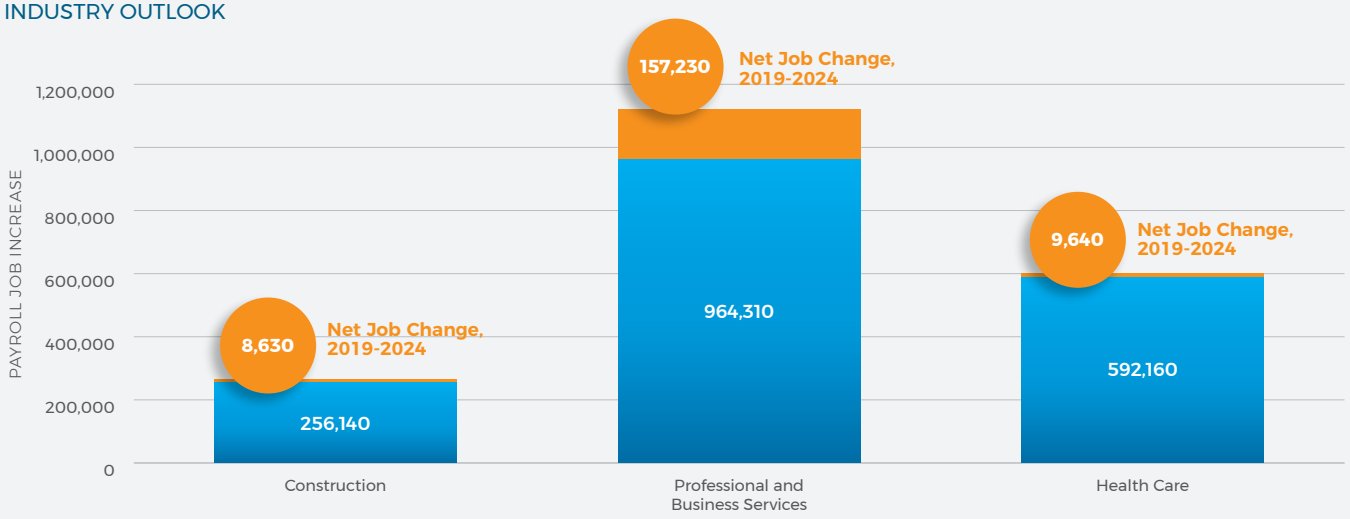


EXHIBIT 4-2
EMPLOYMENT OUTLOOK FOR THE TARGET INDUSTRIES

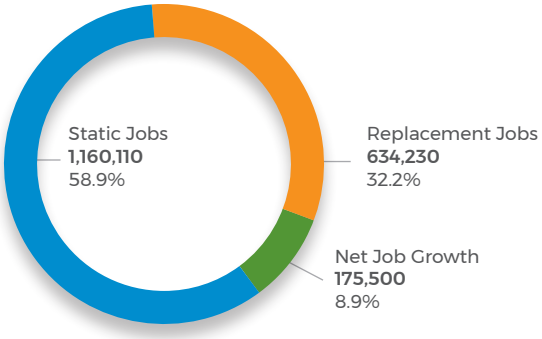
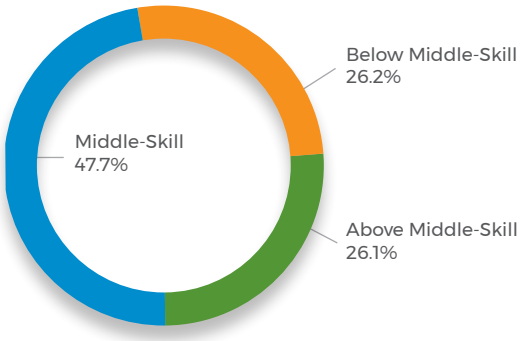


EXHIBIT 4-3
SKILLS CLASSIFICATION FOR THE TARGET INDUSTRIES



Overall, **809,820 total job openings are projected in the target industries in the Los Angeles Basin from 2019 to 2024,** of which an estimated 634,320 will be replacement workers. Net new jobs added will only account for 8.9% of these openings, as there are large numbers of workers in lower-skilled occupations with high rates of exits and employee churn in these sectors, which contributes heavily to the degree of total openings that will be present. As shown in Exhibit 4-2, roughly 59 percent of the jobs will be static, while 32 percent will be replacements.

Analysis of the skill classifications for total job openings over the next five years reveals **44 percent of projected openings will be for middle-skill occupations** (Exhibit 4-3), which reinforces the selection of this industry as a valid target for community college programs.

As these sectors account for 33.4 percent of all industry employment in the Los Angeles Basin, all manner of middle-skill occupations are available for workers seeking to upskill or find employment. It is important to note that net change in jobs can be negative while the number of total job openings remains high in an occupation with a lot of churn. Retirements also represent additional job opportunities not related to growth. In the event that the predicted net change in jobs in this particular **occupation were to slow and dip negative, the large** number of openings from individuals changing jobs and retiring would still represent opportunities for job seekers.

EXHIBIT 4-4
TOP OCCUPATIONS IN EQUITABLE RECOVERY TARGET INDUSTRIES BY REPLACEMENT JOBS, 2019-2024
Middle-Skill Occupations in italics

SOC	Occupation	Replacement Jobs
29-1141	*Registered nurses*	*18,810*
31-1120	*Home health and personal care aides*	*17,400*
31-1131	*Nursing assistants*	*13,420*
31-9092	*Medical assistants*	*13,130*
37-3011	Landscaping and groundskeeping workers	11,900
43-6014	*Secretaries and administrative assistants, except legal, medical, and executive*	*11,610*
13-1198	*Project management specialists and business operations specialists, all other*	*10,390*
43-4171	Receptionists and information clerks	10,180
43-3031	*Bookkeeping, accounting, and auditing clerks*	*10,150*
41-3091	*Sales representatives of services, except advertising, insurance, financial services, and travel*	*9,270*

Sources of Occupational Movement

Within these three industries, there is a lot of occupational movement stemming from workers exiting the industry or transferring between occupations, which creates replacement roles that must be filled. The top occupations with high levels of replacement jobs are registered nurses, home health and personal care aides, nursing assistants and medical assistants, all with over 13,000 replacement openings between 2019 and 2024 (Exhibit 4-4). As these occupations are frequently used as steppingstones to higher-level occupations within the health care sector, employment churn is significant. All four of these occupations are middle-skill opportunities.

Another middle-skill occupation with high replacement openings is secretaries and administrative assistants with over 11,600 replacements projected in this five-year span. Workers in this occupation can upskill into executive secretaries and executive administrative assistants, and these workers can also transition into other roles in the administrative and support services industry with the experience gained here. Other middle-skill roles that have high employment churn are project management and business operations specialists, bookkeeping, accounting and auditing clerks and sales representatives of services.

There are also occupations in our equitable recovery target industries that are projected to add many new jobs between 2019 and 2024, shown in Exhibit 4-5. Middle-skill administrative occupations are expected to be adding thousands of new jobs, particularly project management and business operations specialists and secretaries and administrative assistants. Many of the top middle-skill occupations adding new jobs are found in the professional and business services sector, which is anticipating strong growth over the next decade in the Los Angeles Basin. Along with these types of occupations, registered nurses are also projected to add nearly 2,200 jobs in the region. When combined with its anticipated replacement openings, there will be around 21,000 total openings for this occupation over the five-year span.

occupations

EXHIBIT 4-5
TOP OCCUPATIONS IN EQUITABLE RECOVERY TARGET INDUSTRIES BY NET JOB GROWTH, 2019-2024
Middle-Skill Occupations in italics

SOC	Occupation	New Jobs
13-1198	*Project management specialists and business operations specialists, all other*	*3,780*
43-6014	*Secretaries and administrative assistants, except legal, medical, and executive*	*3,580*
43-3031	*Bookkeeping, accounting, and auditing clerks*	*2,920*
41-3091	*Sales representatives of services, except advertising, insurance, financial services, and travel*	*2,900*
15-1299	Computer occupations, all other	2,850
13-1161	Market research analysts and marketing specialists	2,450
29-1141	*Registered nurses*	*2,170*
11-3031	Financial managers	2,130
15-1211	Computer systems analysts	1,910
15-1232	*Computer user support specialists*	*1,910*

Employer Demand

Exhibit 4-6 displays the top occupations in the three targeted industries by the amount of job postings in 2019, based on data from Burning Glass. The top middle-skill occupations by number of job postings are registered nurses, wholesale and manufacturing sales representatives (except technical and scientific products) and customer service representatives. The occupation in highest demand was software developers for applications, with over 25,000 job postings. As this is classified as a high-skill occupation, it may be harder for community college graduates to access without extensive training. Other strong middle-skill opportunities included computer systems engineers and architects, web developers, medical secretaries and paralegals and legal assistants.

The top employers in these sectors are primarily large health services corporations such as Kaiser Permanente, Cedars-Sinai and Prime Healthcare Services. In high demand from these companies were occupations such as registered nurses, licensed vocational nurses, critical care nurses and medical and health services managers. Other large employers included Deloitte, which advertised positions for analysts and a wide range of computer-related occupations, and IBM, which had openings for software developers and computer systems engineers and architects.

The most frequent location for these job postings was in the City of Los Angeles, the location of 32 percent of all advertised openings. Other cities with a high proportion of job postings included Irvine, Orange, Anaheim and Pasadena.

EXHIBIT 4-6
TOP OCCUPATIONS IN EQUITABLE RECOVERY TARGET INDUSTRIES BY JOB POSTINGS, 2019
Middle-Skill Occupations in italics

SOC	Occupation	Job Postings
15-1132	Software Developers, Applications	25,200
29-1141	*Registered Nurses*	*19,700*
41-4012	*Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products*	*19,100*
43-4051	*Customer Service Representatives*	*16,900*
33-9032	Security Guards	15,300
11-9199	Managers, All Other	9,300
11-9111	Medical and Health Services Managers	8,300
13-2011	Accountants	6,800
15-1199	*Computer Systems Engineers/Architects*	*5,800*
15-1134	*Web Developers*	*5,700*
43-3031	*Bookkeeping, Accounting, and Auditing Clerks*	*5,400*
15-1151	*Computer User Support Specialists*	*5,300*
23-1011	Lawyers	5,100
43-6013	*Medical Secretaries*	*5,000*
23-2011	*Paralegals and Legal Assistants*	*4,900*

Source: Burning Glass

Target Occupations

Target occupations predicted to have promising job prospects over the next five years and that stand to benefit from community college investments into postsecondary non-degree and career education programs include secretaries and administrative assistants, electricians and licensed practical and vocational nurses. The eleven highlighted (or target) occupations are shown in Exhibit 4-7, along with total job openings broken out by net new jobs and replacement jobs in Los Angeles Basin.

EXHIBIT 4-7
TARGET OCCUPATIONS: SIGNIFICANT JOB PROSPECTS, 2024

SOC	Occupation	New Jobs	Replacement Jobs	Total Job Openings	Entry-Level Hourly Wage
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	3,400	31,600	35,000	$16.64
29-2061	Licensed Vocational Nurses	1,200	13,700	14,900	$23.89
47-2111	Electricians	1,100	14,600	14,900	$23.59
43-6011	Executive Secretaries and Executive Administrative Assistants	1,300	9,100	10,400	$26.75
23-2011	Paralegals and Legal Assistants	1,700	4,600	6,300	$18.30
31-9091	Dental Assistants	300	5,900	6,200	$15.22
11-9021	Construction Managers	700	4,100	4,800	$41.02
27-1024	Graphic Designers	500	3,700	4,200	$21.42
47-4011	Construction and Building Inspectors	300	1,300	1,600	$36.23
47-2231	Solar Photovoltaic Installers	100	1,100	1,200	$17.22
29-1126	Respiratory Therapists	100	800	900	$32.89

Supply-side analysis provided by Centers of Excellence for Labor Market Research

The Centers of Excellence (COE) for Labor Market Research deliver regional workforce research and technical expertise to California Community Colleges for program decision-making and resource-development. This information has proven valuable to colleges in beginning, revising, or updating economic development and Career Education (CE) programs, strengthening grant applications, assisting in the accreditation process, and in supporting strategic planning efforts.

The Centers of Excellence Initiative is funded in part by the Chancellor's Office, California Community Colleges, Economic and Workforce Development Program. The Centers aspire to be the leading source of regional workforce information and insight for California Community Colleges.

More information about the Centers of Excellence is available at coeccc.net.

Student Demographics in the LA Basin

With more than 2 million students enrolled across the state in the 2018-19 academic year, the California Community Colleges (CCCs) is the largest community college system in the nation, as well as one of the most diverse.[2] About one half of those students (more than 1 million) are enrolled in career education (CE) programs, a niche community college training area that contributes to California's middle-skill workforce. CE programs offered by the CCCs are grouped into 12 sectors designated by the California Community Colleges Chancellor's Office (CCCCO) that closely align with the industry sectors discussed in the previous demand-side analysis of this report.

Within the LA Basin, the 28 community colleges and one stand-alone continuing education school offer CE programs related to the 12 industry sectors designated by the Chancellor's Office. In the 2018-19 academic year, more than 356,500 students enrolled in CE courses, accounting for 35% of all CE students statewide.

The size and breadth of offerings within each sector varies. Overall, the Information and Communication Technologies/Digital Media sector and Business & Entrepreneurship sector are the largest in terms of student enrollment (Exhibit 5-1). The Business & Entrepreneurship sector issued the most awards in 2019-20, a total of 14,227, followed by the Health sector which issued 6,126 awards.

2 Cal-PASS Plus LaunchBoard: https://www.calpassplus.org/LaunchBoard.

EXHIBIT 5-1
COMMUNITY COLLEGE PIPELINE STUDENTS, ENROLLMENTS AND AWARDS BY SECTOR IN THE LA BASIN

Sector	Community College Pipeline Students 2018-19 [3]	Awards 2019-2020 [4]
Information & Communication Technologies/Digital Media	90,308	4,612
Business & Entrepreneurship	85,684	14,227
Public Safety	57,794	4,559
Health	52,041	6,126
Education & Human Development	51,300	5,156
Energy, Construction & Utilities	21,809	1,828
Unassigned	21,024	982
Retail, Hospitality & Tourism	15,980	1,793
Advanced Manufacturing	11,902	1,540
Advanced Transportation & Logistics	9,327	1,972
Agriculture, Water & Environmental Technologies	4,934	428
Global Trade	1,620	198
Life Sciences/Biotechnology	607	162
Total	**424,330**	**43,583**

3 Most recent data from LaunchBoard. All students who took at least 0.5 units in a single credit course or who had at least 12 positive attendance hours in any single noncredit course excluding Special Admit on any TOP code in the selected year. Sum of students is greater than the 356,517 as students enrolled in courses from multiple sectors are counted once per sector.

4 Most recent data from California Community Colleges Chancellors Office Management Information Systems Data Mart.

EXHIBIT 5-2
RACE/ETHNICITY OF CE STUDENTS
IN THE LA BASIN AND CALIFORNIA, 2018-19

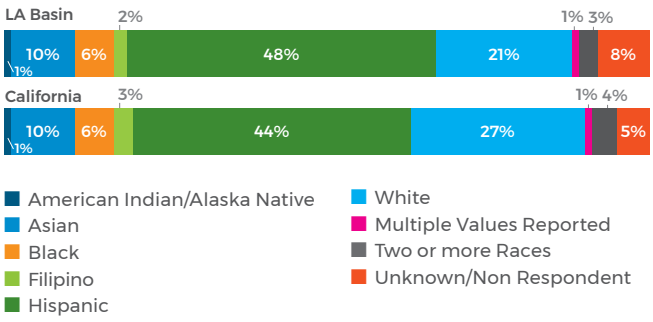


Exhibit 5-2 compares the race and ethnicity of community college students in the LA Basin to California. Compared to the state, the LA Basin enrolls a smaller proportion of white students and larger proportion of Hispanic students. In the region, students who identify as Hispanic comprise 48% of CE students, compared to 44% in the state.

Exhibit 5-3 shows the breakdown of student race and ethnicity for all 12 sectors in the LA Basin. There is great variation among sectors. For example, the Agriculture, Water & Environmental Technologies sector has the highest concentration of white students, 30%, while white students comprise about 20% or less of the student enrollment in the remaining 11 sectors. Hispanic students account for about 50% of student enrollment in most sectors, but total 60% in three notable areas: Energy, Construction & Utilities; Advanced Transportation & Logistics; and Education & Human Development.

The highest percentages of Asian students occur in the Life Sciences/Biotech, ICT/Digital Media and Business & Entrepreneurship sectors. In comparison, the highest percentage of Black students as occurs in Business & Entrepreneurship as well as Retail, Hospitality & Tourism.

The LA Basin has a larger proportion of Hispanic students across all sectors than California. The sectors with a higher percentage of Hispanic students in the LA Basin compared to the state are:

- **Advanced Transportation & Logistics (61% in the LA Basin compared to 55% in the state)**
- **Education & Human Development (61% in the LA Basin compared to 54% in the state)**
- **Life Sciences/Biotechnology (50% in the LA Basin compared to 37% in the state)**

There are several sectors in the LA Basin in which students of color comprise a larger proportion compared to the state:

- **Advanced Transportation & Logistics (80% in the LA Basin compared to 75% in the state)**
- **Education & Human Development (80% in the LA Basin compared to 74% in the state)**
- **Energy, Construction & Utilities (76% in the LA Basin compared to 65% in the state)**
- **Advanced Manufacturing (72% in the LA Basin compared to 64% in the state)**
- **Agriculture, Water & Environmental Technologies (66% in the LA Basin compared to 57% in the state)**

For details on the gender and age of CE students in the LA Basin, see Exhibits A-1 and A-2 in the Appendix.

Student Earnings by Sector

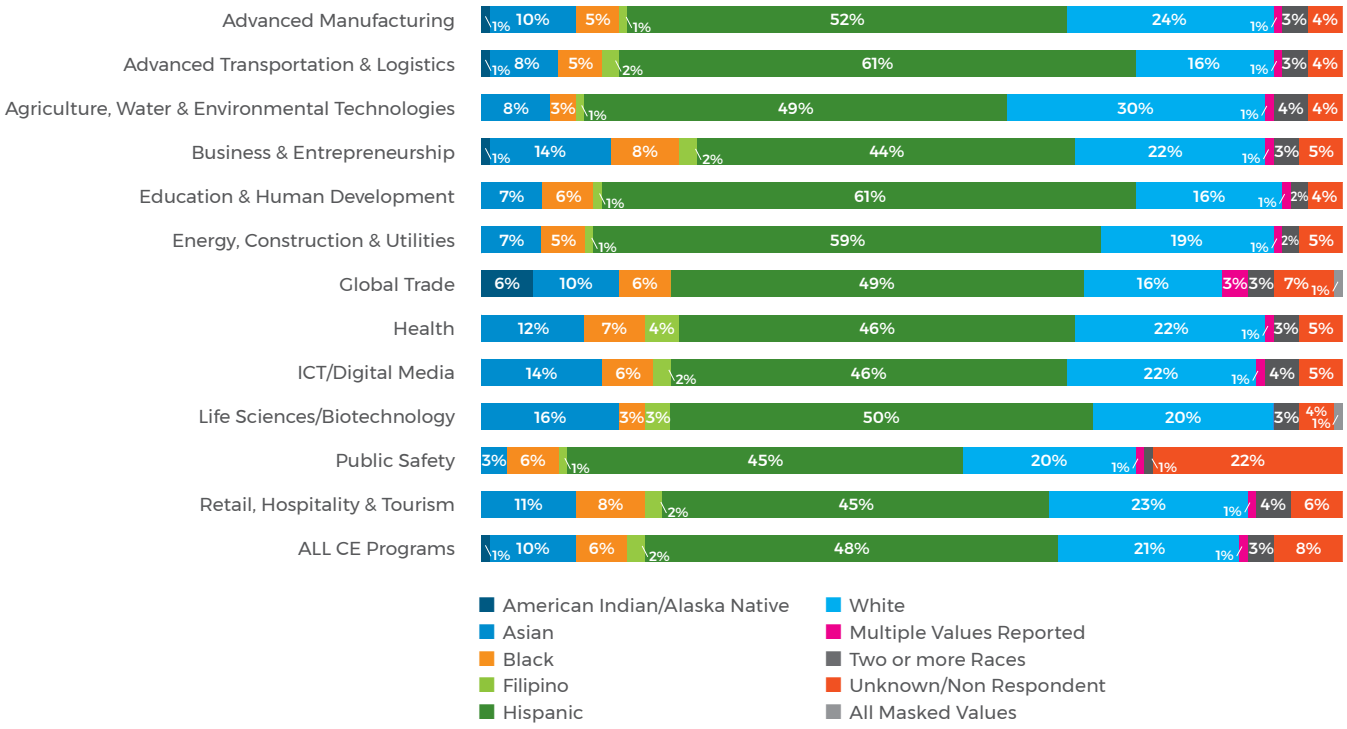
Through the CTE Outcomes (CTEOS) Survey and California's Unemployment Insurance (UI) Wage File, community colleges in the LA Basin track student employment outcomes, including how much students earn once exiting a program. Depending on the sector, on average, students who exit a program earn anywhere from $26,128 to $49,044 per year (Exhibit 5-4).

Students exiting Energy, Construction & Utilities sector programs earn nearly $23,000 more than their counterparts exiting Education & Human Development programs. For context, the median annual earnings of students across all CE programs in the LA Basin is $33,048, which is nearly $2,000 higher than the living wage estimate for a single adult in the region ($15.04/hour or $31,283/year).

The differences in annual median earnings among sectors can be explained by the fact that each sector provides vocational training for a specific set of occupations, which can vary greatly in terms of pay. To view other student employment outcomes by sector, see Exhibit A-3 in the Appendix.

Of the three industries identified in the demand-side analysis, student earnings are highest in the Energy, Construction & Utilities sector, followed by the Business & Entrepreneurship sector. Health earnings are somewhat lower on average, indicating that education and training providers may want to target pathways into specific health occupations that pay well.

EXHIBIT 5-3
RACE/ETHNICITY OF CE STUDENTS IN THE LA BASIN BY SECTOR, 2018-19



industry sectors

EXHIBIT 5-4
MEDIAN ANNUAL EARNINGS FOR STUDENTS EXITING CCCCO SECTOR PROGRAMS IN THE LA BASIN, 2017-18

Student Earnings by Race/Ethnicity

Just as median annual earnings vary across sectors, earnings also vary among students from certain racial or ethnic backgrounds. These disparities are apparent in Exhibit 5-5 with students who identify as two or more races and students who identify as Black earning around $28,000 per year compared to white students earning more than $35,600 per year and Asian students earning $38,800 per year. Four groups earn less than the average across all CE programs: two or more races, Black, American Indian/Alaska Native, and Hispanic students. White and Asian students earn the most as well as those students who chose not to report their race/ethnicity.

For each sector, Exhibit 5-6 displays the median annual earnings of students in four groups defined by race/ethnicity: Asian, Black, Hispanic, and white. On average, Black students earn the lowest amount in seven out of the 12 sectors. Hispanic students earn the lowest amount in all other sectors except for Agriculture, Water & Environmental Technologies, which is the only sector in which white students earn the least. Asian students have the highest earnings of these groups in nine sectors, with white students earning the highest in the remaining three sectors (Advanced Transportation & Logistics; Energy, Construction & Utilities; and Public Safety).

The sector with the largest inequities in terms of earnings by race/ethnicity is Public Safety, where white students earn $55,000 more than Black students, and nearly triple the earnings of Hispanic students. The disparity in pay for Black students when compared to white students is especially stark across nearly all sectors, and it is noteworthy that no Black students are represented in the outcomes data for the Life Sciences/Biotech sector. Similarly, earnings for Hispanic students trail white students, with Agriculture, Water & Environmental Technologies the only exception.

FACTORS AND FURTHER STUDY OF EARNINGS BY RACE & ETHNICITY

The difference in median annual earnings by race/ethnicity within the 12 sectors is striking and warrants additional analyses. The data indicate that after exiting programs within each sector, student earnings vary by reported race and ethnicity, but this does not tell the entire story. For example, this aggregated data does not provide occupational-level information, so it is difficult to say why these inequities exist. Some factors are known, such as in Public Safety where some higher-wage occupations have higher representation by white workers, which is reflected in the average wage for a specific demographic. For example, the occupation of first-line supervisors of firefighting and prevention workers pays a high median wage of $87.23 per hour and has demographic representation of 17.5% Hispanic and 61.2% white, which tends to increase the average wage for white workers in the Public Safety sector. But, drawing conclusions is difficult based on the way different public datasets group occupational and industry data, leaving much opportunity for further study to understand equity in the LA Basin's economy.

EXHIBIT 5-5
MEDIAN ANNUAL EARNINGS BY RACE/ETHNICITY FOR STUDENTS EXITING CE PROGRAMS IN THE LA BASIN, 2017-18

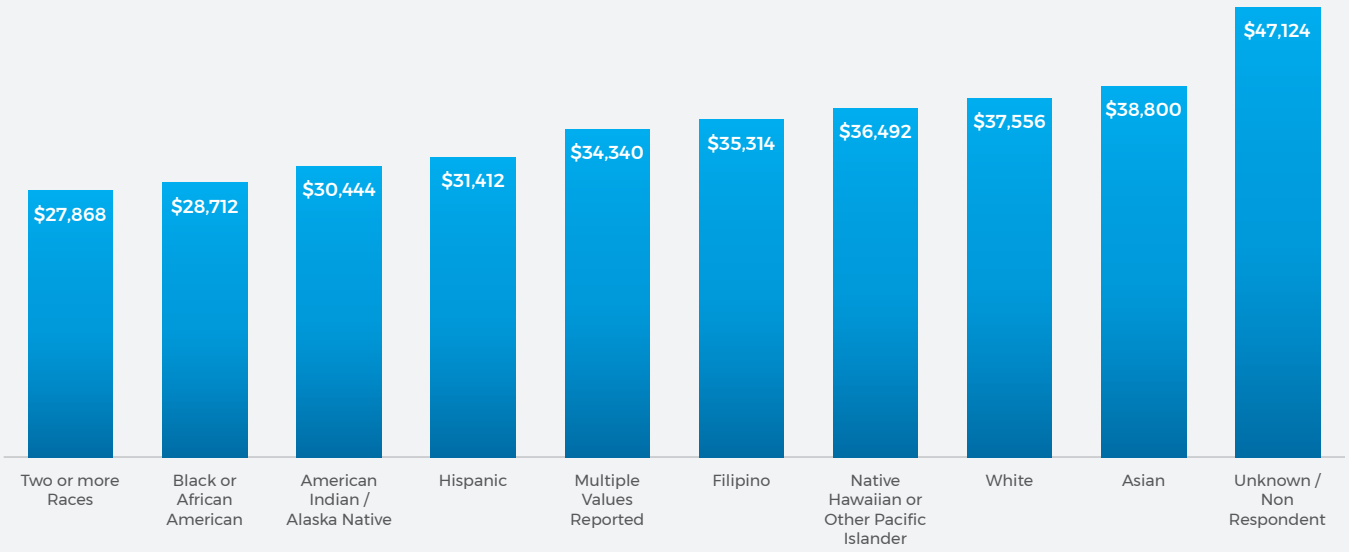
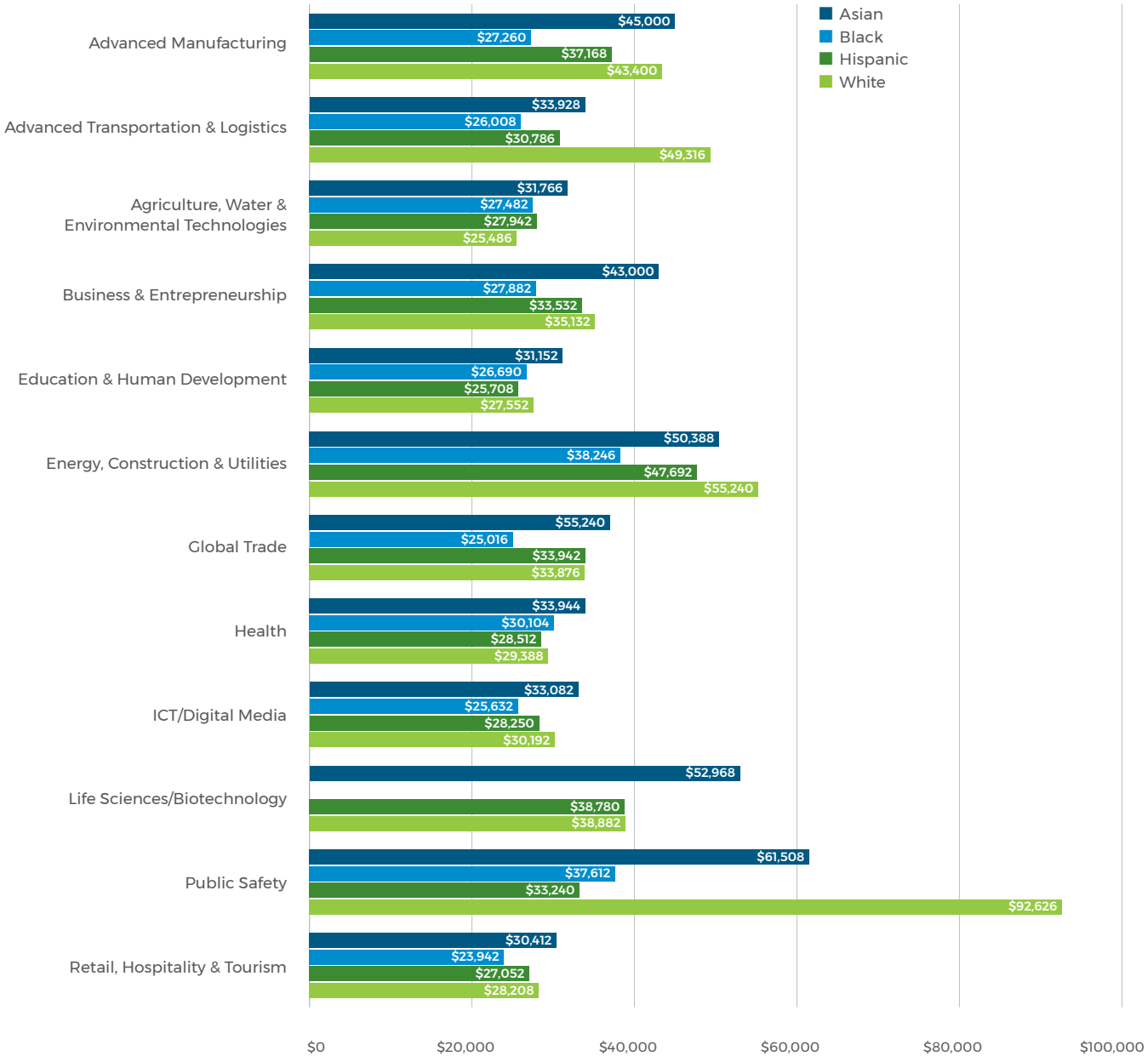


EXHIBIT 5-6
MEDIAN ANNUAL EARNINGS BY RACE/ETHNICITY AND SECTOR IN THE LA BASIN, 2017-18



While this report frames some — but not all — of the important issues related to equity to inform readers, there is ample room for additional analyses that can help identify ways to increase participation in higher wage occupations that will advance the prosperity of specific demographic groups and improve economic mobility.

Supply/Demand Analysis for Target Occupations

As part of this study's analysis, 11 target middle-skill occupations were selected based on their prevalence within the three industries of focus: construction, health care and professional and business services. These occupations were chosen because of the opportunity they present for a more equitable recovery, due to a high number of annual job openings and because they offer entry-level wages (25th percentile) that are above the living wage threshold for a single adult. The living wage threshold is $15.04/hour in Los Angeles County and $17.36/hour in Orange County. (A detailed profile of each occupation with demographics, job posting analysis and labor market data is included at the end of this report.)

Community colleges in the region offer noncredit awards, certificates and associate degrees in many areas that provide the necessary training for the 11 occupations. In the LA Basin, community colleges offer 14 unique certificate and degree programs related to these occupations. Exhibit 5-7 shows the community college programs providing training for these occupations with the greatest average number of awards over the last three academic years. On average, Office Technology/Office Computer Applications programs have conferred 944 awards in the LA Basin each year, followed by paralegal programs, a total of 473 awards.

Exhibit 5-7 displays a comparison of projected employment demand for the 11 occupations and the supply of students being prepared by community college programs that align with these occupations. Please note one program may train for more than one occupation, and for the purpose of this study, the 11 occupations have been divided into the three industries of focus in this report:

1. **Construction**
2. **Health Care**
3. **Professional and Business Services**

Because a program can train for more than one occupation, in Exhibit 5-7 a program and the average annual awards are sometimes included more than once. For example, Office Technology/Office Computer Applications trains for two occupations: executive secretaries and executive administrative assistants; and secretaries and administrative assistants, except legal, medical, and executive. As a result, supply and demand is not an apples-to-apples comparison, and caution must be exercised when making connections between the number of awards (degrees and certificates) conferred and the number of annual openings associated with a single occupation.[6]

In total, the 11 occupations are projected to offer 18,400 annual job openings. Of those, secretaries and administrative assistants, except legal, medical, and executive comprise the largest share of annual job openings, a total of 7,000.

Community colleges in the LA Basin have conferred on average each year 2,637 awards through programs related to the 11 occupations. Community college students can obtain training for the majority of these occupations in approximately one year and in most cases, they can expect to earn entry-level wages above $15.04/hour.

PROGRAMS WITH THE MOST COMPLETIONS

- Office Technology/Office Computer Applications: **944**
- Paralegal: **473**
- Graphic Art and Design: **216**
- Electrical: **207**
- Licensed Vocational Nursing: **199**

6 Please note that college data in this section is derived from two primary sources. The first is the Chancellor's Office Management Information Systems Data Mart. This database contains state, district, and college-level information about community college students and programs. The second is Cal-PASS Plus LaunchBoard, a statewide data system that provides information on progress, employment, and earnings outcomes of community college students. These two data systems contain similar metrics, but due to different intended uses and how each metric is calculated, values can vary between systems. Completion data for non-community-college programs, such as for-profit proprietary schools, is sourced from the Integrated Postsecondary Education System (IPEDS).

EXHIBIT 5-7
COMPARISON OF WORKFORCE DEMAND AND COMMUNITY COLLEGE SUPPLY, ACADEMIC YEARS 2017-18 TO 2019-20

Occupation	Annual Job Openings	Community College Program	3-Year Average Awards
CONSTRUCTION OCCUPATIONS			
Construction Managers	1,000	Civil and Construction Management Technology	24
Electricians	3,200	Electrical	207
Solar Photovoltaic Installers	200	Energy Systems Technology	44
Construction and Building Inspectors	300	Construction Inspection	47
HEALTH CARE OCCUPATIONS			
Respiratory Therapists	200	Respiratory Care/Therapy	163
Licensed Vocational Nurses	3,000	Licensed Vocational Nursing	199
Dental Assistants	1,200	Dental Assistant	137
PROFESSIONAL AND BUSINESS SERVICES OCCUPATIONS			
Paralegals and Legal Assistants	1,300	Paralegal	473
Graphic Designers	800	Digital Media	35
		Multimedia	36
		Computer Graphics and Digital Imagery	76
		Graphic Art and Design	216
Executive Secretaries and Executive Administrative Assistants	2,100	Office Technology/Office Computer Applications	944
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	7,000	Office Technology/Office Computer Applications	944

Construction Occupations

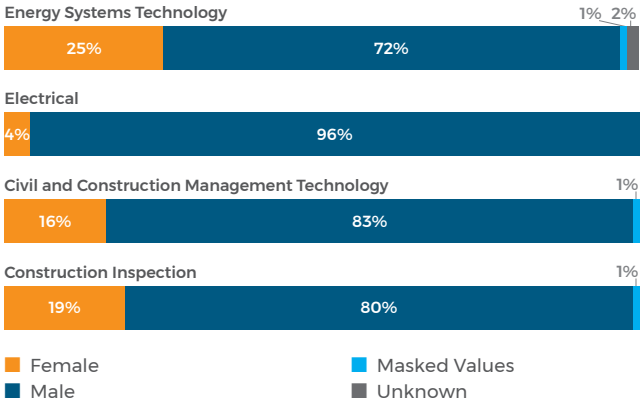
REGIONAL COLLEGES ISSUING AWARDS

LA Colleges:
East LA, LA Trade Tech, LA Valley, Mt. San Antonio, Pasadena, Rio Hondo, Santa Monica

OC Colleges:

Coastline, Fullerton, Golden West, Irvine Valley, North Orange Adult, Orange Coast, Saddleback, Santiago Canyon

STUDENT GENDER, 2019



In 2019, the LA Basin employed 59,300 workers in the four occupations that make up the construction grouping:

- **Electricians**
- **Construction Managers**
- **Construction and Building Inspectors**
- **Solar Photovoltaic (Solar Panel) Installers**

These four occupations are projected to gain 2,200 new jobs over the next five years. Workers in these occupations earn entry-level hourly wages that range from $17.22 to $41.02, translating to between $35,820 for solar photovoltaic installers and $85,320 per year for construction managers, assuming full-time employment.[7] Projections show there will be 23,400 combined job openings for this group over the next five years due to replacements (transfers and exits) and job growth. It should be noted that several job opportunities exist as well that are adjacent to solar, as demand increases for battery-based energy storage and electric vehicle charging, which are often paired with solar installations, creating additional demand for workers.

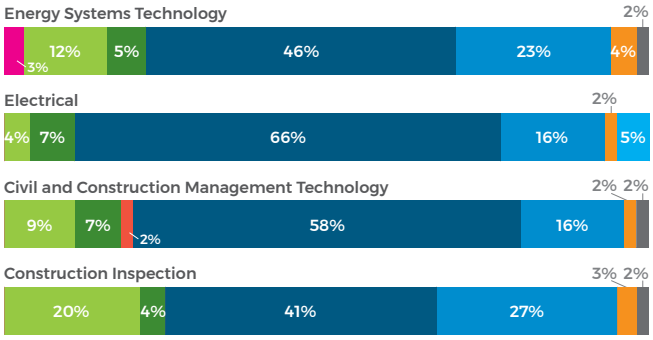
On average, 322 awards (degrees and certificates) in programs related to this grouping of four occupations were conferred annually by community colleges over the most recent three academic years. According to the most recent data from LaunchBoard, the statewide data system for tracking progress, success, employment, and earnings outcomes for community college students, these awards were issued to 197 completers, and 71 transferred to a four-year college or university.

In sum, there are 4,700 annual openings for these four construction occupations, when including new and replacement jobs. With 322 annual average awards reported by community colleges and an annual average of 487 awards across three non-community college programs, there is a potential supply gap of 3,891 workers, meaning that **there are currently far more job opportunities projected than skilled workers trained in these areas.**

A total of 4,908 community college students enrolled in related courses in the LA Basin in 2018-19. Demographic information and employment outcomes for students in these programs appear below.

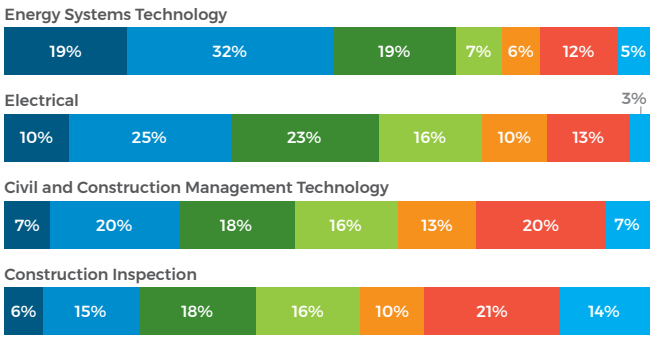
7 Entry-level wages represent 25th percentile earnings, meaning 25% of workers make the listed hourly amount or less.

STUDENT RACE/ETHNICITY, 2019



- American Indian/Alaska Native
- Asian
- Black or African American
- Filipino
- Hispanic
- Native Hawaiian or Other Pacific Islander
- White
- Multiple Values Reported
- Two or More Races
- Unknown/Non-Respondent
- Masked Values

STUDENT AGE DISTRIBUTION, 2019



- 19 or less
- 20 to 24
- 25 to 29
- 30 to 34
- 35 to 39
- 45 to 54
- 55 and older

STUDENT OUTCOMES FOR PROGRAMS RELATED TO CONSTRUCTION PROGRAMS

Program	Obtained Job Closely Related to Field of Study (2016-17)	Median Annual Earnings (2017-18)	Median Change in Earnings (2017-18)	Attained a Living Wage (2017-18)
Energy Systems Technology	80%	$39,458	11%	62%
Electrical	82%	$47,144	46%	72%
Civil and Construction Management Technology	78%	$56,376	19%	77%
Construction Inspection	80%	$48,000	25%	69%

Health Care Occupations

REGIONAL COLLEGES ISSUING AWARDS

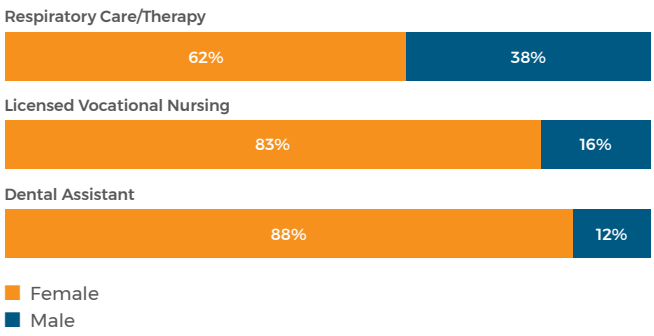
LA Colleges:

Cerritos, Citrus, Compton, East LA, El Camino, LA Valley, Long Beach, Mt. San Antonio, Pasadena, Rio Hondo, Santa Monica, West LA

OC Colleges:

Cypress, Orange Coast

STUDENT GENDER, 2019



In 2019, the LA Basin employed 36,900 workers in the three occupations that make up the health care grouping:

- **Licensed Vocational Nurses**
- **Dental Assistants**
- **Respiratory Therapists**

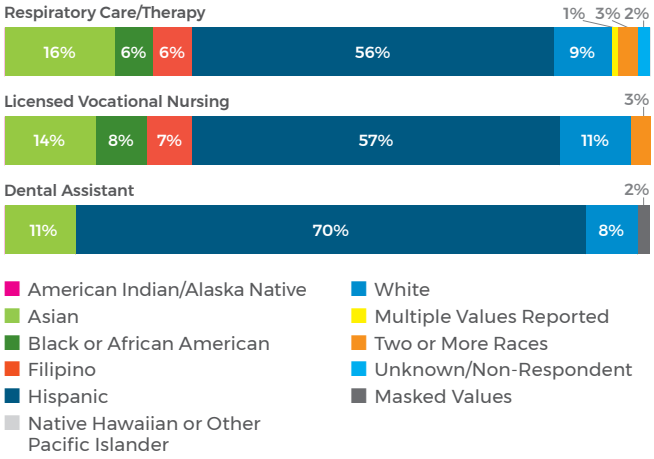
These three occupations are projected to gain 1,600 new jobs over the next five years. Workers in these occupations earn entry-level hourly wages that range from $15.22 to $32.89, translating to between $31,660 for dental assistants and $68,410 per year for respiratory therapists, assuming full-time employment. Projections show there will be 22,000 combined job openings for this group over the next five years due to replacements (transfers and exits) and job growth.

On average, 500 awards (degrees and certificates) in related programs were conferred annually by community colleges over the last three academic years. According to the most recent data from LaunchBoard, these awards were issued to 374 completers, and 68 transferred to a four-year college or university.

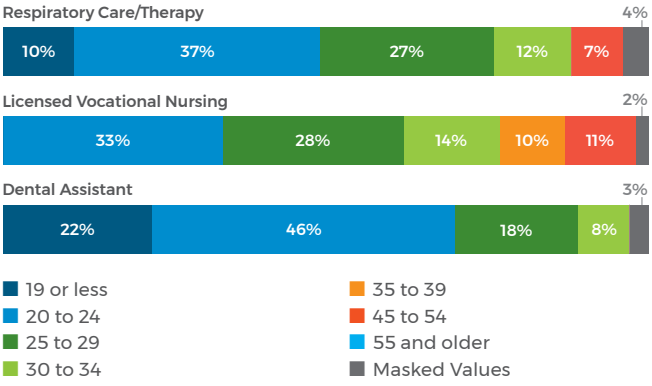
In sum, there are 4,400 annual openings for these three health care occupations, when including new and replacement jobs. With 500 annual average awards reported by community colleges and an annual average of 2,423 awards across three non-community college programs, there is a potential supply gap of 1,477 workers, meaning that **there are currently far more job opportunities projected than skilled workers trained in these areas.**

A total of 1,909 community college students enrolled in related courses in the LA Basin in 2018-19. Demographic information and employment outcomes for students in these programs appear below.

STUDENT RACE/ETHNICITY, 2019



STUDENT AGE DISTRIBUTION, 2019



STUDENT OUTCOMES RELATED TO HEALTH PROGRAMS

Program	Obtained Job Closely Related to Field of Study (2016-17)	Median Annual Earnings (2017-18)	Median Change in Earnings (2017-18)	Attained a Living Wage (2017-18)
Respiratory Care/Therapy	84%	$29,600	70%	44%
Licensed Vocational Nursing	80%	$33,392	57%	52%
Dental Assistant	82%	$22,548	36%	25% (16-17)

Professional and Business Services Occupations

REGIONAL COLLEGES ISSUING AWARDS

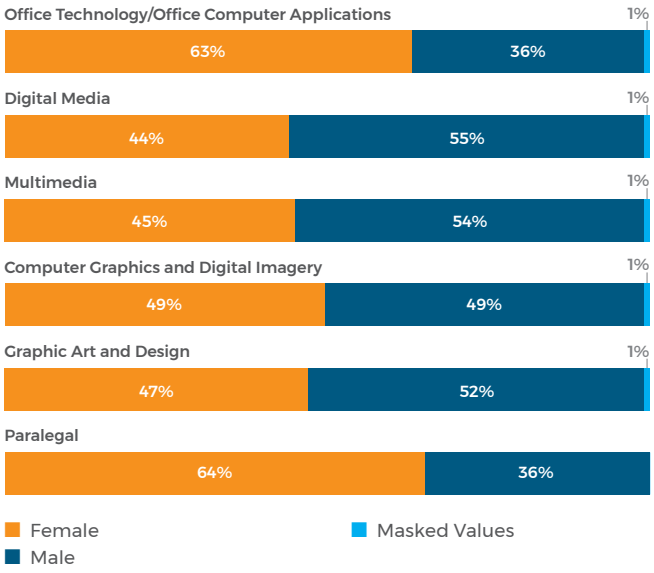
LA Colleges:

Cerritos, Citrus, Compton, East LA, El Camino, Glendale, LA City, LA Harbor, LA Mission, LA Pierce, LA Southwest, LA Trade Tech, LA Valley, Long Beach, Mt. San Antonio, Pasadena, Rio Hondo, Santa Monica, West LA

OC Colleges:

Coastline, Cypress, Fullerton, Golden West, Irvine Valley, North Orange Adult, Orange Coast, Saddleback, Santa Ana, Santiago Canyon

STUDENT GENDER, 2019



In 2019, the LA Basin employed 121,900 workers in the four occupations that make up the professional and business services grouping:

- **Secretaries and Administrative Assistants**
- **Executive Secretaries and Executive Administrative Assistants**
- **Paralegals and Legal Assistants**
- **Graphic Designers**

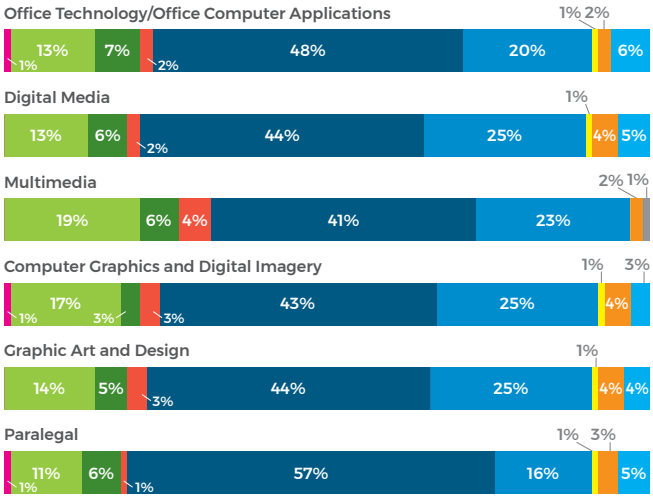
These four occupations are projected to increase by 7,000 jobs over the next five years. Workers in these occupations earn entry-level hourly wages that range from $16.64 to $26.75, translating to between $34,610 for secretaries and administrative assistants, except legal, medical, and executive and $55,640 per year for executive secretaries and executive administrative assistants, assuming full-time employment. In total, there will be 55,900 combined job openings for this group over the next five years due to replacements (transfers and exits) and job growth.

On average, 1,780 awards (degrees and certificates) in related programs were conferred annually by community colleges over the last three academic years. According to the most recent data from LaunchBoard, these awards were issued to 1,186 completers, and 1,700 transferred to a four-year college or university.

In sum, there are 11,200 annual openings for these four professional and business services occupations, when including new and replacement jobs. With 1,780 annual average awards reported by community colleges and an annual average of 1,005 awards across 12 non- community college programs, there is a potential supply gap of 8,380 workers, meaning that **there are currently more job opportunities projected than skilled workers trained in these areas.**

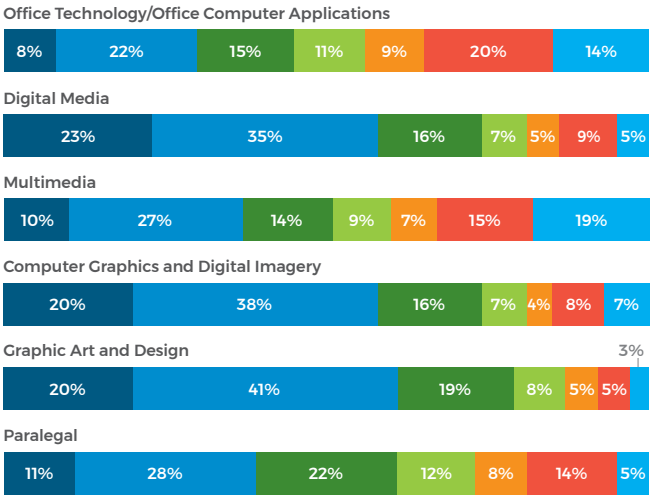
A total of 36,972 community college students enrolled in related courses in the LA Basin in 2018-19. Demographic information and employment outcomes for students in these programs appear below.

STUDENT RACE/ETHNICITY, 2019



- American Indian/Alaska Native
- Asian
- Black or African American
- Filipino
- Hispanic
- Native Hawaiian or Other Pacific Islander
- White
- Multiple Values Reported
- Two or More Races
- Unknown/Non-Respondent
- Masked Values

STUDENT AGE DISTRIBUTION, 2019



- 19 or less
- 20 to 24
- 25 to 29
- 30 to 34
- 35 to 39
- 45 to 54
- 55 and older

STUDENT OUTCOMES FOR PROGRAMS RELATED TO PROFESSIONAL AND BUSINESS SERVICES PROGRAMS

Program	Obtained Job Closely Related to Field of Study (2016-17)	Median Annual Earnings (2017-18)	Median Change in Earnings (2017-18)	Attained a Living Wage (2017-18)
Office Technology/Office Computer Applications	60%	$29,536	17%	42%
Digital Media	59%	$25,092	21%	33%
Multimedia	64%	$27,912	18%	34%
Computer Graphics and Digital Imagery	56%	$27,264	15%	35%
Graphic Art and Design	64%	$25,708	39%	34%
Paralegal	65%	$35,702	35%	55%

To better understand where these three industry subsectors are headed, growth was forecasted over the next five years. This forecast is used to extrapolate future workforce needs and the demand for workers.

Construction

SIZING THINGS UP

Construction employed 256,140 payroll workers in the Los Angeles Basin in 2019, accounting for 4.7% of total regional employment across all industries.

Specialty trade contractors employs about 170,000 of these workers, while construction of buildings has 61,000 and heavy and civil engineering construction has 26,000 workers respectively.

INDUSTRY OUTLOOK

Between 2019 and 2024, there is a projected net job change of 8,630 in the Los Angeles Basin, **a 3.4% increase** in employment.

FUTURE WORKFORCE NEEDS

Overall, **101,420 total job openings will be created in construction over the next five years,** of which an estimated 8,630 will be net new jobs and 92,790 will be replacement workers.

Analysis of the skills classifications for total job openings over the next five years reveals that **56.7% of projected openings are for middle-skill occupations,** meaning they are accessible via community college.

TOP UNIQUE MIDDLE-SKILL OCCUPATIONS

Middle-skill occupations projected to have significant job prospects over the next five years in construction include carpenters, electricians, first-line supervisors of construction trades and extraction workers and heating, air conditioning and refrigeration mechanics and installers. It should be noted that average wages by race and ethnicity are influenced by which specific occupations are most commonly held by specific demographic groups, because some occupations pay more and some pay less.

EXHIBIT 6-1

MIDDLE-SKILL OCCUPATIONS:

SIGNIFICANT JOB PROSPECTS THROUGH 2024

Occupational Group	Annual Openings
Electricians	**3,200**
Carpenters	**2,190**
First-Line Supervisors of Construction Trades and Extraction Workers	**1,070**
Plumbers, Pipelayers and Steamfitters	**1,000**
Heating, Air Conditioning and Refrigeration Mechanics & Installers	**520**

EXHIBIT 6-2
SKILLS CLASSIFICATION FOR THE REGION'S CONSTRUCTION INDUSTRY OPENINGS, 2019-2024

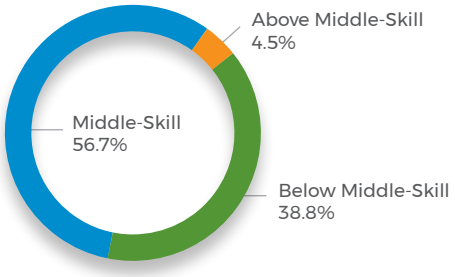


EXHIBIT 6-3
INDUSTRY OUTLOOK

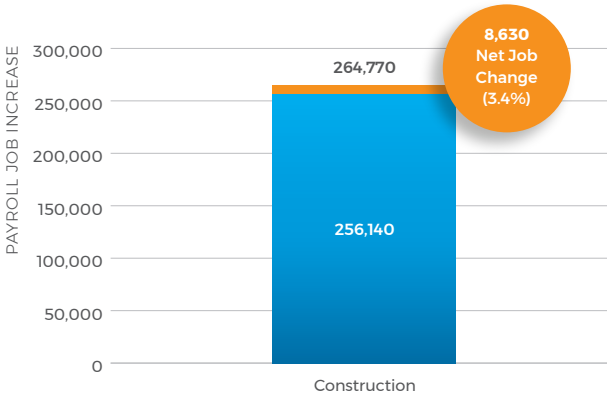


EXHIBIT 6-4
AGE OF WORKERS, 2019

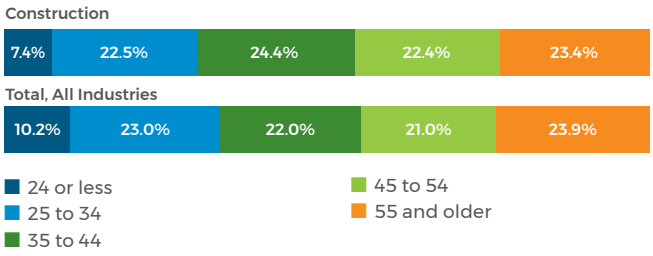


EXHIBIT 6-5
EDUCATIONAL ATTAINMENT OF WORKERS, 2019

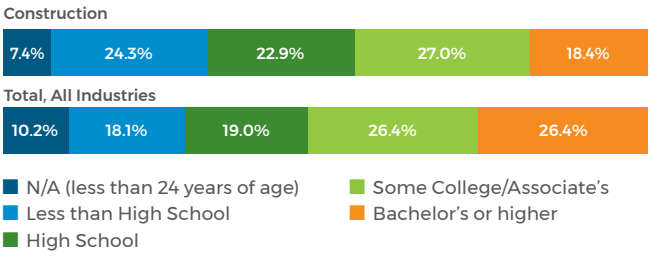


EXHIBIT 6-6
RACE/ETHNICITY OF WORKERS, 2019

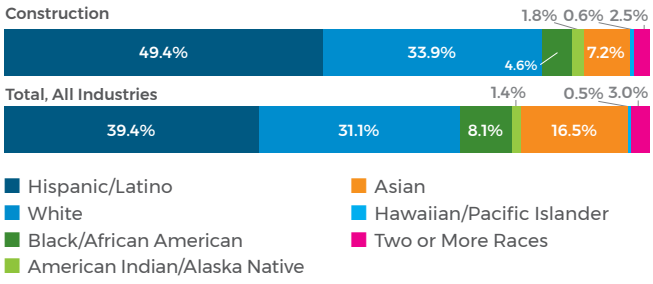
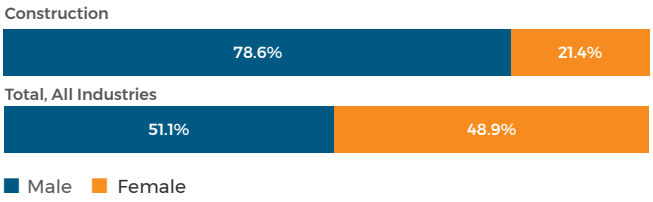


EXHIBIT 6-7
GENDER OF WORKERS, 2019



AVERAGE WAGES BY RACE AND ETHNICITY IN CONSTRUCTION
LOS ANGELES BASIN, 2019

- **Hispanic: $61,000**
- **White: $74,400**
- **Asian: $66,800**
- **Black: $61,600**
- **American Indian/Alaska Native: $60,700**
- **Hawaiian/Pacific Islander: $63,900**

Professional and Business Services

SIZING THINGS UP

The professional and business services sector employed 964,310 payroll workers in the Los Angeles Basin in 2019, accounting for 17.7% of total regional employment across all industries.

Professional and technical services is the largest component sector with roughly 429,000 employees, while administrative and support services also employ 417,000. Another 101,000 workers are employed in the management of companies and enterprises industry, while 17,000 are in waste management and remediation.

INDUSTRY OUTLOOK

Between 2019 and 2024, there are projected to be 157,230 net new jobs added to the professional and business services sector in the Los Angeles Basin. This equates to 16.3% job growth over the five-year span.

FUTURE WORKFORCE NEEDS

Overall, **505,270 total job openings will be created in water transportation over the next five years,** of which an estimated 157,230 will be net new jobs and 348,040 will be replacement workers.

Analysis of the skills classifications for total job openings over the next five years reveals that **32.9% of projected openings are for middle-skill occupations** and 37.5% for below middle-skill occupations.

TOP UNIQUE MIDDLE-SKILL OCCUPATIONS

Middle-skill occupations projected to have significant job prospects over the next five years in this sector feature customer service representatives, secretaries and administrative assistants, project management specialists and sales representatives of services.

EXHIBIT 6-8

MIDDLE-SKILL OCCUPATIONS:

SIGNIFICANT JOB PROSPECTS THROUGH 2024

Occupational Group	Annual Openings
Customer Service Representatives	**2,410**
Secretaries and Administrative Assistants	**2,380**
Project Management Specialists & Business Operations Specialists, All Other	**2,220**
Sales Representatives of Services	**1,980**
Bookkeeping, Accounting and Auditing Clerks	**1,960**

EXHIBIT 6-9
SKILLS CLASSIFICATION FOR THE REGION'S PROFESSIONAL AND BUSINESS SERVICES INDUSTRY OPENINGS, 2019-2024

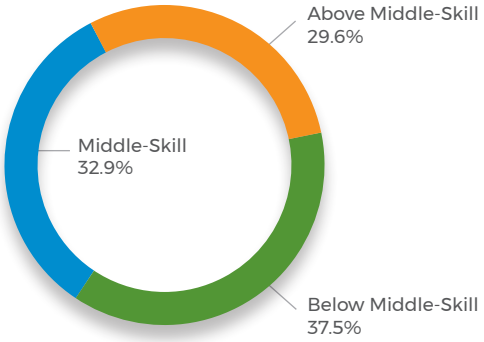


EXHIBIT 6-10
INDUSTRY OUTLOOK

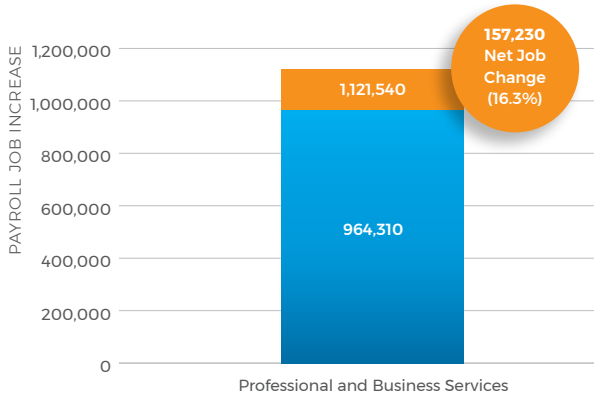


EXHIBIT 6-11
AGE OF WORKERS, 2019

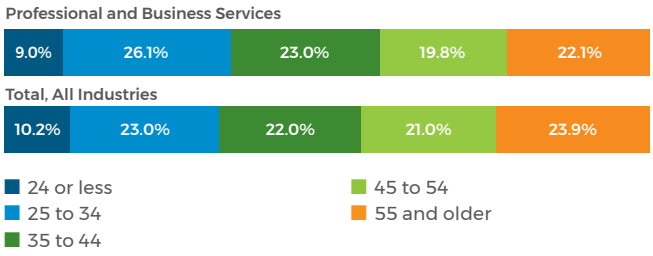


EXHIBIT 6-12
EDUCATIONAL ATTAINMENT OF WORKERS, 2019

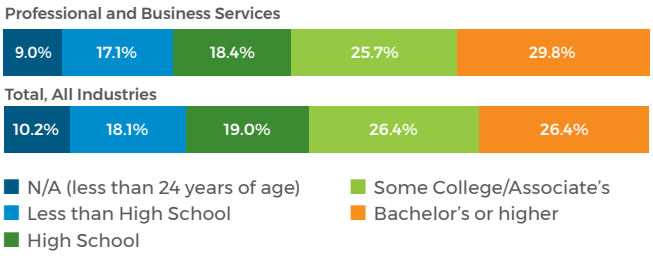


EXHIBIT 6-13
RACE/ETHNICITY OF WORKERS, 2019

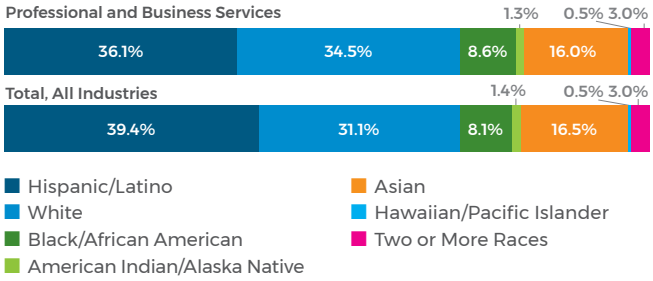
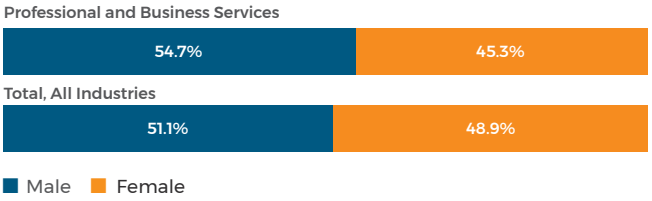


EXHIBIT 6-14
GENDER OF WORKERS, 2019



AVERAGE WAGES BY RACE AND ETHNICITY IN PROFESSIONAL AND BUSINESS SERVICES
LOS ANGELES BASIN, 2019

- Hispanic: $48,400
- White: $80,800
- Asian: $88,100
- Black: $49,800
- American Indian/Alaska Native: $47,100
- Hawaiian/Pacific Islander: $54,100

Health Care

SIZING THINGS UP

The health care sector employed 592,160 payroll workers in the Los Angeles Basin in 2019, accounting for 10.9% of total regional employment across all industries.

Ambulatory health care services are a major employer in the region with about 324,000 employees across the two counties. Hospitals add 153,000 workers and nursing and residential care facilities roughly 116,000.

INDUSTRY OUTLOOK

Between 2019 and 2024, employment is projected to grow at a rate of 1.6%, which will create about 9,640 new jobs in Los Angeles Basin over this period.

FUTURE WORKFORCE NEEDS

Overall, **200,510 total job openings will be created in support activities for transportation over the next five years,** of which an estimated 9,640 will be net new jobs and 190,870 will be replacement workers.

Analysis of the skills classifications for total job openings over the next five years reveals that **67.3% of projected openings are for middle-skill occupations,** making this a strong target sector for community college graduates.

TOP UNIQUE MIDDLE-SKILL OCCUPATIONS

Middle-skill occupations projected to have significant job prospects over the next five years in health care include registered nurses, nursing assistants, home health and personal care aides and medical secretaries and administrative assistants.

EXHIBIT 6-15

MIDDLE-SKILL OCCUPATIONS:

SIGNIFICANT JOB PROSPECTS THROUGH 2024

Occupational Group	Annual Openings
Registered Nurses	**3,920**
Home Health and Personal Care Aides	**3,450**
Nursing Assistants	**2,690**
Medical Secretaries and Administrative Assistants	**2,630**
Medical Assistants	**2,620**

EXHIBIT 6-16
SKILLS CLASSIFICATION FOR THE REGION'S HEALTH CARE INDUSTRY OPENINGS, 2019-2024

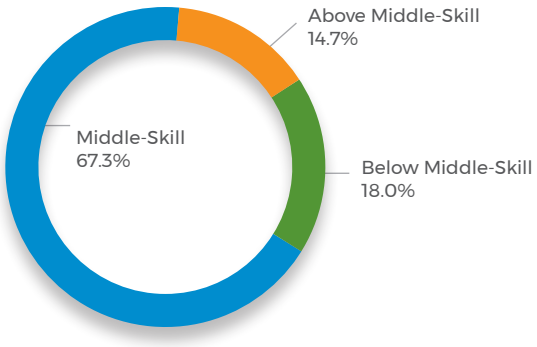


EXHIBIT 6-17
INDUSTRY OUTLOOK

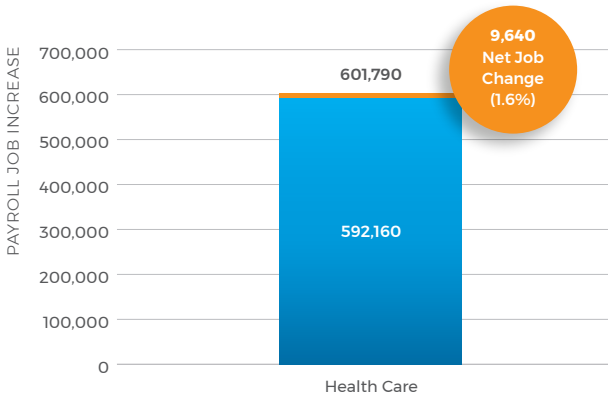


EXHIBIT 6-18
AGE OF WORKERS, 2019

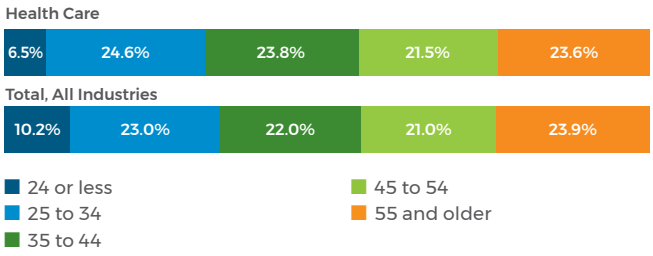


EXHIBIT 6-19
EDUCATIONAL ATTAINMENT OF WORKERS, 2019

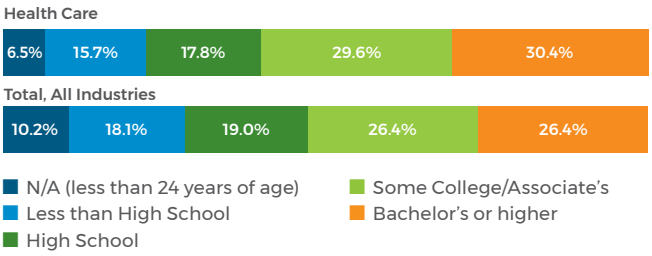


EXHIBIT 6-20
RACE/ETHNICITY OF WORKERS, 2019

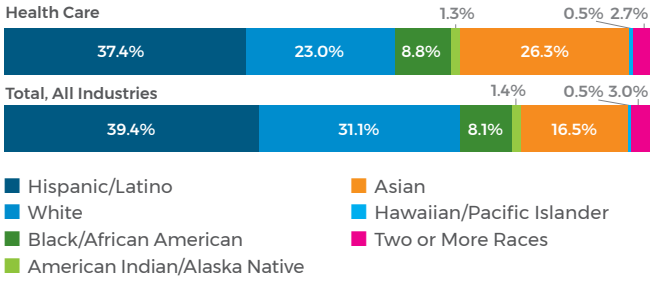
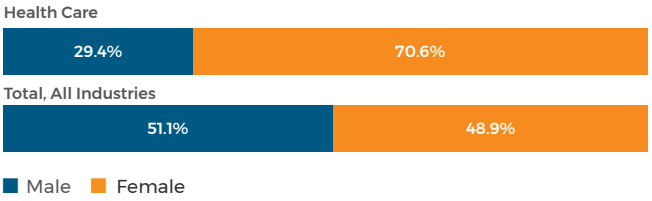


EXHIBIT 6-21
GENDER OF WORKERS, 2019



AVERAGE WAGES BY RACE AND ETHNICITY IN HEALTH CARE
LOS ANGELES BASIN, 2019

- Hispanic: **$45,900**
- White: **$61,300**
- Asian: **$75,400**
- Black: **$54,700**
- American Indian/Alaska Native: **$45,300**
- Hawaiian/Pacific Islander: **$50,500**

Conclusion and Recommendations

As the regional economy recovers from the effects of the COVID-19 pandemic and employment rates begin to rise once again, a strong emphasis must be placed on fostering equitable access to higher-skilled and higher-paying job opportunities. This is a particularly pressing issue given that job loss due to the pandemic disproportionately impacted communities of color.

While the three industries identified in this report have a higher prevalence of white and Asian workers, the analysis of community college student demographics shows that students who are entering these fields are incredibly diverse with much higher representation in terms of race and ethnicity than that of the overall workforce. This is a hopeful sign and may indicate that extensive efforts by the education community and regional employers to encourage students to enter promising middle-skill careers are paying off.

The analysis does, however, reveal disparities in pay for students exiting community college programs, with the widest disparity occurring in the public safety sector. Overall, Black and Hispanic students trail white students in median earnings in most sectors, data which is worthy of additional study. The detailed profiles compiled for each of the 11 targeted occupations also highlight disparities in pay. In fact, in seven of the 11 occupations, white workers earn more than Asian, Black and Hispanic workers. Occupations with this disparity include electricians, construction managers, graphic designers, Licensed Vocational Nurses and dental assistants. This finding is concerning and suggests that work is needed to ensure parity in worker income, especially for community college students who are entering these careers.

There has been a concerted regional effort to improve student employment outcomes in middle-skill jobs that pay well and are in demand, and there is evidence that this work is having an impact. Primarily through the Strong Workforce Program, the California State Legislature in recent years has invested heavily in supporting student pathways that link K-12 schools with community colleges and high-wage, in-demand jobs. In Los Angeles County, alone, $25.3 million was allocated in K-12 funding and another $12.5 million was allocated in community college funding in 2021 as part of this effort. A substantial portion of this funding has been used to strengthen partnerships among K-12 schools, community colleges, employers and other workforce development stakeholders. Funding also has been directed toward building career awareness among students starting at a young age, strengthening guidance counseling for students at all levels, and providing services that are responsive to student needs and address barriers, and that can help propel students into promising careers.

These efforts collectively are geared toward improving student access to middle-skill job opportunities. The 11 occupations highlighted in this report can serve as guideposts for outreach and engagement efforts at the local and regional levels aimed at helping students enter stable and rewarding jobs in industries with a strong positive outlook. These 11 occupations also represent areas that may deserve renewed attention by the Regional Directors of Employer Engagement, who serve as liaisons between the region's 28 community colleges and business and industry partners.

Throughout this report, we have seen that while the Los Angeles Basin has an extremely diverse employment base, certain demographics are concentrated in different occupations and industries – and these concentrations often divide races and ethnicities by skill level.

Buy-in from employers is a critical component of this work, which is why the continued engagement that connects businesses with K-12 schools and community colleges is an important step toward improving representation by people of color in these industries.

By increasing awareness of disparities in the workforce in the areas of race/ethnicity and worker pay, we can begin to change the composition of the workforce in sectors that stand to benefit from increased diversity.

RECOMMENDATIONS

Increased Engagement, Guidance and Mentorship Targeting the Three Industries and 11 Occupations

Extensive work has been underway in recent years in the LA Basin to guide students into strong middle-skill career pathways. The industries and occupations highlighted in this report can serve as a focal point for those efforts to improve equitable access to in-demand jobs that offer a secure and stable livelihood.

Much groundwork has been laid in this area but expanded mentorship and guidance programs at the middle and high school level may be warranted with a focus on these pathways. The region has developed extensive partnerships among K-12 districts, community colleges and employers that can be leveraged to support students as they advance into these careers. The three industries and 11 occupations also are a promising area for dislocated workers who are looking to retrain and enter a new field in the wake of the pandemic.

Increased Outreach and Raised Awareness with Businesses and Industry

Alongside this must come wider-reaching campaigns for awareness and outreach to connect workers with the requisite programs to target the region's middle-skill, well-paying opportunities. It is important that businesses themselves play a role in connecting with community colleges and partner on programs to reach out to communities and share their employment opportunities.

Broadband Internet for All

Many thousands of people of color in the LA Basin are unconnected or under-connected to high-speed internet service, which is a fundamental tool for remote education including via the community college system. Eliminating the digital divide is a critical factor in student and job-seeker pathways and success. Supporting increased access, such as via the LA Digital Equity Action League (LADEAL.org) will advance access to well-paying occupations for all.

Investments in Pathways and Partnerships with Employers that Promote Diversity

Community colleges can work with employers to build direct on-ramps into work-based learning, paid internships and employment opportunities for the students. There are many regional stakeholders in education and industry who have been working to strengthen outreach and awareness as well as expand partnerships. This work is valuable and transformative, and it is imperative that it continue.

Through Strong Workforce Program funding, of which CCW is also a recipient, work in this area has been undertaken by Regional Directors for Employer Engagement who serve as liaisons between industry employers and the community colleges as well as K-12 Pathway Coordinators who support pathway development at the school district level and K14 Pathway Coordinators who are housed at local community colleges districts and facilitate collaboration between K-12 schools and the community colleges.

CCW's Regional Program Advisories foster additional relationships between faculty and employers, and CCW's student-focused programs facilitate engagement directly between employers and students to foster introductions and educate students about the latest skills sought by employers, to inform student coursework choices.

Improved Tracking of Student Employment Outcomes

The California Community Colleges Chancellor's Office LaunchBoard, the statewide data system for tracking progress, success, employment and earnings outcomes for community college students, is one of the best dashboards of its kind in the nation. Despite its strengths, opportunities exist to improve the level of detail within the data (without compromising student privacy) as well as the timeliness with which this data is collected, cleaned, and made available to the public. For example, this dashboard provides earnings data that can be disaggregated by many variables – age, gender and race/ethnicity, but cannot disaggregate this earnings data by which occupation community college students work in after exiting. While many other analyses are sure to make the wish list (e.g. which employers hire community college students most frequently), this single addition would provide deeper insights as to why student earnings inequities exist across sectors, race/ethnic groups, and gender to name a few.

Join with CCW to Advance Progress

The Center for a Competitive Workforce is dedicated to addressing these inequities in a multi-pronged approach, investing directly in students, community college faculty and employers in the LA region. First, CCW utilizes data and analysis in its reports as the foundation of all programming and advocacy. Then, CCW increases awareness of in-demand occupations, showcasing diverse and inspirational career stories, and works directly with students through webinars, company tours and provides a free, regional Workforce and Education Partner Jobs Portal.

CCW develops and promotes work-based learning opportunities and relationships, so that thousands of students can explore careers, apply their education and training, understand employer expectations and contextual mixed learning, receive professional mentoring and gain on-the-job experience (e.g. internships and apprenticeships). This also encourages employers to co-invest in the job and career readiness of students. CCW strives to develop partnerships with non-profits and other community organizations to provide additional tools often required for success in career pathways, particularly for students who face barriers such as food insecurity or access to high-speed internet.

In summary, CCW works to institutionalize regular engagement of local community colleges and employers from high-growth industry sectors with projected growth of middle skill jobs. It is through these partnerships and real-time feedback loops that colleges can attune their programs, courses and curricula to workforce needs and best prepare students for career success. Through Regional Program Advisories, Industry Councils, and ongoing relationships, faculty and employers develop a direct dialogue. CCW is able to advocate directly with employers for diversity across industries and occupations, and raise awareness not only of the importance of greater equity but the call to action and programs that are fueling solutions.

Employment Numbers & Worker Characteristics

Detailed information has been compiled for eleven key occupations in the target equitable recovery industries. Data from 2019 was used to determine wages and worker characteristics for the charts included with the profiles.

The information on top industries employing these occupations, current and projected employment, wages and demographics can be used by community colleges to tailor existing programs and guide outreach to potential students. The occupational analyses that follow may even inspire new program development or new approaches in attracting students to promising career paths.

Each occupational profile contains:

- **Hourly wages paid in 2019 for workers in Los Angeles and Orange counties compared to the living wage.**
- **The distribution of workers across industry sectors in the Los Angeles Basin.**
- **Metrics for the occupation including the number of current jobs and projected openings.**
- **Worker characteristics, such as educational attainment, age distribution, race and ethnicity, and gender.**
- **Wages by race and ethnicity**

HIGHLIGHTED OCCUPATIONS

Secretaries and Administrative Assistants
(SOC 43-6014)

Licensed Vocational and Licensed Practical Nurses
(SOC 29-2061)

Dental Assistants
(SOC 31-9091)

Electricians
(SOC 47-2111)

Executive Secretaries & Administrative Assistants
(SOC 43-6111)

Paralegals and Legal Assistants
(SOC 23-2011)

Graphic Designers
(SOC 27-1024)

Construction Assistants
(SOC 11-9021)

Respiratory Therapists
(SOC 29-1126)

Construction and Building Inspectors
(SOC 47-4011)

Solar Photovoltaic Inspectors
(SOC 47-2231)

Secretaries and Administrative Assistants

(SOC 43-6014)

Perform routine administrative functions such as drafting correspondence, scheduling appointments, organizing and maintaining paper and electronic files, or providing information to callers.

5-YEAR PROJECTION

35,000 **Total Projected Openings 2024 (5-year)**
3,400 Net Job Change
31,600 5-Year Replacements

77,300 **Industry Jobs in LA Basin**

2019 HOURLY WAGES IN LA BASIN

- Entry-Level Hourly Wage
- Living Wage (1 adult*) Los Angeles
- Living Wage (1 adult*) Orange County

**MIT Living Wage Calculator*

2019 INDUSTRY DISTRIBUTION

28,500

Secretaries and Administrative Assistants employed in target industries in the LA Basin

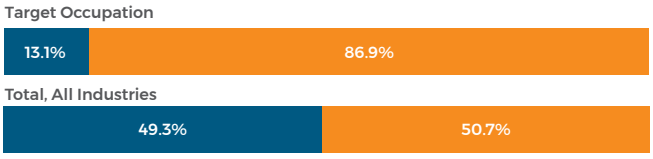
The three industry subsectors with the highest number of employees in this occupation in the LA Basin are:

1. Social Assistance Services
2. Educational Services
3. Administrative and Support Services

The top employers by job postings in the Los Angeles Basin for this occupation in 2019 were:

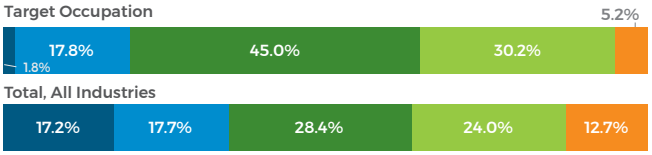
1. University of California
2. Anthem Blue Cross
3. UCLA Health
4. Marriott International Incorporated
5. California State University

GENDER, 2019



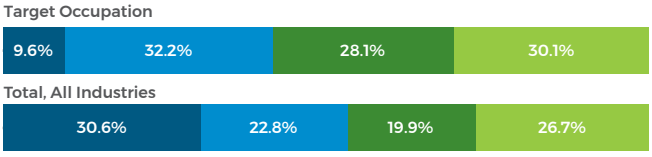
- Male
- Female

EDUCATIONAL ATTAINMENT, 2019



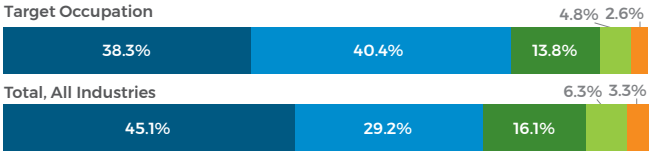
- Less than High School
- High School
- Associate/Some College
- Bachelor's
- Master's & Higher

AGE DISTRIBUTION, 2019



- < 24
- 25 to 39
- 40 to 54
- 55+

RACE/ETHNICITY, 2019



- Hispanic
- White
- Asian
- Black
- Other

AVERAGE WAGE ESTIMATES BY RACE/ETHNICITY

Hispanic: **$33,500** Asian: **$33,500** White: **$33,000** Black: **$38,200**

Licensed Practical & Vocational Nurses

(SOC 29-2061)

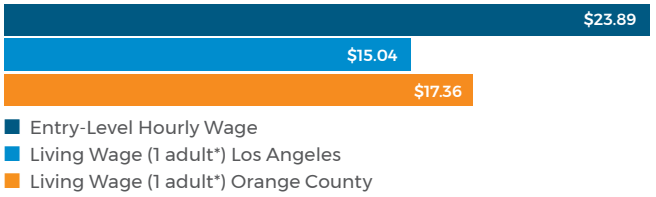
Care for ill, injured, or convalescing patients or persons with disabilities in hospitals, nursing homes, clinics, private homes, group homes, and similar institutions. May work under the supervision of a registered nurse. Licensing required.

5-YEAR PROJECTION

14,900 **Total Projected Openings 2024 (5-year)**
1,200 Net Job Change
13,700 5-Year Replacements

29,200 **Industry Jobs in LA Basin**

2019 HOURLY WAGES IN LA BASIN



**MIT Living Wage Calculator*

2019 INDUSTRY DISTRIBUTION

20,800

Licensed Practical and Licensed Vocational Nurses employed in target industries in the LA Basin

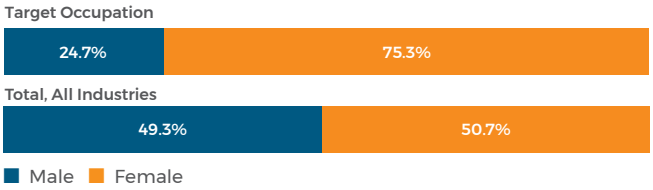
The three industry subsectors with the highest number of employees in this occupation in the LA Basin are:

1. Nursing and Residential Care Facilities
2. Ambulatory Health Services
3. Hospitals

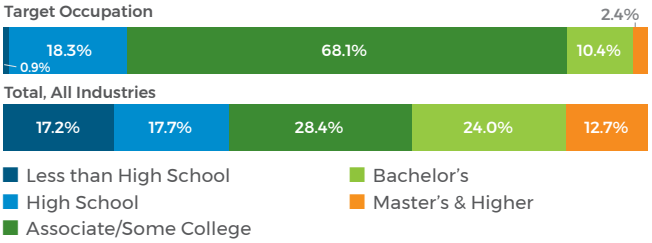
The top employers by job postings in the Los Angeles Basin for this occupation in 2019 were:

1. Kaiser Permanente
2. Davita Incorporated
3. Sunrise Senior Living, Inc
4. Premier Healthcare Services
5. University of California

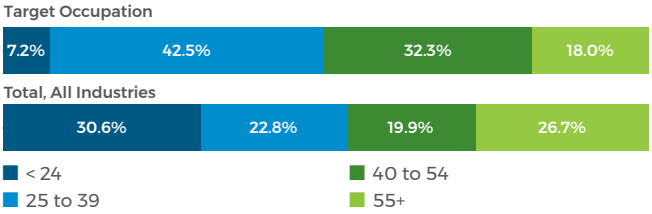
GENDER, 2019



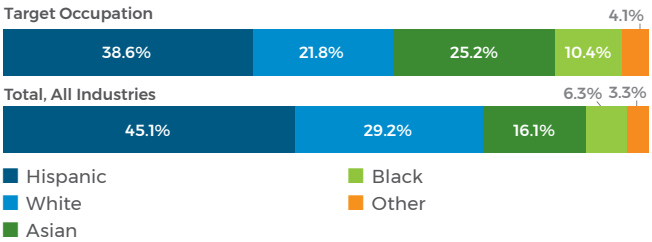
EDUCATIONAL ATTAINMENT, 2019



AGE DISTRIBUTION, 2019



RACE/ETHNICITY, 2019



AVERAGE WAGE ESTIMATES BY RACE/ETHNICITY

Hispanic: **$41,300** Asian: **$45,000** White: **$47,000** Black: **$39,900**

Dental Assistants

(SOC 31-9091)

Perform limited clinical duties under the direction of a dentist. Clinical duties may include equipment preparation and sterilization, preparing patients for treatment, assisting the dentist during treatment, and providing patients with instructions for oral healthcare procedures. May perform administrative duties such as scheduling appointments, maintaining medical records, billing, and coding information for insurance purposes.

5-YEAR PROJECTION

6,200 Total Projected Openings 2024 (5-year)
300 Net Job Change
5,900 5-Year Replacements

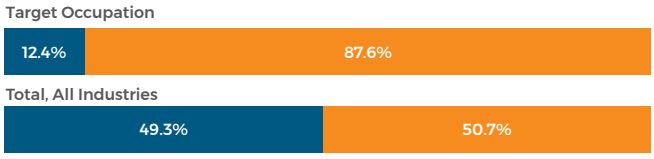
14,800 Industry Jobs in LA Basin

2019 HOURLY WAGES IN LA BASIN

- Entry-Level Hourly Wage
- Living Wage (1 adult*) Los Angeles
- Living Wage (1 adult*) Orange County

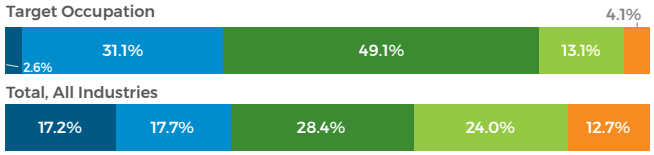
**MIT Living Wage Calculator*

GENDER, 2019



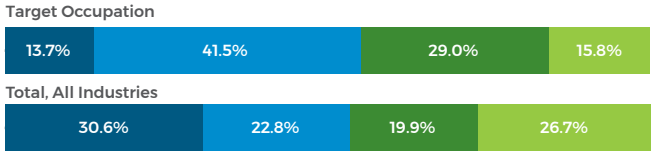
Male Female

EDUCATIONAL ATTAINMENT, 2019



- Less than High School
- High School
- Associate/Some College
- Bachelor's
- Master's & Higher

AGE DISTRIBUTION, 2019



- < 24
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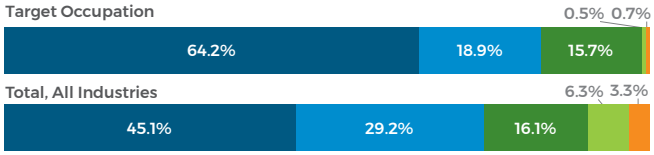
RACE/ETHNICITY, 2019



- Hispanic
- White
- Asian
- Black
- Other

2019 INDUSTRY DISTRIBUTION

14,500

Dental Assistants employed in target industries in the LA Basin

The three industry subsectors with the highest number of employees in this occupation in the LA Basin are:

1. Ambulatory Health Care Services
2. Public Administration
3. Hospitals

The top employers by job postings in the Los Angeles Basin for this occupation in 2019 were:

1. Pacific Dental Services Incorporated
2. Western Dental & Orthodontics
3. West Coast Dental
4. Smile Brands

AVERAGE WAGE ESTIMATES BY RACE/ETHNICITY

Hispanic: **$31,600** Asian: **$28,200** White: **$35,200** Black: **$25,500**

Electricians

(SOC 47-2111)

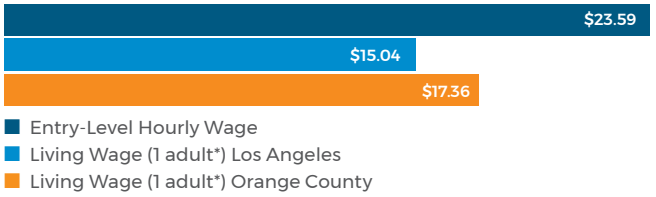
Install, maintain, and repair electrical wiring, equipment, and fixtures. Ensure that work is in accordance with relevant codes. May install or service street lights, intercom systems, or electrical control systems.

5-YEAR PROJECTION

15,800 **Total Projected Openings 2024 (5-year)**
1,100 Net Job Change
14,600 5-Year Replacements

36,900 **Industry Jobs in LA Basin**

2019 HOURLY WAGES IN LA BASIN



**MIT Living Wage Calculator*

2019 INDUSTRY DISTRIBUTION

18,200

Electricians employed in target industries in the LA Basin

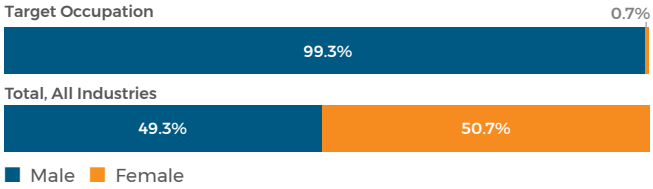
The three industry subsectors with the highest number of employees in this occupation in the LA Basin are:

1. Specialty Trade Contractors
2. Motion Picture and Sound Recording Industries
3. Construction of Buildings

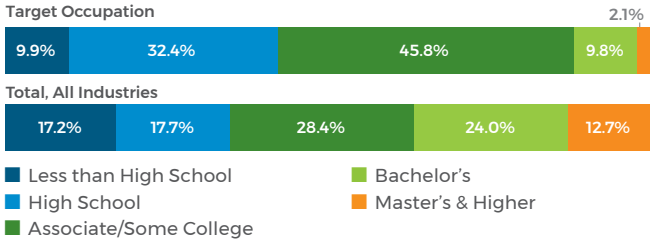
The top employers by job postings in the Los Angeles Basin for this occupation in 2019 were:

1. Edison International
2. University of California
3. Outsource
4. Northrop Grumman
5. Wachter Incorporated

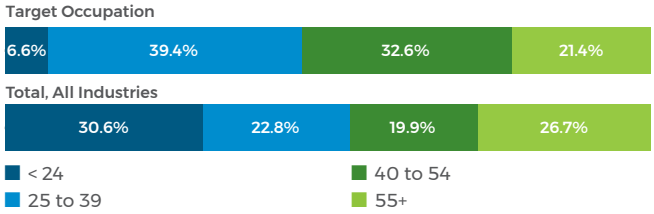
GENDER, 2019



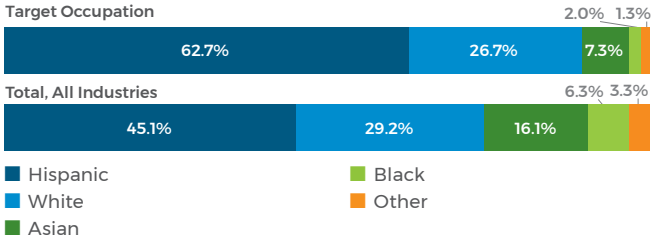
EDUCATIONAL ATTAINMENT, 2019



AGE DISTRIBUTION, 2019



RACE/ETHNICITY, 2019



AVERAGE WAGE ESTIMATES BY RACE/ETHNICITY

Hispanic: **$44,800** Asian: **$38,600** White: **$46,000** Black: **$35,200**

Executive Secretaries and Administrative Assistants

(SOC 43-6011)

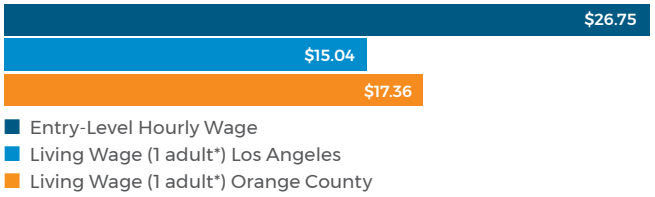
Provide high-level administrative support by conducting research, preparing statistical reports, and handling information requests, as well as performing routine administrative functions such as preparing correspondence, receiving visitors, arranging conference calls, and scheduling meetings. May also train and supervise lower-level clerical staff.

5-YEAR PROJECTION

10,400 **Total Projected Openings 2024 (5-year)**
1,300 Net Job Change
9,100 5-Year Replacements

22,200 **Industry Jobs in LA Basin**

2019 HOURLY WAGES IN LA BASIN



**MIT Living Wage Calculator*

2019 INDUSTRY DISTRIBUTION

9,800

Executive Secretaries and Executive Administrative Assistants employed in target industries in the LA Basin

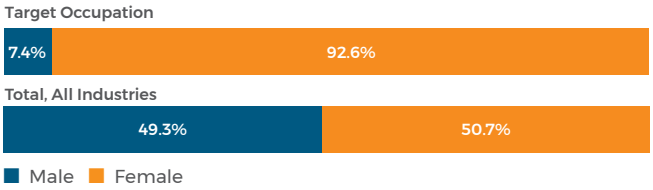
The three industry subsectors with the highest number of employees in this occupation in the LA Basin are:

1. Educational Services
2. Management of Companies and Enterprises
3. Securities, Commodity Contracts and Other Financial Investments and Related Activities

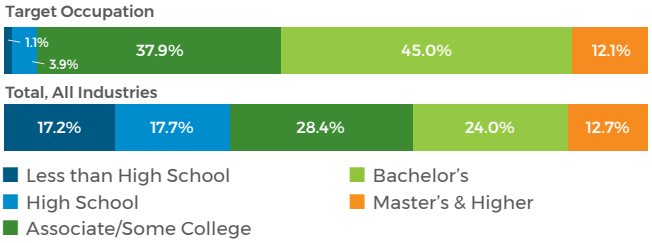
The top employers by job postings in the Los Angeles Basin for this occupation in 2019 were:

1. University of California
2. Disney
3. Viacom
4. Time Warner
5. Anthem Blue Cross

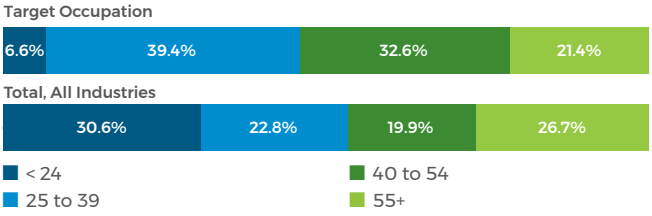
GENDER, 2019



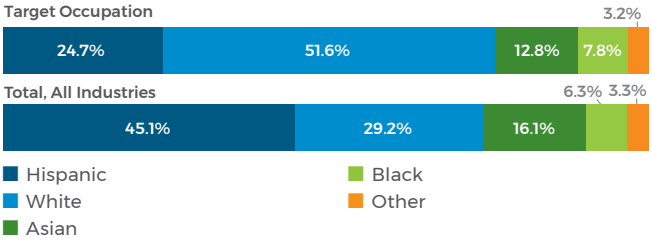
EDUCATIONAL ATTAINMENT, 2019



AGE DISTRIBUTION, 2019



RACE/ETHNICITY, 2019



AVERAGE WAGE ESTIMATES BY RACE/ETHNICITY

Hispanic: **$54,600** Asian: **$53,400** White: **$56,100** Black: **$44,500**

Paralegals and Legal Assistants

(SOC 23-2011)

Assist lawyers by investigating facts, preparing legal documents, or researching legal precedent. Conduct research to support a legal proceeding, to formulate a defense, or to initiate legal action.

5-YEAR PROJECTION

6,300 **Total Projected Openings 2024 (5-year)**
1,700 Net Job Change
4,600 5-Year Replacements

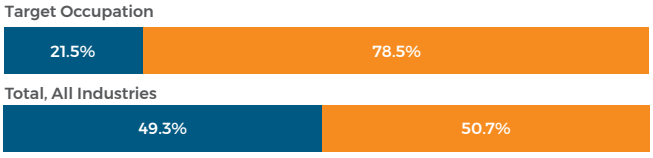
11,800 **Industry Jobs in LA Basin**

2019 HOURLY WAGES IN LA BASIN

- Entry-Level Hourly Wage
- Living Wage (1 adult*) Los Angeles
- Living Wage (1 adult*) Orange County

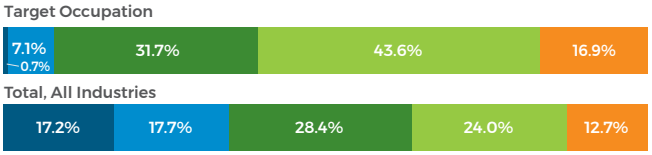
**MIT Living Wage Calculator*

GENDER, 2019



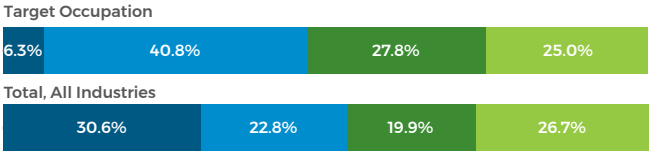
Male Female

EDUCATIONAL ATTAINMENT, 2019



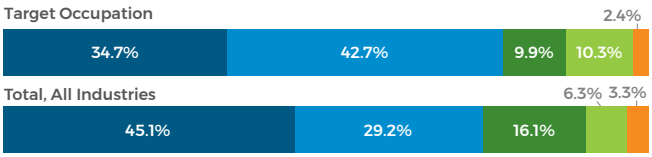
- Less than High School
- High School
- Associate/Some College
- Bachelor's
- Master's & Higher

AGE DISTRIBUTION, 2019



- < 24
- 25 to 39
- 40 to 54
- 55+

RACE/ETHNICITY, 2019



- Hispanic
- White
- Asian
- Black
- Other

2019 INDUSTRY DISTRIBUTION

9,100

Paralegals and legal assistants employed in target industries in the LA Basin

The three industry subsectors with the highest number of employees in this occupation in the LA Basin are:

1. Public Administration
2. Management of Companies and Enterprises
3. Administrative and Support Services

The top employers by job postings in the Los Angeles Basin for this occupation in 2019 were:

1. APC
2. Disney
3. APLC Incorporated
4. Bank of America
5. Allstate

AVERAGE WAGE ESTIMATES BY RACE/ETHNICITY

Hispanic: **$52,700** Asian: **$71,900** White: **$48,800** Black: **$40,200**

Graphic Designers

(SOC 27-1024)

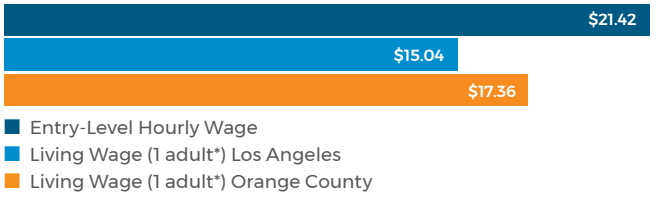
Design or create graphics to meet specific commercial or promotional needs, such as packaging, displays, or logos. May use a variety of mediums to achieve artistic or decorative effects.

5-YEAR PROJECTION

4,200 **Total Projected Openings 2024 (5-year)**
500 Net Job Change
3,700 5-Year Replacements

10,600 **Industry Jobs in LA Basin**

2019 HOURLY WAGES IN LA BASIN



**MIT Living Wage Calculator*

2019 INDUSTRY DISTRIBUTION

4,400

Graphic Designers employed in target industries in the LA Basin

The three industry subsectors with the highest number of employees in this occupation in the LA Basin are:

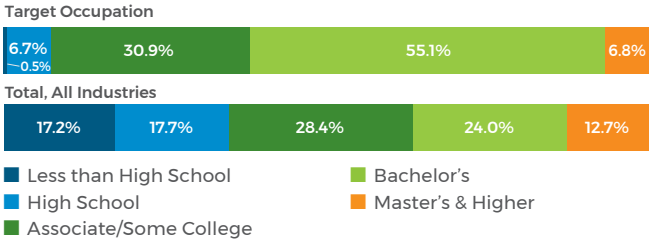
1. Printing and Related Support Activities
2. Motion Picture and Sound Recording Industries
3. Merchant Wholesalers, Durable Goods

The top employers by job postings in the Los Angeles Basin for this occupation in 2019 were:

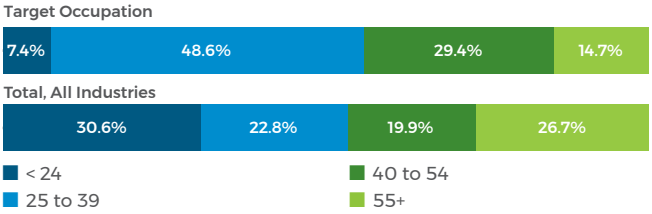
1. Syndicatebleu
2. Estee Lauder Company
3. Raytheon
4. Disney
5. Kalo

GENDER, 2019

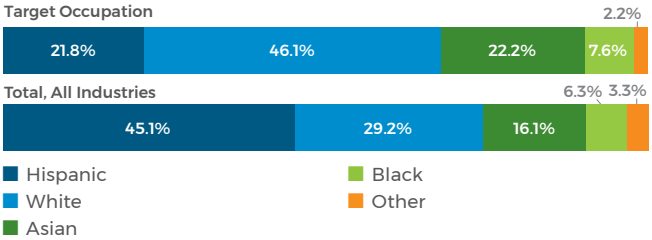
EDUCATIONAL ATTAINMENT, 2019



AGE DISTRIBUTION, 2019



RACE/ETHNICITY, 2019



AVERAGE WAGE ESTIMATES BY RACE/ETHNICITY

Hispanic: **$44,900** Asian: **$40,300** White: **$48,700** Black: **$29,900**

Construction Managers

(SOC 11-9021)

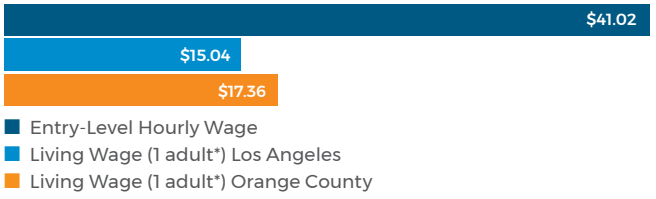
Plan, direct, or coordinate, usually through subordinate supervisory personnel, activities concerned with the construction and maintenance of structures, facilities, and systems. Participate in the conceptual development of a construction project and oversee its organization, scheduling, budgeting, and implementation. Includes managers in specialized construction fields, such as carpentry or plumbing.

5-YEAR PROJECTION

4,800 **Total Projected Openings 2024 (5-year)**
700 Net Job Change
4,100 5-Year Replacements

16,700 **Industry Jobs in LA Basin**

2019 HOURLY WAGES IN LA BASIN



**MIT Living Wage Calculator*

2019 INDUSTRY DISTRIBUTION

14,800

Construction managers employed in target industries in the LA Basin

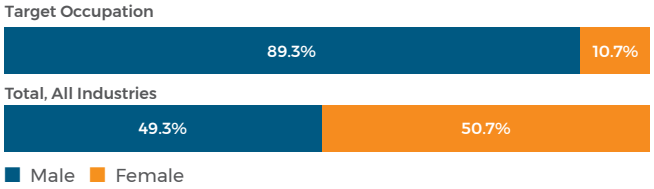
The three industry subsectors with the highest number of employees in this occupation in the LA Basin are:

1. Construction of Buildings
2. Specialty Trade Contractors
3. Heavy and Civil Engineering Construction

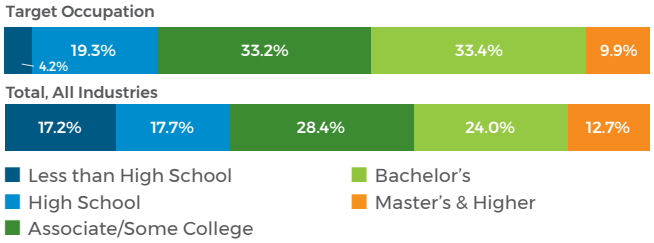
The top employers by job postings in the Los Angeles Basin for this occupation in 2019 were:

1. CBRE
2. Shawmut Design Construction
3. Jones Lang Lasalle Incorporated
4. Vanir Construction Management
5. Gulfstream Strategic Placements

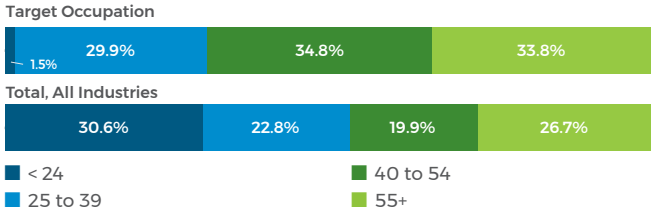
GENDER, 2019



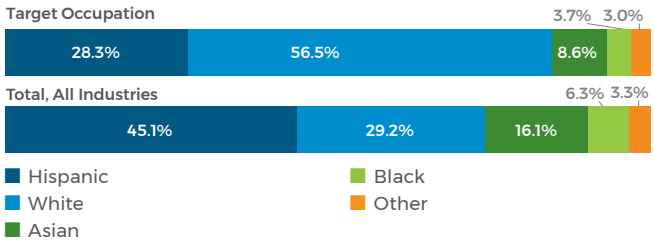
EDUCATIONAL ATTAINMENT, 2019



AGE DISTRIBUTION, 2019



RACE/ETHNICITY, 2019



AVERAGE WAGE ESTIMATES BY RACE/ETHNICITY

Hispanic: **$81,200** Asian: **$56,800** White: **$87,000** Black: **$47,400**

Respiratory Therapists

(SOC 29-1126)

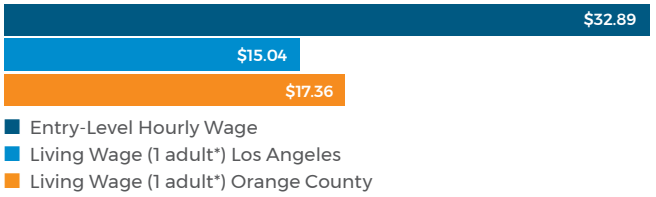
Assess, treat, and care for patients with breathing disorders. Assume primary responsibility for all respiratory care modalities, including the supervision of respiratory therapy technicians. Initiate and conduct therapeutic procedures; maintain patient records; and select, assemble, check, and operate equipment.

5-YEAR PROJECTION

900 **Total Projected Openings 2024 (5-year)**
100 Net Job Change
800 5-Year Replacements

4,500 **Industry Jobs in LA Basin**

2019 HOURLY WAGES IN LA BASIN



**MIT Living Wage Calculator*

2019 INDUSTRY DISTRIBUTION

4,300

Respiratory Therapists employed in target industries in the LA Basin

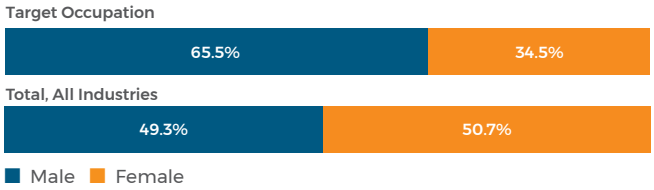
The three industry subsectors with the highest number of employees in this occupation in the LA Basin are:

1. Hospitals
2. Nursing and Residential Care Facilities
3. Ambulatory Health Care Services

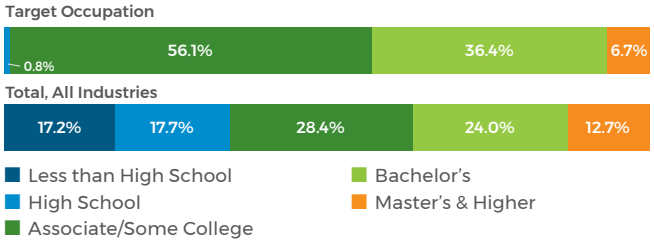
The top employers by job postings in the Los Angeles Basin for this occupation in 2019 were:

1. Prime Healthcare Services
2. Kindred Healthcare Incorporated
3. Memorialcare Health System
4. Providence Health and Services
5. KPG Healthcare

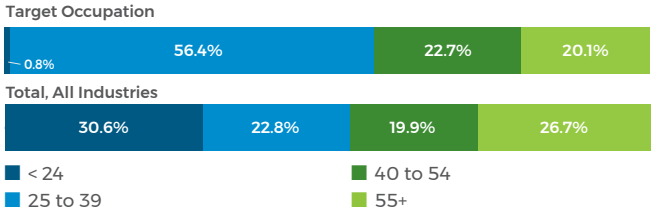
GENDER, 2019



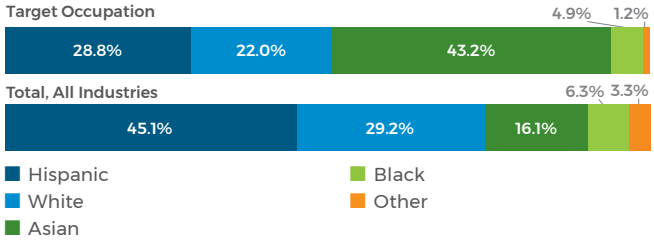
EDUCATIONAL ATTAINMENT, 2019



AGE DISTRIBUTION, 2019



RACE/ETHNICITY, 2019



AVERAGE WAGE ESTIMATES BY RACE/ETHNICITY

Hispanic: **$56,700** Asian: **$56,600** White: **$55,900** Black: **$57,000**

Construction and Building Inspectors

(SOC 47-4011)

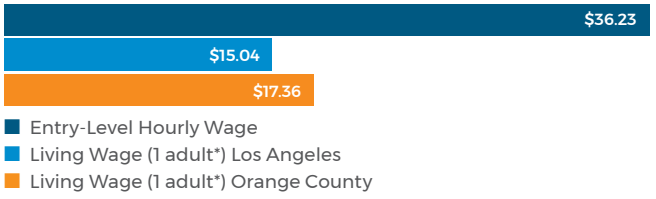
Inspect structures using engineering skills to determine structural soundness and compliance with specifications, building codes, and other regulations. Inspections may be general in nature or may be limited to a specific area, such as electrical systems or plumbing.

5-YEAR PROJECTION

1,600 Total Projected Openings 2024 (5-year)
300 Net Job Change
1,300 5-Year Replacements

3,100 Industry Jobs in LA Basin

2019 HOURLY WAGES IN LA BASIN



**MIT Living Wage Calculator*

2019 INDUSTRY DISTRIBUTION

1,900

Construction and Building Inspectors employed in target industries in the LA Basin

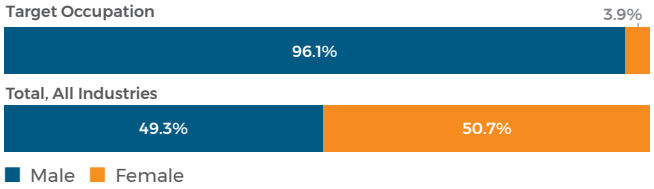
The three industry subsectors with the highest number of employees in this occupation in the LA Basin are:

1. Utilities
2. Administrative and Support Services
3. Public Administration

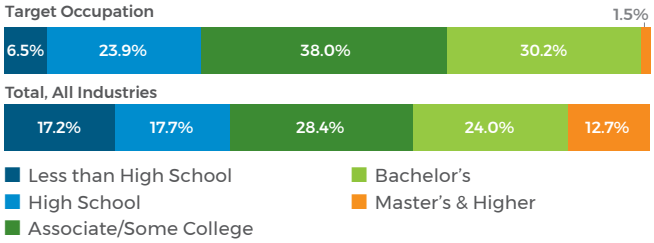
The top employers by job postings in the Los Angeles Basin for this occupation in 2019 were:

1. VCA Code
2. Pep Boys
3. Charles Abbott Associates Incorporated
4. Bureau Veritas
5. NV5

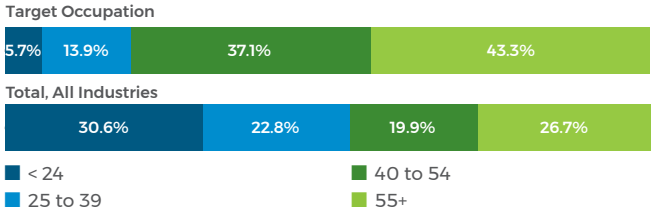
GENDER, 2019



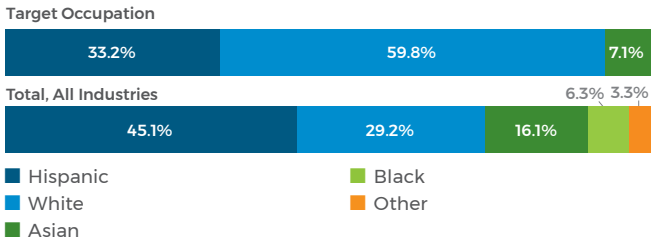
EDUCATIONAL ATTAINMENT, 2019



AGE DISTRIBUTION, 2019



RACE/ETHNICITY, 2019



AVERAGE WAGE ESTIMATES BY RACE/ETHNICITY

Hispanic: **$91,500** Asian: **$106,300** White: **$88,900** Black: **$85,000**

Solar Photovoltaic Installers

(SOC 47-2231)

Assemble, install, or maintain solar photovoltaic (PV) systems on roofs or other structures in compliance with site assessment and schematics. May include measuring, cutting, assembling, and bolting structural framing and solar modules. May perform minor electrical work such as current checks.

5-YEAR PROJECTION

1,200 Total Projected Openings 2024 (5-year)
100 Net Job Change
1,100 5-Year Replacements

2,500 Industry Jobs in LA Basin

2019 HOURLY WAGES IN LA BASIN

- Entry-Level Hourly Wage
- Living Wage (1 adult*) Los Angeles
- Living Wage (1 adult*) Orange County

**MIT Living Wage Calculator*

2019 INDUSTRY DISTRIBUTION

900

Solar Photovoltaic Installers employed in target industries in the LA Basin

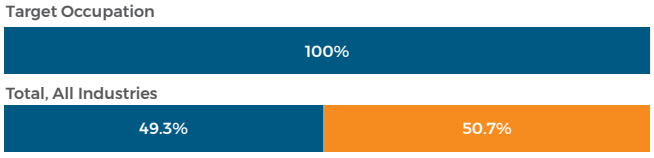
The three industry subsectors with the highest number of employees in this occupation in the LA Basin are:

1. Utilities
2. Administrative and Support Services
3. Public Administration

The top employers by job postings in the Los Angeles Basin for this occupation in 2019 were:

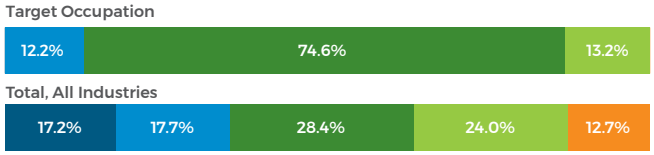
1. Sunrun
2. Brycon Construction
3. Wavsys
4. Maxgen Energy Services
5. Vivint Solar

GENDER, 2019



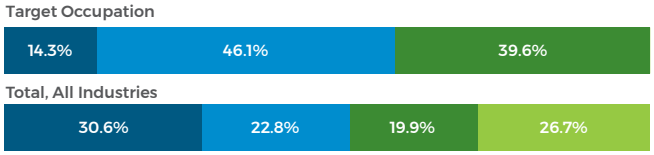
Male Female

EDUCATIONAL ATTAINMENT, 2019



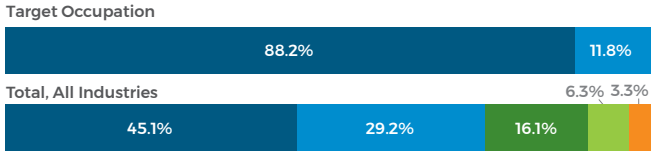
- Less than High School
- High School
- Associate/Some College
- Bachelor's
- Master's & Higher

AGE DISTRIBUTION, 2019



- < 24
- 25 to 39
- 40 to 54
- 55+

RACE/ETHNICITY, 2019



- Hispanic
- White
- Asian
- Black
- Other

AVERAGE WAGE ESTIMATES BY RACE/ETHNICITY

Hispanic: **$45,000** Asian: **$43,000** White: **$47,000** Black: **$40,500**

Appendix

EXHIBIT A-1: GENDER OF CE STUDENTS IN THE LA BASIN, 2018-19

Sector	Female	Male	Multiple Values Reported	Unknown	All Masked Values
Advanced Manufacturing	12%	86%			1%
Advanced Transportation and Logistics	14%	85%			1%
Agriculture, Water, and Environmental Technologies	62%	36%			1%
Business and Entrepreneurship	49%	50%	0%	1%	
Education and Human Development	82%	17%			0%
Energy, Construction, and Utilities	15%	84%			1%
Global Trade	52%	47%			1%
Health	65%	34%	0%		1%
Information Communication Technologies – Digital Media	45%	54%			1%
Life Sciences – Biotechnology	48%	51%			1%
Public Safety	31%	68%	0%	1%	
Retail, Hospital & Tourism	63%	36%			1%
ALL CE Programs	**49%**	**50%**	**0%**		**1%**

EXHIBIT A-2: AGE GROUP OF CE STUDENTS IN THE LA BASIN, 2018-19

Sector	19 or less	20 to 24	25 to 29	30 to 34	35 to 39	40 to 54	55 and older	All Masked Values
Advanced Manufacturing	13%	28%	22%	13%	8%	11%	5%	
Advanced Transportation and Logistics	24%	36%	16%	7%	5%	8%	3%	
Agriculture, Water, and Environmental Technologies	15%	38%	19%	8%	5%	8%	8%	
Business and Entrepreneurship	18%	36%	17%	10%	6%	10%	4%	
Education and Human Development	21%	34%	15%	9%	7%	9%	5%	
Energy, Construction, and Utilities	13%	28%	22%	14%	8%	12%	4%	
Global Trade	10%	33%	19%	12%	8%	14%	4%	
Health	13%	33%	19%	10%	6%	9%	10%	
Information Communication Technologies – Digital Media	19%	35%	16%	9%	6%	10%	6%	
Life Sciences – Biotechnology	18%	39%	20%	7%		9%		4%
Public Safety	14%	20%	13%	11%	11%	25%	6%	
Retail, Hospital & Tourism	16%	32%	16%	9%	6%	11%	11%	
ALL CE Programs	**17%**	**31%**	**17%**	**10%**	**7%**	**12%**	**7%**	

EXHIBIT A-3: STUDENT EMPLOYMENT OUTCOMES BY SECTOR

Sector	Median Annual Earnings	Median Change in Earnings (2017-18)	Attained a Living Wage (2017-18)	Students Working in Field of Study (2016-17)
Advanced Manufacturing	$39,270	35%	59%	73%
Advanced Transportation and Logistics	$32,708	50%	49%	69%
Agriculture, Water, and Environmental Technologies	$27,492	31%	38%	82%
Business and Entrepreneurship	$34,460	28%	52%	73%
Education and Human Development	$26,128	28%	34%	73%
Energy, Construction, and Utilities	$49,044	47%	69%	78%
Global Trade	$32,732	49%	50%	57%
Health	$29,394	41%	42%	79%
Information Communication Technologies – Digital Media	$28,764	26%	42%	62%
Life Sciences – Biotechnology	$40,558	37%	60%	71%
Public Safety	$46,868	21%	62%	67%
Retail, Hospital & Tourism	$27,648	28%	39%	70%
ALL CE Programs	**$33,048**	**29%**	**50%**	**71%**

EXHIBIT A-4: THREE-YEAR AVERAGE NUMBER OF AWARDS ISSUED BY REGIONAL COMMUNITY COLLEGES (ACADEMIC YEARS 2017-18, 2018-19, AND 2019-20)

Program - TOP/College	2017-18	2018-19	2019-20	3-Yr Average (2017-20)
051400 - Office Technology/Office Computer Applications	**937**	**906**	**990**	**944**
Cerritos	11	14	10	12
Citrus	16	23	3	14
Coastline	21	12	9	14
Compton	2	-	-	1
Cypress	10	17	16	14
East LA	110	54	34	66
El Camino	-	2	2	1
Glendale	66	44	25	45
Golden West	3	8	1	4
Irvine	12	18	16	15
LA City	4	1	6	4
LA Harbor	7	5	11	8
LA Mission	35	23	12	23
LA Pierce	35	54	44	44
LA Southwest	2	2	-	1
LA Trade	39	31	22	31
LA Valley	91	119	107	106
Long Beach	27	33	57	39

EXHIBIT A-4: STUDENT EMPLOYMENT OUTCOMES BY SECTOR, CONTINUED

051400 - Office Technology/Office Computer Applications	937	906	990	944
Mt. San Antonio	34	75	228	112
North Orange Adult	97	70	33	67
Pasadena	11	38	13	21
Saddleback	9	11	8	9
Santa Ana	153	138	223	171
Santa Monica	3	7	12	7
Santiago Canyon	137	106	97	113
West LA	2	1	1	1
061400 - Digital Media	**32**	**42**	**30**	**35**
Coastline	-	3	-	1
Glendale	-	-	1	0
Golden West	9	10	10	10
Irvine	15	9	1	8
LA Mission	-	1	4	2
LA Trade	7	19	11	12
Long Beach	1	-	-	0
Rio Hondo	-	-	2	1
Santa Ana	-	-	1	0
061410 - Multimedia	**34**	**42**	**32**	**36**
Cypress	1	-	1	1
East LA	-	-	2	1
LA Mission	12	21	18	17
Long Beach	1	-	-	0
Orange Coast	-	1	2	1
Pasadena	5	6	1	4
Santa Monica	5	5	5	5
Santiago Canyon	10	9	3	7
061460 - Computer Graphics and Digital Imagery	**76**	**94**	**59**	**76**
Citrus	23	13	12	16
Coastline	2	5	1	3
Cypress	1	7	5	4
East LA	-	16	1	6
Fullerton	1	2	1	1
North Orange Adult	4	9	3	5
Orange Coast	35	38	21	31
Saddleback	7	4	4	5
Santa Ana	3	-	11	5
094610 - Energy Systems Technology	**59**	**33**	**40**	**44**
Golden West	6	1	-	2
LA Trade	30	11	18	20
LA Valley	1	-	-	0

EXHIBIT A-4: STUDENT EMPLOYMENT OUTCOMES BY SECTOR, CONTINUED

094610 - Energy Systems Technology	**59**	**33**	**40**	**44**
Mt. San Antonio	7	4	8	6
Pasadena	4	3	5	4
Rio Hondo	7	4	7	6
Santa Monica	4	10	2	5
095220 - Electrical	**199**	**232**	**190**	**207**
Irvine	7	15	8	10
LA Trade	163	132	149	148
North Orange Adult	22	30	2	18
Orange Coast	6	4	-	3
Santiago Canyon	1	51	31	28
095700 - Civil and Construction Management Technology	**19**	**18**	**36**	**24**
East LA	-	-	1	0
Fullerton	11	12	11	11
LA Valley	5	6	13	8
Mt. San Antonio	3	-	11	5
095720 - Construction Inspection	**32**	**43**	**66**	**47**
Coastline	12	15	11	13
Fullerton	8	11	4	8
Pasadena	9	7	21	12
Saddleback	3	10	15	9
Santiago Canyon	-	-	15	5
103000 - Graphic Art and Design	**161**	**257**	**230**	**216**
Cerritos	10	11	11	11
East LA	10	18	3	10
El Camino	2	-	1	1
Fullerton	14	12	12	13
Glendale	9	6	4	6
Golden West	22	57	32	37
Irvine	-	5	16	7
LA City	5	6	22	11
LA Pierce	15	22	15	17
LA Valley	3	2	5	3
Long Beach	2	1	2	2
Mt. San Antonio	11	15	11	12
Pasadena	7	9	7	8
Rio Hondo	-	30	20	17
Saddleback	15	23	15	18
Santa Ana	1	4	3	3
Santa Monica	26	31	50	36
Santiago Canyon	9	5	1	5

EXHIBIT A-4: STUDENT EMPLOYMENT OUTCOMES BY SECTOR, CONTINUED

121000 - Respiratory Care/Therapy	**161**	**173**	**156**	**163**
Compton	-	2	-	1
East LA	38	45	25	36
El Camino	32	30	33	32
LA Valley	48	50	54	51
Mt. San Antonio	24	19	13	19
Orange Coast	16	12	17	15
Santa Monica	3	15	14	11
123020 - Licensed Vocational Nursing	**208**	**230**	**160**	**199**
Citrus	113	112	46	90
Long Beach	37	69	76	61
Pasadena	19	16	14	16
Rio Hondo	39	33	24	32
124010 - Dental Assistant	**131**	**156**	**124**	**137**
Cerritos	21	34	45	33
Citrus	36	24	4	21
Cypress	20	25	27	24
Orange Coast	32	35	35	34
Pasadena	3	22	1	9
West LA	19	16	12	16
140200 - Paralegal	**416**	**479**	**525**	**473**
Cerritos	58	58	60	59
Coastline	75	58	60	64
Compton	2	2	-	1
East LA	-	-	41	14
El Camino	34	39	31	35
Fullerton	-	39	49	29
Irvine	16	16	32	21
LA City	30	25	34	30
LA Mission	35	35	24	31
LA Southwest	-	1	-	0
LA Trade	13	2	7	7
Mt San Antonio	25	43	42	37
Pasadena	61	69	49	60
Santa Ana	39	62	72	58
West LA	28	30	24	27
Grand Total	**2,465**	**2,705**	**2,638**	**2,603**

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