





GREATER PHOENIX CHAMBER
FOUNDATION

2020 State of the Workforce: A Year on an Economic Roller Coaster

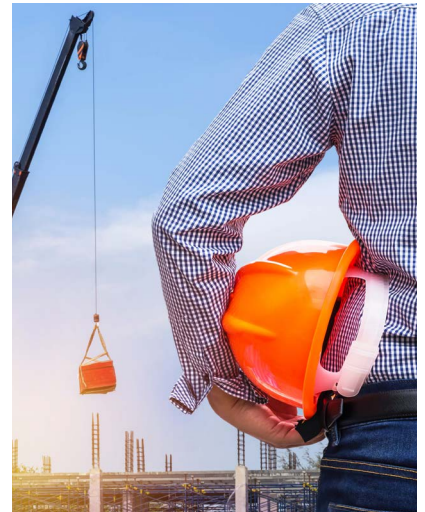


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The Greater Phoenix Chamber Foundation has stepped into a leadership role, convening industry, education, and community leaders from the region’s most critical industry sectors in targeted efforts to develop industry-led solutions.



State of the Workforce

Introduction

This analysis of the Greater Phoenix region's labor market seeks to provide perspective on employment trends in the Valley and profile some of the region's largest and most dynamic industries. It also celebrates the ways in which regional employers pivoted in response to the COVID-19 crisis and contributed to our national efforts to address the pandemic.

While the devastating effects of the global health crisis were deeply felt in the Valley's labor market, the innovation and sense of community that define so much of the region's economic identity rose to the forefront. Businesses continued to relocate to the Valley. Some expanded their presence, while others made plans for growth after the crisis abates.

Employment trends are analyzed per a point prior to the onset of the pandemic. It is assumed here that at some point the global health crisis will end, and when it does, we will begin a return to economic conditions that somewhat approximate pre-pandemic realities. Because of that assumption, we will first dive into the impacts of the COVID-19 pandemic on our industries.



Impact of COVID-19

Overview of the Pandemic

Events related to COVID-19 continue to impact the nation, the state, and the Greater Phoenix region. While some of these impacts on public health and the regional economy are obvious, others may not be fully understood for years.

As of October 31, 2020, the Arizona Department of Health Services reported over 220,000 COVID-19 cases in Arizona, with approximately 144,000 of those in Maricopa County. More than 5,700 deaths in the state in 2020 have been attributed to COVID-19, with 3,450 of those coming from Maricopa County. At its peak in mid-July, more than 300 people were being hospitalized due to this illness every day. Altogether, around 12,500 individuals were hospitalized in Maricopa County with more than 60% older than 65 years.¹

Impacts on the Labor Market

One of the COVID-19-related risks with which civic leaders had to grapple was the very real possibility that the pandemic could swamp the capacity of our hospital system. A series of executive orders from the Governor's Office closed non-essential businesses and urged Arizonans to remain home except for essential activities.

The effects on the region's economy and labor market were significant. Unemployment temporarily soared and the labor force shrank. Economic activity slowed to a crawl. Now, however, recovery is everywhere one looks. Businesses are reopening and the economy is waking. This crisis has served to spotlight the innovation and resilience of the Greater Phoenix region business community, which appears poised for another round of recovery and growth.

This analysis seeks to quantify the impact of the pandemic in terms of labor market information, first

through unemployment data, and then through the lens of the people who were forced to file for unemployment insurance benefits this year. Three key findings underscore the challenges of this crisis and the resilience of the Greater Phoenix region's business community:

1. The speed at which the pandemic impacted our economy was unprecedented. Businesses and workers reeled under the dramatic economic downturn.
2. The number of people who dropped out of the labor force risks reversing years of hard-fought gains.
3. The impact of the crisis was uneven, with sectors like accommodation and food services, retail trade, and health care deeply impacted by the constrictions of the labor market.

There is no single perspective that allows one to quickly evaluate something as complex and amorphous as a regional labor market. It is important to consider as many sides of the crisis as possible to gain a more comprehensive perspective. In this analysis, we will take a brief look at four critically important econometric indicators to gain some perspective on the impact of this global health crisis on the local economy:

1. The Unemployment Rate
2. The Labor Force Participation Rate (the percentage of the eligible population who are in the labor force)
3. The Size of the Labor Force (the employed and those trying to become employed)
4. The Number of Employed Persons

¹ Arizona Department of Health Services

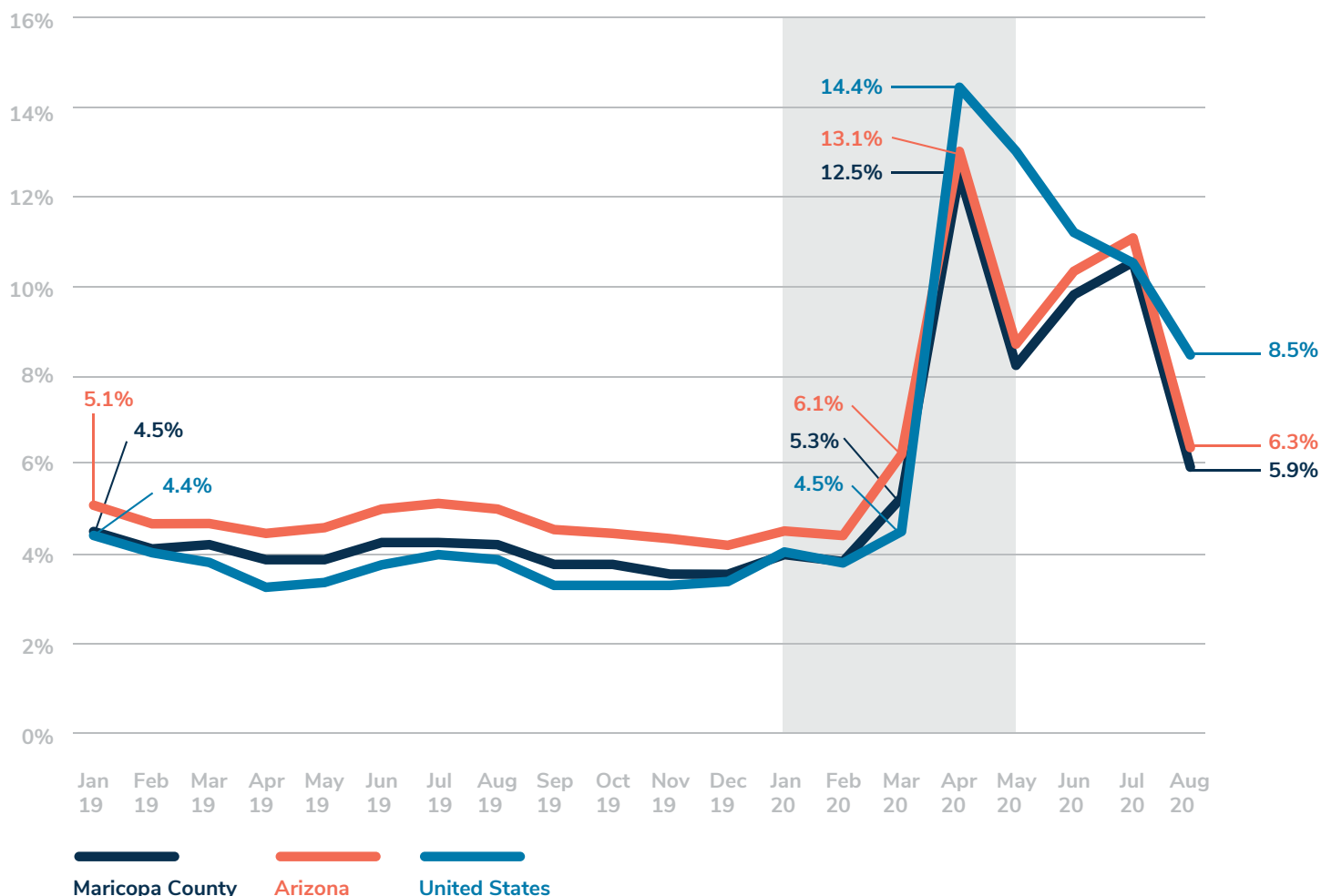
Impact of COVID-19

Unemployment Rates

Unemployment rates across the United States, in Arizona, and in Maricopa County, remained at or near historic low levels for some time. The rate was low for almost every sub-population tracked, including racial and ethnic minorities, women, and older workers.

Beginning with the rates reported in March 2020, Maricopa County's unemployment rate soared more than seven percentage points in one month. The rate has fallen significantly since its peak and now is roughly equivalent to levels in the early stages of the pandemic. Arizona and Maricopa County are both outperforming U.S. unemployment rates.

Chart 1: Unemployment Rates, United States, Arizona, and Maricopa County, 2019-2020:



Source: Arizona Office of Economic Opportunity, [Local Area Unemployment Statistics](#)

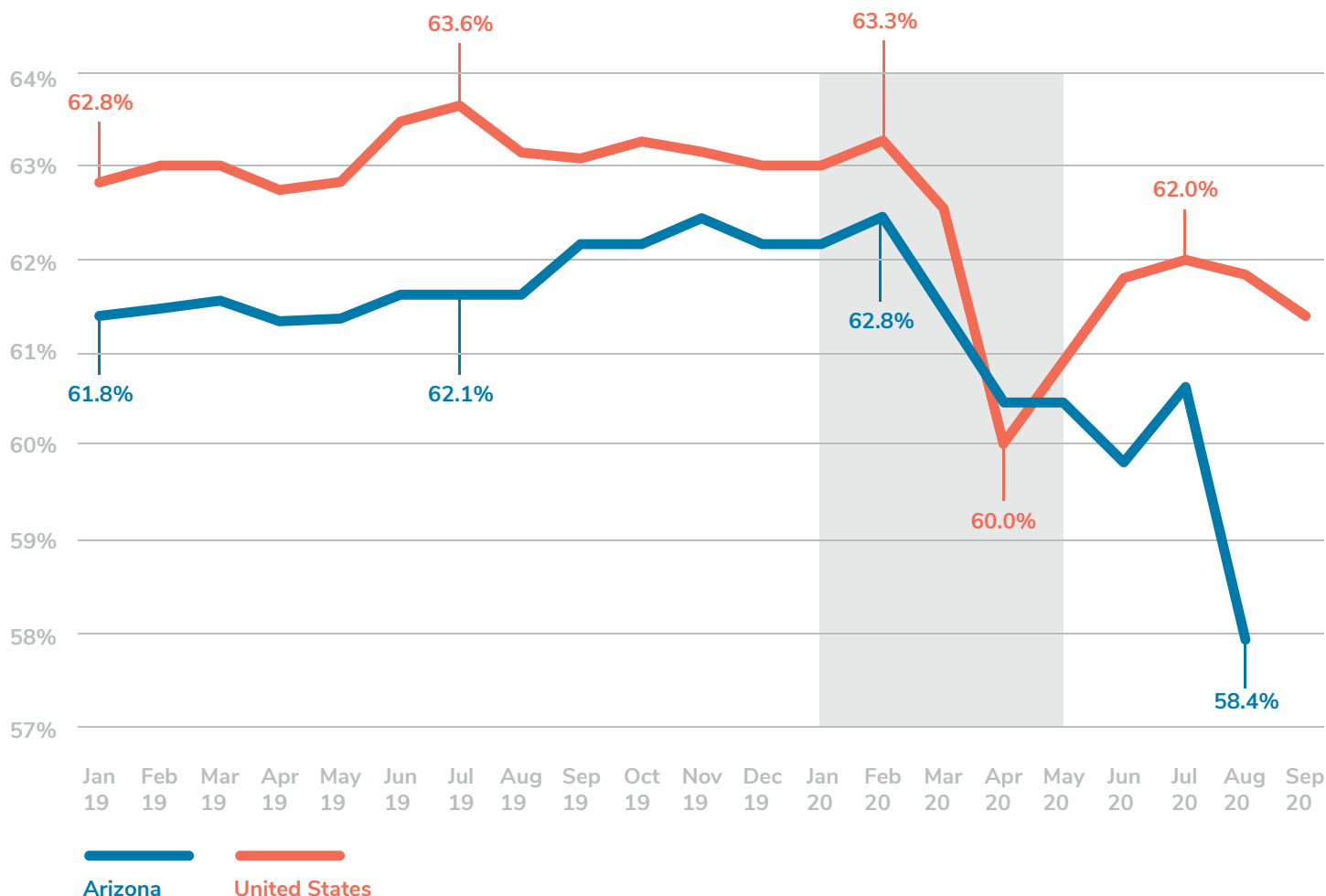
Impact of COVID-19

Labor Force Participation Rate

The percentage of the civilian non-institutional population that participates in the labor force is a valuable econometric indicator to evaluate in tandem with the unemployment rate. The unfortunate truth is that an unemployment rate can improve for several reasons, including a shrinking labor force.

Many workers in Arizona may be temporarily giving up on finding a job and returning to the labor force. If that is the case, it indicates an opportunity for the region's economic development, education, and workforce development systems not only to offer programming and opportunity around 21st Century skills but also to reach out to these disconnected Arizonans to inform them of the real opportunities in the current labor market and the value proposition for participating in what may become another historic recovery.

Chart 2: Labor Force Participation Rate, Arizona and United States, 2019-2020:



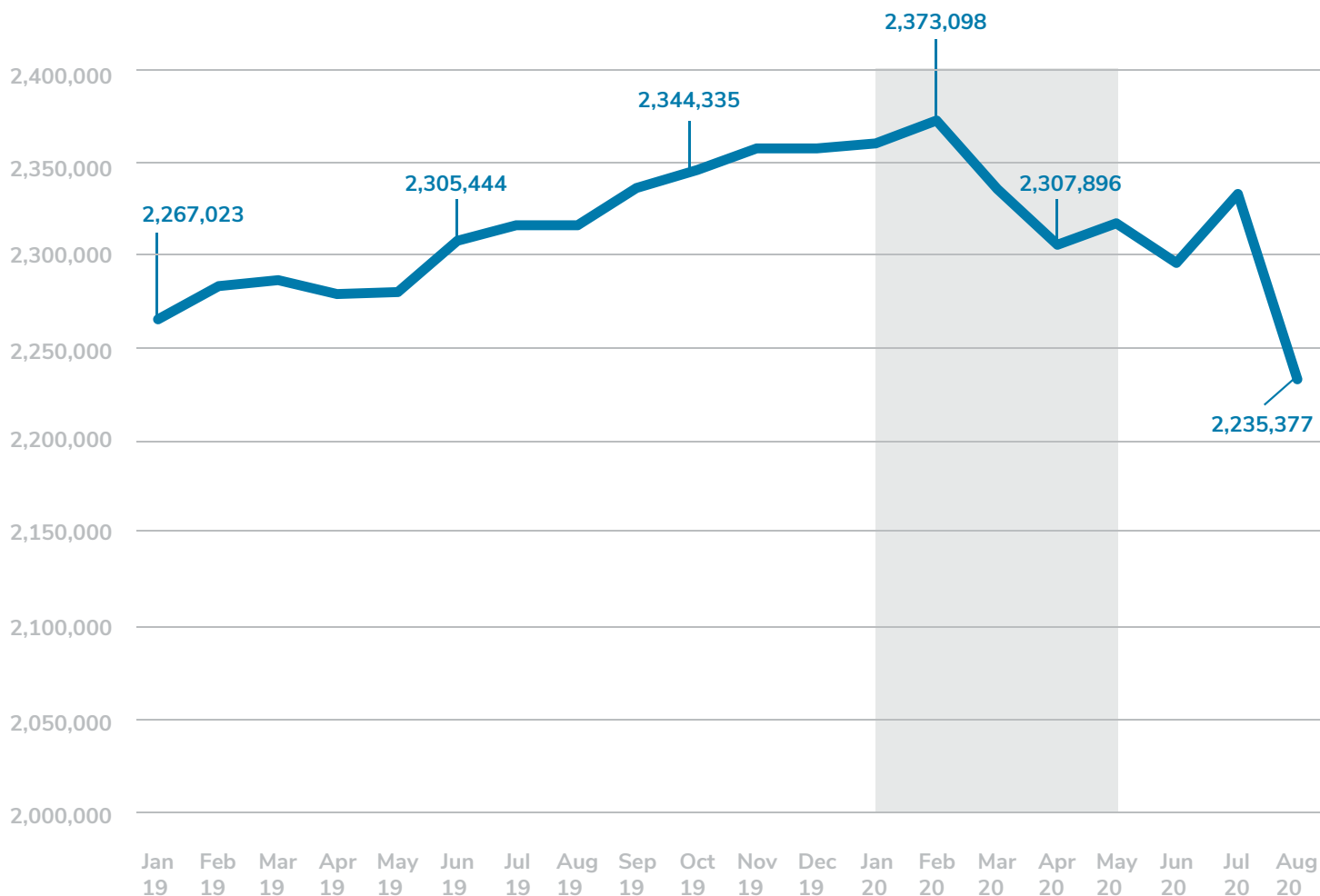
Source: Arizona Office of Economic Opportunity, [Labor Force Statistics](#); United States Bureau of Labor Statistics, [Current Population Survey](#)

Impact of COVID-19

Size of the Labor Force

Several efforts have been made in recent years to impact Arizona’s “disconnected population,” those who are not in school, not working, and not looking for work. Efforts like ASU’s [Opportunities for Youth](#) and the Workforce Arizona Council’s [Arizona Career Readiness Credential](#) have made intentional efforts to reach out to disconnected populations and create pathways for them to return to the labor force and participate in a historic economic recovery. A booming job market combined with significant population growth caused Maricopa County’s labor force to climb steadily to the highest level ever recorded in February 2020 (2,373,098). In a matter of six months, however, those gains were wiped out, and the metric saw its lowest recorded value since October 2019.

Chart 3: Labor Force, Maricopa County, 2019-2020



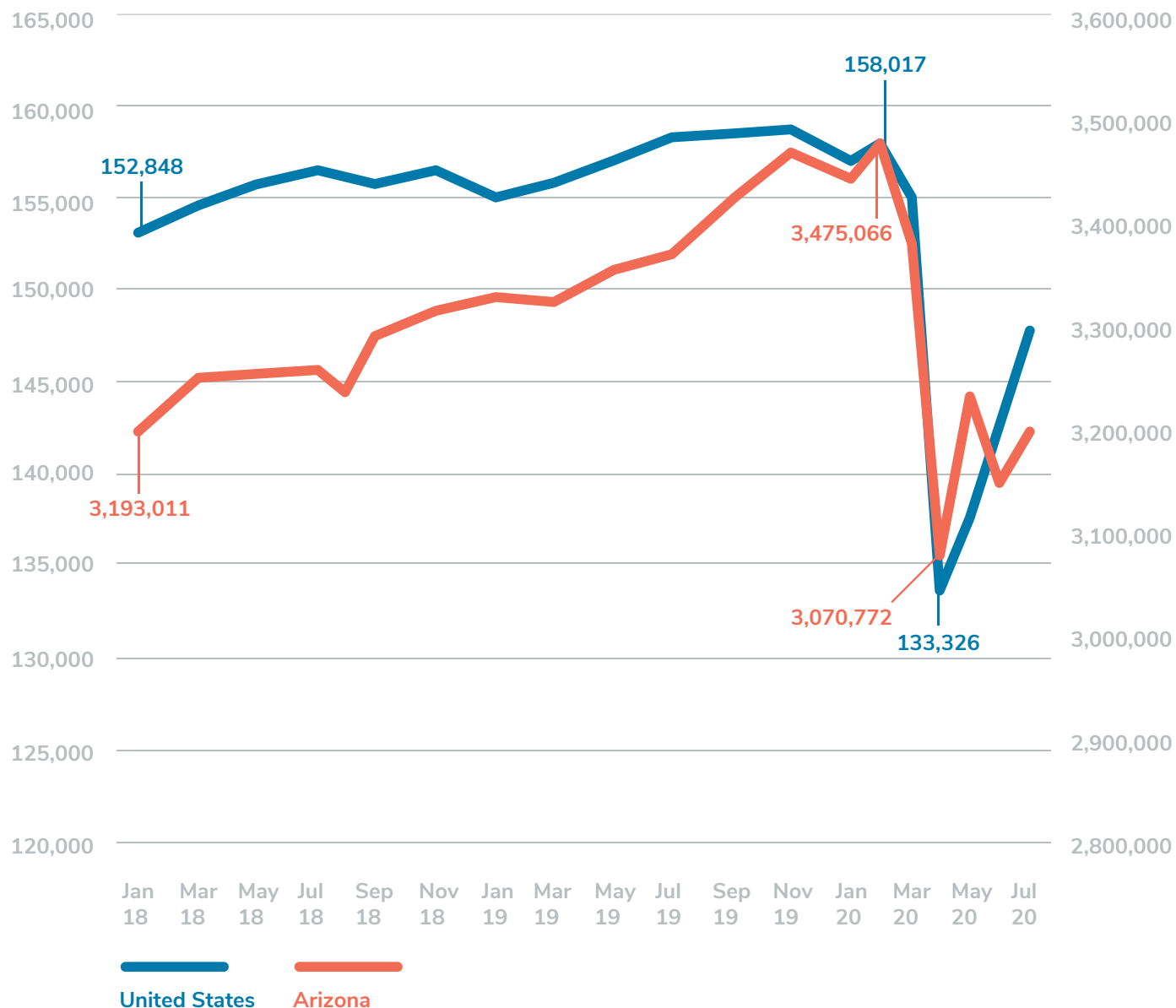
Source: Arizona Office of Economic Opportunity, [Labor Force Statistics](#)

Impact of COVID-19

Number of Employed Persons

The number of people employed was at historically high levels in late 2019 and early 2020, at both national and state levels. The drop in the number of people employed was dizzying. In the span of six months, from February to August, more than 325,000 fewer people were employed in Arizona.

Chart 4: Number of Employed Persons, United States and Arizona, 2018-2020:



Source: United States Bureau of Labor Statistics, [Current Population Survey](#); Arizona Office of Economic Opportunity, [Labor Force Statistics](#)

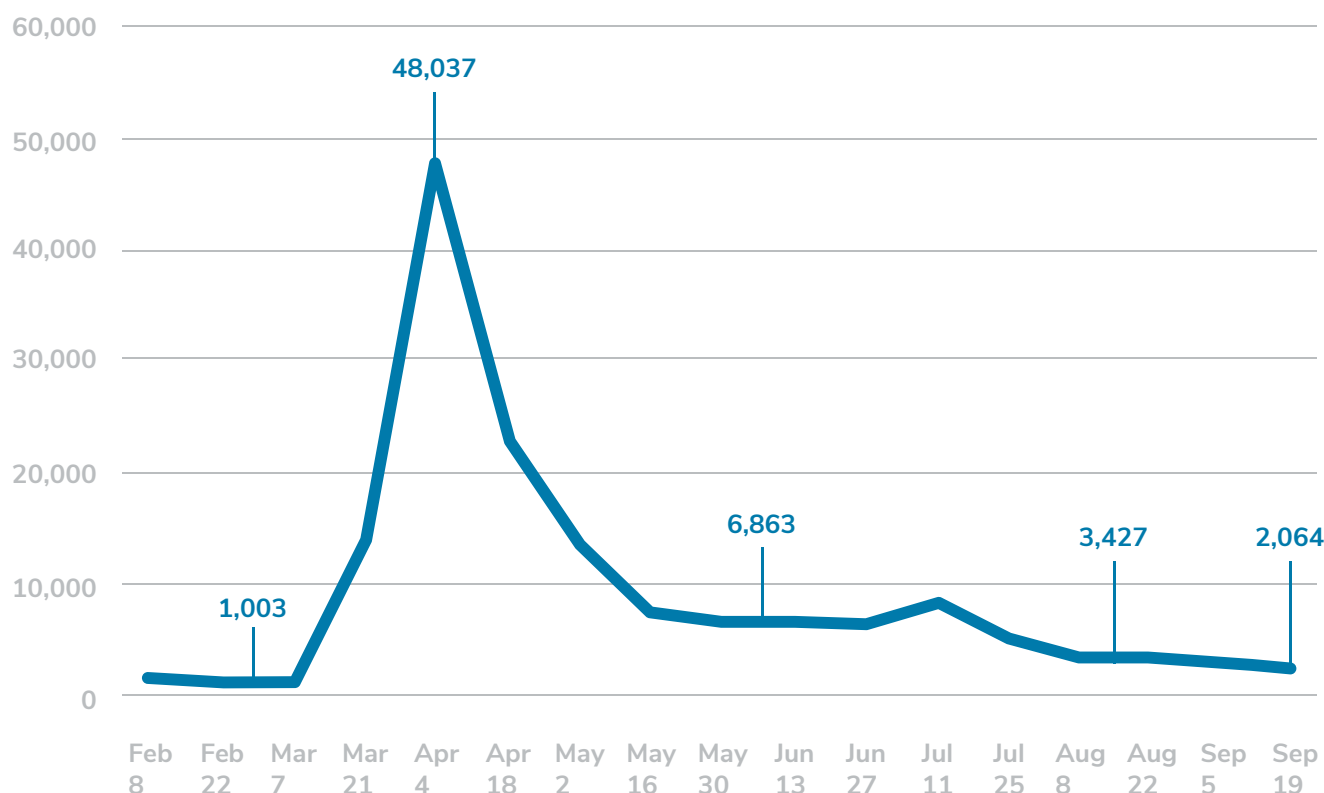
Impact of COVID-19

Unprecedented Demand for Unemployment Benefits

Unemployment Insurance Claims

Analysis of initial unemployment insurance benefits claims illustrates a couple of points to consider: The number of people filing first-time unemployment insurance claims was immense, and the number of unemployment claims rose from around 1,000 per week in late February to just shy of 50,000 at its peak in early April.

Chart 5: Initial Unemployment Insurance Claims, Maricopa County, 2020:



Source: Arizona Office of Economic Opportunity, [Unemployment Insurance Claims Data](#)

The number of unemployment claims rose from around 1,000 per week in late February to just shy of 50,000 per week in early April.

While the number of workers in the region filing first-time claims has returned to roughly pre-crisis levels, it is notable that the number of continuing claims remains near record-high levels. This suggests that people who have filed for unemployment benefits are not returning to the workforce. The reasons for this dynamic are not immediately clear, and the passage of time may be required before we understand why individuals continue to stay on unemployment benefits.

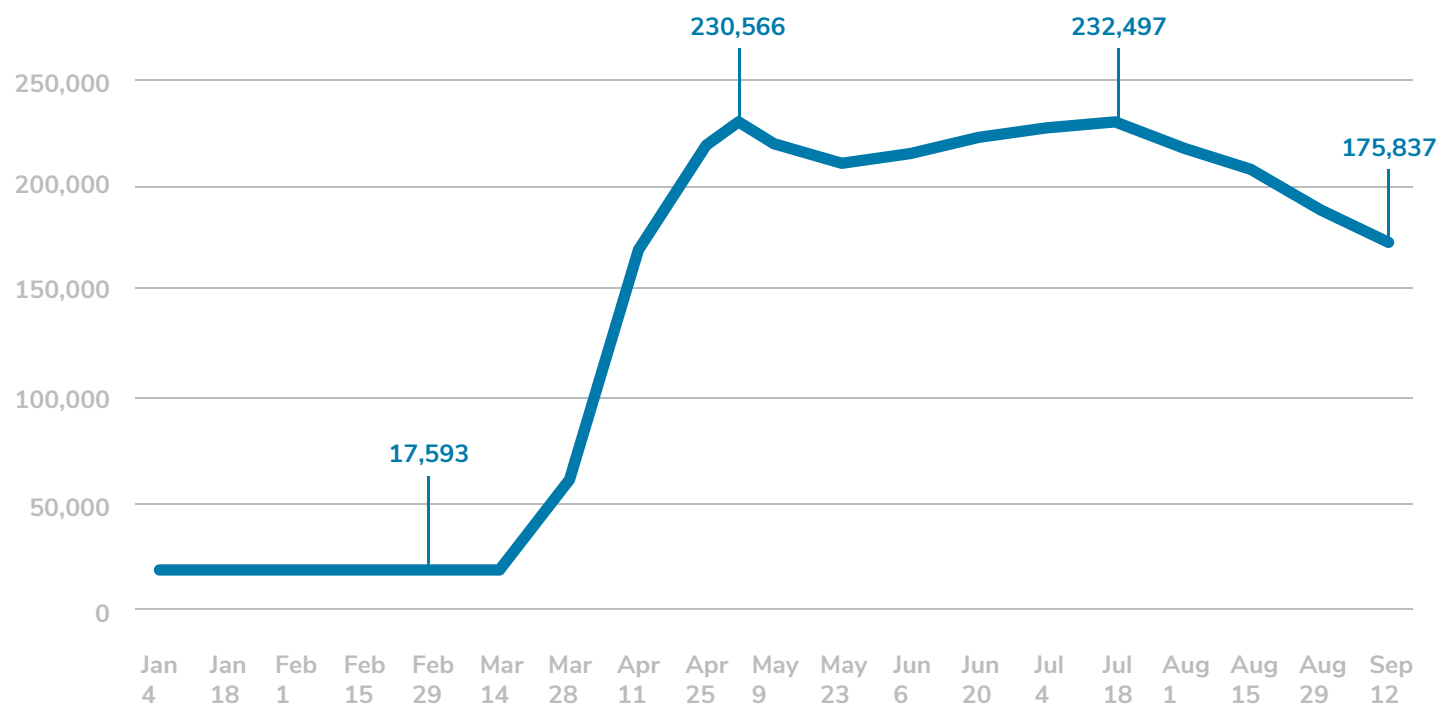
Impact of COVID-19

On March 27, President Trump signed the CARES Act into law, which made a number of changes to expand unemployment assistance.² These include:

- Expanding eligibility to individuals who historically have not been eligible for unemployment benefits such as individuals who are self-employed, contract workers, or gig workers;
- Providing people with an additional \$600 per week in benefits on top of the unemployment amount already offered by Arizona Unemployment Insurance benefits; and
- Authorizing extended benefits for an additional 13 weeks for individuals who exhaust their unemployment benefits.

Additionally, the Arizona Department of Economic Security suspended the requirement to “actively seek work” to receive benefits.³ These changes resulted in a dramatic spike in the number of continuing unemployment insurance claims.

Chart 6: Continuing Unemployment Insurance Claims, Maricopa County, 2020:



Source: Arizona Office of Economic Opportunity, [Unemployment Insurance Claims Data](#)

² Governor's Office

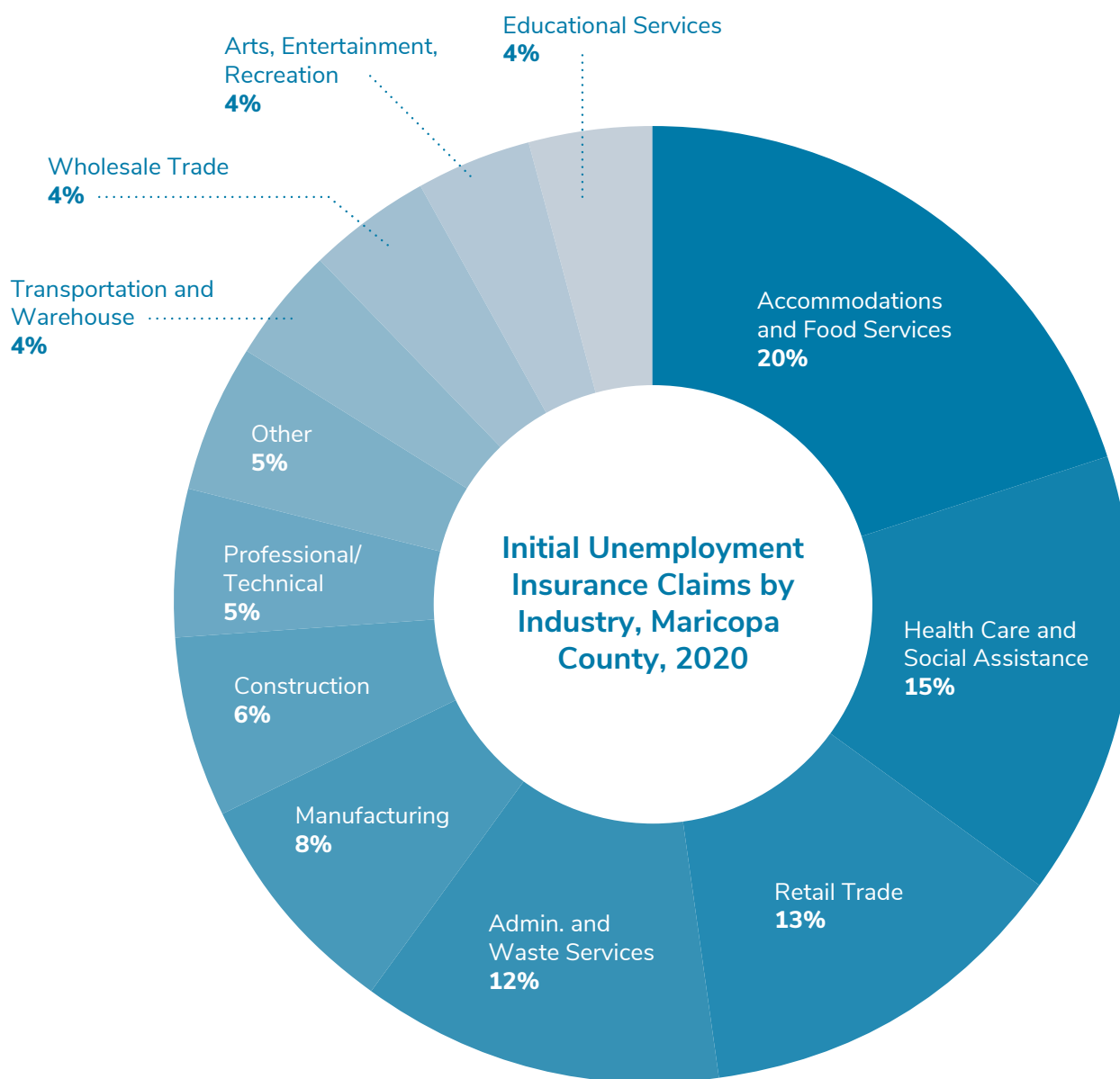
³ Arizona Department of Economic Security

Impact of COVID-19

Unemployment Impacts by Industry

The impact of the pandemic on the region's industries was uneven. Workers who filed initial unemployment insurance claims came from every sector, but by far, the industry with the most unemployed workers was accommodation and food services. It is notable that the industry with the second-largest number of claims was health care and social assistance. To a lay observer, it might seem counter-intuitive that in the middle of a global health crisis, the health care sector was laying off workers, eliminating jobs, and closing establishments, but one must remember that many components of the health care sector, including offices of physicians, offices of dentists, mental and substance abuse counselors and others were shuttered or operating at reduced capacity during the peak of the crisis.

Chart 7: Initial Unemployment Insurance Claims by Industry, Maricopa County, 2020:



Source: Arizona Office of Economic Opportunity, *Unemployment Insurance Claims Data*

Impact of COVID-19

Unprecedented Demand for Unemployment Benefits

Approximately one of every seven workers in the accommodation and food services industry, and one of eight in health care and social assistance, have filed an unemployment claim at some point in the first eight months of 2020.

Table 1: Unemployment Insurance Claims by Industry, Maricopa County, 2020

Industry	UI Claims	Percentage of Industry
Accommodations and Food Services	46,363	15%
Health Care and Social Assistance	36,314	12%
Retail Trade	29,977	10%
Admin. and Waste Services	28,276	9%
Manufacturing	19,288	6%
Construction	13,338	4%
Professional and Technical	11,002	4%
Other Services	10,994	4%
Transportation and Warehouse	10,924	4%
Wholesale Trade	9,536	3%
Arts, Ent, Rec.	8,755	3%
Educational Services	8,719	3%
Finance and Insurance	6,494	2%
Real Estate	5,956	2%
Information	4,697	2%
Management of Businesses	2,202	1%
Public Admin.	1,603	1%
Agriculture, forestry, fish	371	0%
Mining	219	0%
Utilities	162	0%

Source: Arizona Office of Economic Opportunity, [Unemployment Insurance Claims Data](#)



Impact of COVID-19

Employer Perspectives

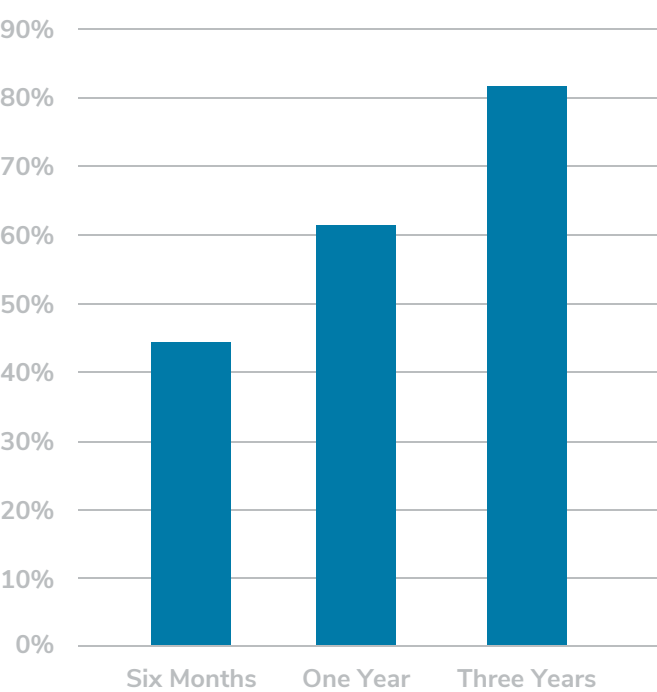
The Greater Phoenix Chamber Foundation conducted a survey of employers in the Greater Phoenix region in September 2020 and gained valuable perspective on several issues related to the COVID-19 pandemic.

Overview of the Survey

Businesses of every size were represented in the survey. More than half of the respondents were companies with fewer than 500 employees, while 40% were very large firms with more than 500 employees. More than a third (34.3%) were small businesses (50 or fewer employees).

The industry group most represented in the survey was health care and social assistance (14.9% of respondents). Just less than 12% came from the professional, scientific, and technical services sector, 11% from finance and insurance, and 10% from construction. The only two industries not represented in the responses were mining and wholesale trade.

Chart 8: Expected Timeframe for a Return to Normal:



Impact of the Pandemic

Around 40% of the businesses that responded to this survey were required to shut down at least a part of their business in response to the pandemic. More than 60% were forced to close or limit parts of the business because of pandemic-related changes in demand for products or services.

Additionally, 46% agreed, either somewhat or completely, that the government response in the Greater Phoenix region has been conducive to the long-term success of the business.

When asked about employers' expectations for returning to pre-pandemic levels of employment and revenue, four out of five respondents expect a return to normal within three years, while less than half expect that to happen within the next six months.

Changes in the Workplace

When asked whether employers had implemented or expanded work-from-home opportunities, and if so, if the remote workers were engaged in the same or different activities, 88% had implemented or expanded work-from-home opportunities, and 69% of those report different expectations for work in this new remote environment.

Table 2: New Work Expectations

New Expectation	% of Responses
Professional development/training	63.6%
Education	31.8%
Strategic planning	27.2%
Pending administrative tasks	31.8%
Volunteer/community support	25.0%
Other	18.1%

Impact of COVID-19

Changes in the World of Work

This report sought to illustrate the dramatic nature of the pandemic-driven economic downturn in the Greater Phoenix region, but the region's business community is adaptive, resilient, and innovative. These characteristics will certainly carry forward into a new paradigm that involves fundamental changes in the way work is done. A few of the changes we see on the horizon are profiled below.

#1: Lateral and Diagonal Moves on the Career Lattice

Many of the workers who found themselves unemployed during the pandemic will never return to the occupations or the industries they left. It is incumbent on these workers to take ownership of their career trajectories, establish or revisit personal goals, and pursue resources that will position them to move into the career pathways that align with their personal priorities and provide a high-value career pathway into the 21st Century workforce.

It is also incumbent on the talent development ecosystem, including our education and workforce development entities, to profile the skills of these impacted workers and to connect them to the labor market information and guidance to help them

re-evaluate their career trajectories rather than simply enrolling them in their programs of choice.

One cannot simply move to a new career without additional training or experience, so it is important that these workers learn new skills, pursue additional training and education, and develop new networks that support their new career goals. This is where the guidance and counseling of the education and workforce development systems could prove immensely valuable.

As noted earlier, front-line workers in roles like phlebotomist and dental assistant were subject to significant layoffs and dislocation. As an example of transitioning into an entirely new career pathway, this report looked at occupations that require very similar skills, both in the healthcare support occupation family and in others, that are projected to grow in coming years, and that pay higher than average wages here in the Greater Phoenix region.

Economic Modeling Specialists International uses a sophisticated system to compare the skills profiles of more than 900 occupations and to assign a "compatibility index" to the relationship between any two of them. As an example, the skills developed by a phlebotomist, including the detailed record-keeping and information management requirements of the job, gives him/her a base of skills that can prove valuable in several other pathways.

Table 3: Phlebotomist Compatible Occupations:

O*NET Occupation	Compatibility Index	2020 Jobs*	Annual Openings	Median Wages
Medical Assistants	96	13,181	2,056	\$34,528
Nursing Assistants	94	9,127	1,417	\$33,238
Neurodiagnostic Technologists	92	5,802	560	\$75,005
Endoscopy Technicians	92	1,460	220	\$53,569
Occupational Therapy Assistants	92	839	133	\$67,205
Magnetic Resonance Imaging Technologists	92	599	52	\$83,233
Nuclear Medicine Technologists	92	197	17	\$85,978
Police Identification and Records Officers	91	1,320	95	\$88,855
Cardiovascular Technologists and Technicians	91	462	42	\$55,435

Source: United States Bureau of Labor Statistics, [Quarterly Census of Employment and Wages](#)

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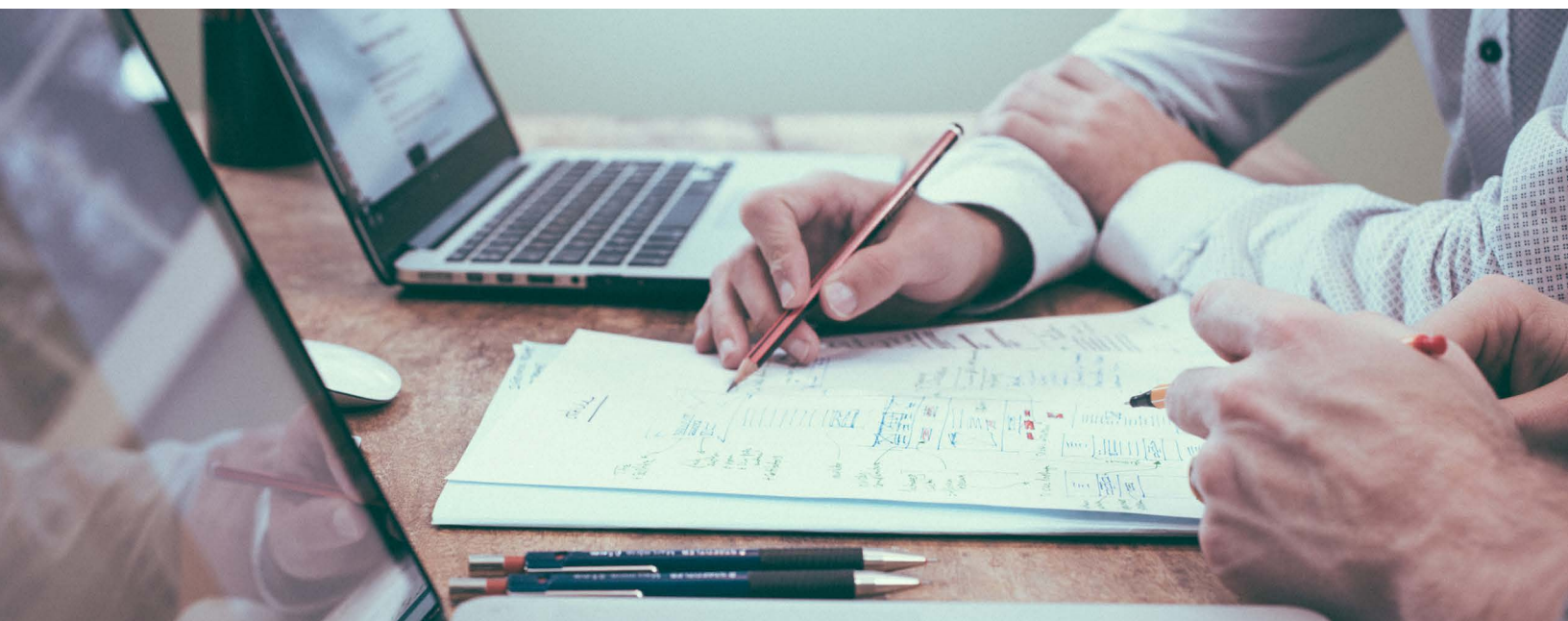
#2: Retirements and Other Exits Impacting the Workforce

According to a report published in August 2020 by the Retirement Equity Lab, 2.9 million older workers have left the labor force since March. These workers are at risk of having to retire involuntarily due to increased health risks coupled with decreased job prospects.

If the rate of labor force exits continues over the next three months, an additional 1.1 million older workers are expected to leave the labor force, adding to the 2.9 million who already left. A total of 4 million people potentially pushed into retirement before they are ready will increase old-age poverty and exacerbate the recession.

The Retirement Equity Lab economists, including Teresa Ghilarducci, estimate that the longer the economy takes to recover, the more likely it is older workers will give up actively looking for work.

Several indicators show 2.9 million older workers who exited the labor force are unlikely to return. First, 42% of the 2.9 million older workers who left the labor force report retiring, compared to the 28% at the start of the Great Recession. It is unlikely that the rapid increase in self-reported retirements during the COVID-19 recession reflects an increase in planned retirements. Second, 51% of older workers who went from employed to out of the labor force reported they first tried to find a job but gave up. Third, whereas labor force participation rebounded for younger workers in May and June, participation for older workers remains low, indicating that older workers did not re-enter the workforce even as many states relaxed restrictions on work and travel. Given the health risks older workers face by working, it is likely they are making the difficult choice between protecting their health and the decreased living standards that often come with involuntary retirement.⁴



Impact of COVID-19

#3: Moves Toward Virtual Workspace

The perspectives of the Phoenix-area employers who participated in the Foundation's survey confirm what many of us instinctively suspect: remote workforces are going to be a bigger part of our business structures than ever before.

In research conducted by Trevor Stokes in June 2020, the four reasons behind the shift to remote work included:

- The cost savings are difficult to resist.
- Employers have solved the security and productivity concerns that made them hesitant about remote work in the past.
- Concerns about the health and safety of workers requires a reimagining of the workspace.
- Fear of litigation from an infected worker outweighs many other concerns.

A segment of the employer survey was particularly relevant to this point.

When asked in what way the organization's industry would never be the same after the pandemic, almost the entirety of the answers to these open-ended questions fell into the category "less office space/more remote work opportunities/less business travel." Samples of the comments include:

"The amount of real estate that we occupy with offices will continue to reduce. More of our workforce will continue to operate remotely."

"The pandemic has truly changed the way in which we deliver healthcare in this country. More patient visits will be virtual. The way people use emergency departments will change to be those that truly need emergent care. I suspect that people will shy away from elective procedures and surgeries to stay out of the hospital setting."

"The move to WFH (work from home) is permanent so the need for the office is fairly minimal. Also, it's expanded our talent pool as we can hire across the country vs. just a Phoenix Metro focus."

"We will never need the amount of office space we once thought we would. We have also proven our Associates do not necessarily have to live in Phoenix, let alone Arizona."



Impact of COVID-19

Summary

The impact of COVID-19 in the Greater Phoenix region was deep and broad. Every element of daily life and every sector of the economy was impacted. Thousands of businesses were closed, and tens of thousands of workers suddenly found themselves unemployed.

Recovery from a downturn this precipitous and uniquely challenging time will almost certainly be uneven, and as the region regains its balance and recaptures its economic momentum, opportunities for innovation and collaboration will present themselves. It is incumbent on the business community to look to the future now and prepare for those opportunities. The leadership of both the region's public and private sectors will be called upon to provide assurance and strategic direction during a recovery that is likely to be longer and more difficult than the crisis itself.

The history of resilience and adaptability in the region's business community gives reason for optimism, and as General Colin Powell once said, "Perpetual optimism is a force multiplier."

The leadership of both the region's public and private sectors will be called upon to provide assurance and strategic direction during a recovery that is likely to be longer and more difficult than the crisis itself.

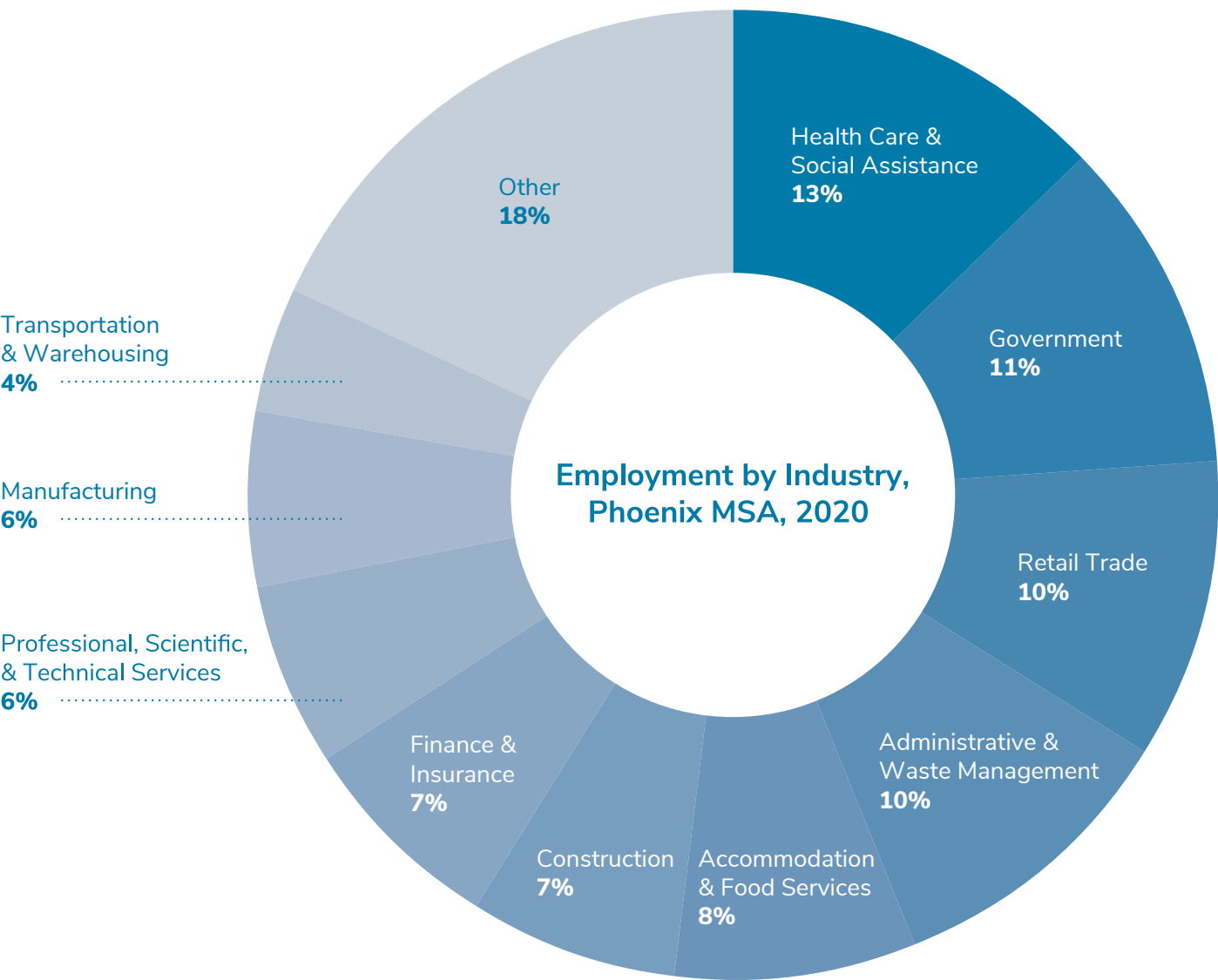


Key Industries, Occupations, and Skills

Industries within the Greater Phoenix Region

Legacy industries, those large and critical sectors on which the regional economy was built, continue to dominate the landscape. New technologies, shifting societal norms, and novel health threats are impacting the nature of the economy across the globe. However, while the characteristics of the region's leading industries are quickly evolving, the core nature of those industries is not. To a large degree, the legacy industries on which the Greater Phoenix region's economy relied 50 years ago remain; however, the tools, technologies, and markets with which these industries produce their goods and services are redefining the everyday experience of working in them.

Chart 9: Employment by Industry, Phoenix MSA, 2020:



Source: Arizona Office of Economic Opportunity, [Quarterly Census of Employment and Wages](#)

Key Industries, Occupations, and Skills

How does this distribution of businesses compare to other markets? One technique often used to estimate the “concentration” of an industry is an “employment location quotient.” This indexed measure estimates the percentage of a population that is employed in a certain industry against the national average (represented by 1.0).

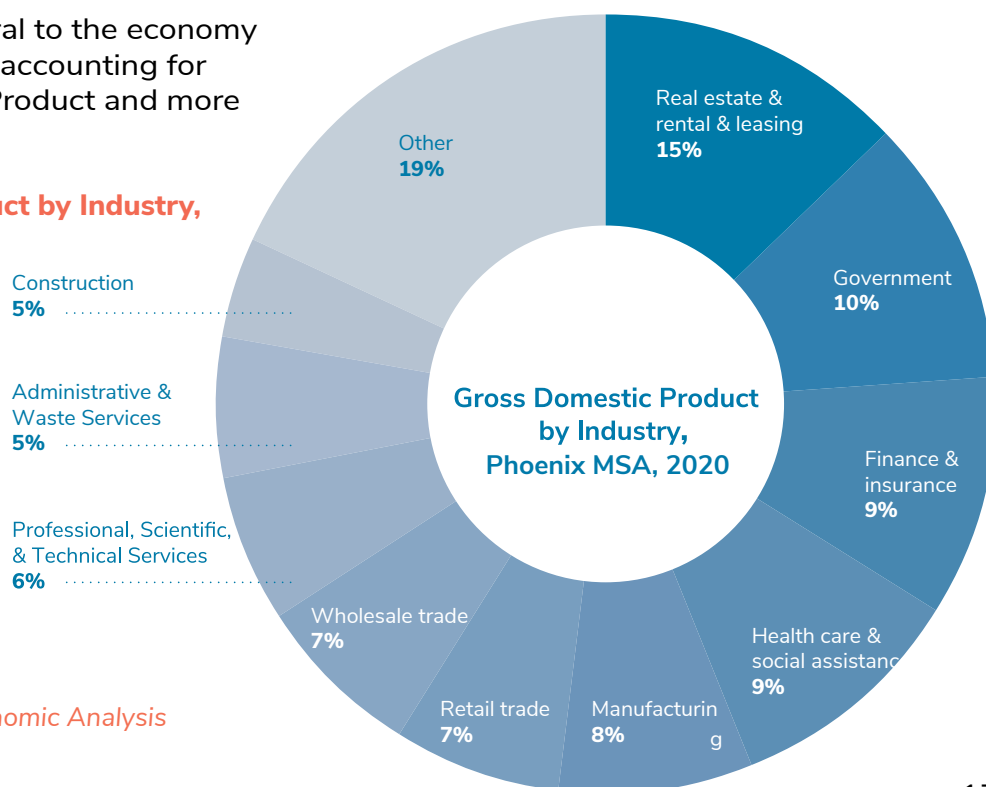
Chart 10: Industries by Location Quotient, Phoenix MSA, 2020:



Source: Arizona Office of Economic Opportunity, *Quarterly Census of Employment and Wages*

These core industries are central to the economy of the Greater Phoenix region, accounting for 47.8% of the Gross Regional Product and more than a third of all jobs.

Chart 11: Gross Domestic Product by Industry, Phoenix MSA, 2020:



Source: *United States Bureau of Economic Analysis*

Key Industries, Occupations, and Skills

Arizona's Fastest Growing Occupations

Every two years, the Arizona Office of Economic Opportunity projects employment levels for every industry and occupation in the state's labor market. The projections that were released in 2020 used 2018 employment as a baseline and estimated changes across a ten-year span into 2028. This report examined the occupational projections and identified those with the fastest projected rate of growth (limited to those with 5,000 jobs or more). [Appendix One](#) shows brief skills profiles of the top 100 occupations.

Table 4: Arizona's Fastest Growing Occupations, 2018-2028

Occupation	Projected Change	Percentage Change	Median Wages
Home Health Aides	10,990	74%	\$24,409
Personal Care Aides	25,941	67%	\$23,826
Medical Assistants	6,435	49%	\$33,637
Medical and Health Services Managers	2,753	47%	\$97,855
Social and Human Service Assistants	2,532	46%	\$30,339
Registered Nurses	18,224	45%	\$78,535
Software Developers, Applications	5,982	45%	\$99,859
Nursing Assistants	4,548	44%	\$33,271
Medical Secretaries	3,878	43%	\$36,344
Market Research Analysts and Marketing Specialists	4,616	39%	\$71,966
Industrial Truck and Tractor Operators	3,451	38%	\$43,212
Laborers and Freight, Stock, and Material Movers, Hand	13,352	36%	\$28,418
Preschool Teachers, Except Special Education	1,871	35%	\$27,469
Financial Managers	3,426	35%	\$108,347
Loan Interviewers and Clerks	2,325	34%	\$41,267
Billing and Posting Clerks	3,063	34%	\$37,481
Insurance Sales Agents	2,225	33%	\$46,224
Loan Officers	2,614	32%	\$53,895
Light Truck or Delivery Services Drivers	4,038	32%	\$35,028
Taxi Drivers and Chauffeurs	1,843	31%	\$24,830
Cooks, Restaurant	4,849	30%	\$28,308
Computer User Support Specialists	4,172	29%	\$49,128
Paralegals and Legal Assistants	1,684	29%	\$48,138
Computer and Information Systems Managers	1,776	28%	\$135,534
Software Developers, Systems Software	2,251	27%	\$99,859

Source: Arizona Office of Economic Opportunity, [2018-2028 Employment Projections](#)

Key Industries, Occupations, and Skills

Industry Profile: Construction

The construction sector in the Greater Phoenix region has grown by 4% in the last year, led by gains in the industry's largest subsector, specialty trades contractors.

The construction industry in the region comprises several subsectors, the largest of which is specialty trades contractors. Specialty trades companies, including plumbing, heating and air conditioning contractors, electrical contractors, and roofing contractors employ more than 165,000 people in the Valley. Residential construction employs another 20,000, while nonresidential construction employs more than 15,000.

Table 5: Construction Industries, Phoenix MSA:

NAICS Code	Industry	Establishments	Jobs
238220	Plumbing, Heating, and Air-Conditioning Contractors	1,399	24,740
238210	Electrical Contractors and Other Wiring Installation Contractors	1,114	21,346
236220	Commercial and Institutional Building Construction	645	13,599
236118	Residential Remodelers	971	9,724
236115	New Single-Family Housing Construction (except For-Sale Builders)	624	9,652
238990	All Other Specialty Trade Contractors	504	9,489
238310	Drywall and Insulation Contractors	272	7,581
238910	Site Preparation Contractors	271	7,347
238110	Poured Concrete Foundation and Structure Contractors	205	6,487
237310	Highway, Street, and Bridge Construction	105	6,053
238160	Roofing Contractors	256	6,048

Source: Arizona Office of Economic Opportunity, [Quarterly Census of Employment and Wages](#)

The occupations most often employed in the construction industry are not surprising. Carpenters, electricians, plumbers, and HVAC technicians can all be found in the top ten. It should be noted that just outside the top ten are occupations that include office clerks, sales representatives, administrative assistants, real estate agents, and other occupations not instinctively associated with the workforce of the construction sector.



Key Industries, Occupations, and Skills

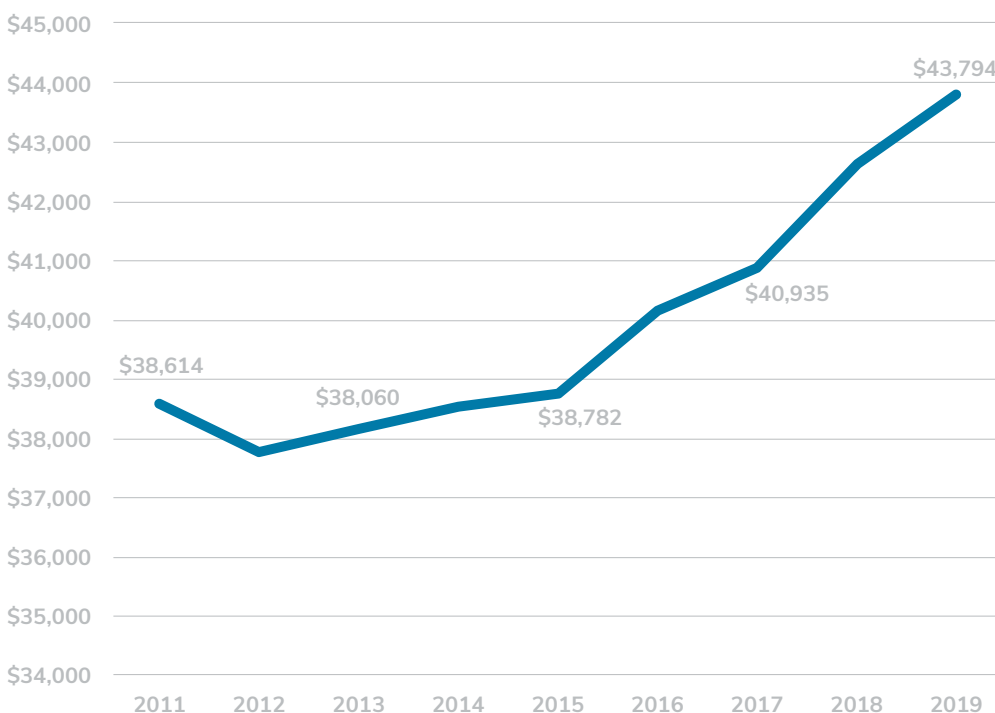
Table 6: Staffing Patterns, Construction Industry, Phoenix MSA:

Occupation	Employed in the Construction Industry	Percentage of Jobs in the Industry
Construction Laborers	21,632	12.9%
Carpenters	16,023	9.6%
First-Line Supervisors of Construction Trades and Extraction Workers	12,596	7.5%
Electricians	11,010	6.4%
Plumbers, Pipefitters, and Steamfitters	7,791	4.6%
Construction Managers	6,657	4.0%
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	6,730	3.9%
Painters, Construction and Maintenance	5,891	3.6%
Cement Masons and Concrete Finishers	5,158	3.1%
Operating Engineers and Other Construction Equipment Operators	4,416	2.6%

Sources: United States Bureau of Labor Statistics, [National Staffing Pattern Matrix](#); Arizona Office of Economic Opportunity, [Quarterly Census of Employment and Wages](#)

Wages for these occupations have risen slowly, but steadily in recent years. Over the past decade, jobs in the construction occupations have increased by more than 66%, while wages have increased by more than 12% in eight years.

Chart 12: Wages, Construction Occupations, 2011-2020, Phoenix MSA:



Source: Arizona Office of Economic Opportunity, [Occupational Employment Statistics](#)

Key Industries, Occupations, and Skills

From August 2019 to August 2020, employers from the construction sector in the Greater Phoenix region posted more than 21,000 job openings online. Almost 8,000 of those were in the construction supervisor or construction manager categories.

Table 7: Construction Postings by Job Title:

Job Title	Job Postings
Project Manager	424
Superintendent	305
Project Engineers	245
Customer Service Representative	199
Maintenance Technician	190
Administrative Assistant	161
HVAC Technaician	158
Estimator	142
Sales Leads	123
CDL Truck Drivers	103

Source: Economic Modeling Specialists International

From August 2019 to August 2020, employers from the construction sector in the Greater Phoenix region posted more than 21,000 job openings online.

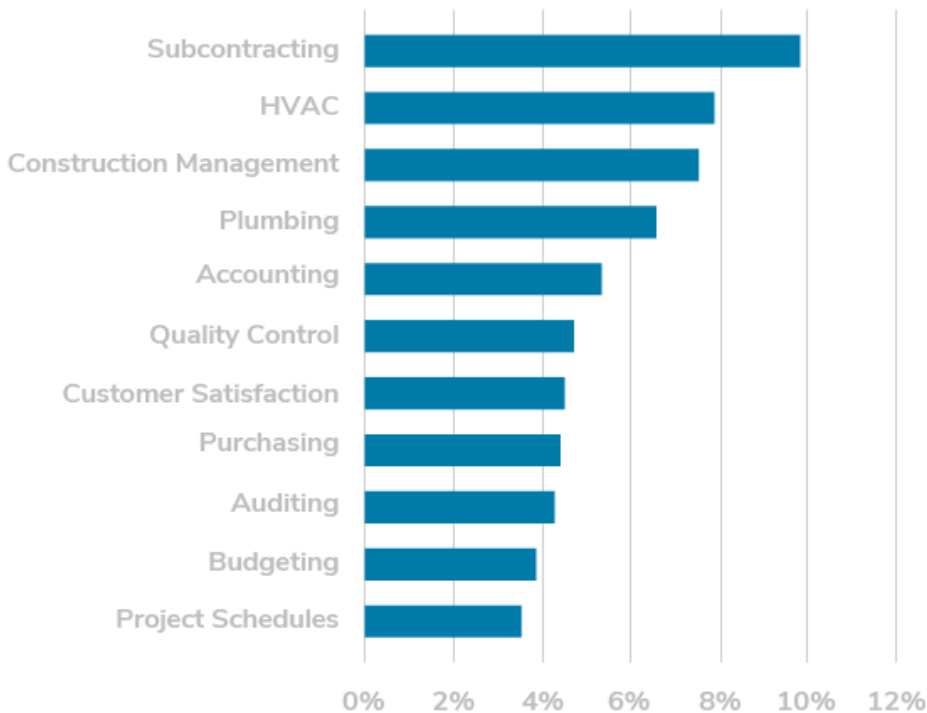


Key Industries, Occupations, and Skills

In-Demand Skills

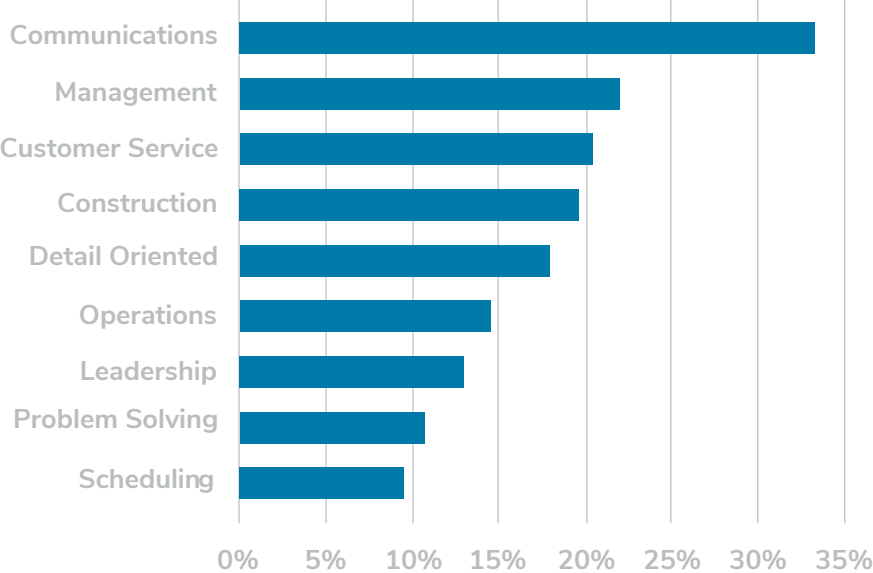
The technical skills requested most frequently in construction included categories unique to the sector, as well as some more generally related to business management and customer satisfaction.

Chart 13: Technical Skills in Job Postings:



A look at the employability skills or “soft skills” illustrates the priority employers place on personal and interpersonal competencies.

Chart 14: Employability Skills in Job Postings:



Key Industries, Occupations, and Skills

Industry Profile: Health Care

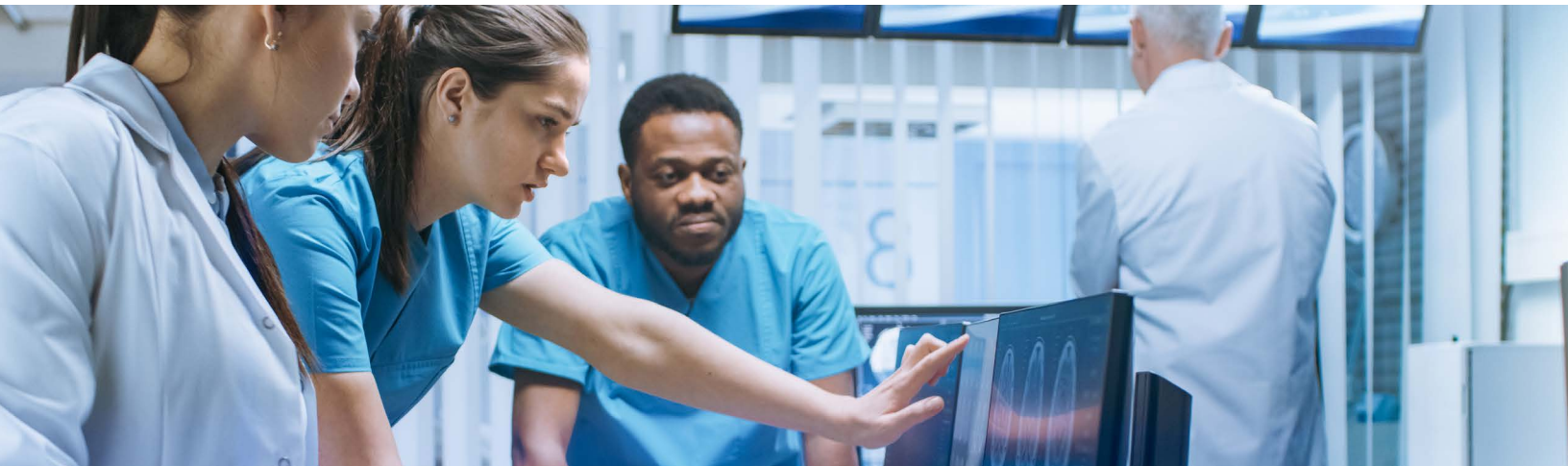
The health care sector employs more than a quarter million people in the Greater Phoenix region, and has grown by 5% in the last year, led by gains in the ambulatory health care fields. Hospitals and ambulatory care facilities are the largest components of the region’s health care sector. These companies, including general and surgical hospitals, home health care services, and physician offices employ more than 209,000 people in the Valley.

Table 8: Health Care Industries, Phoenix MSA:

NAICS Code	Industry	Establishments	Jobs
622110	General Medical and Surgical Hospitals	94	62,871
621111	Offices of Physicians (except Mental Health Specialists)	3,289	47,991
621610	Home Health Care Services	373	19,610
621210	Offices of Dentists	1,860	15,588
623110	Nursing Care Facilities (Skilled Nursing Facilities)	127	10,143
623311	Continuing Care Retirement Communities	107	9,655
623312	Assisted Living Facilities for the Elderly	428	8,765
621340	Offices of Physical/Occupational/Speech Therapists & Audiologists	552	7,322
621491	HMO Medical Centers	39	6,862
621511	Medical Laboratories	149	6,282

Source: Arizona Office of Economic Opportunity, *Quarterly Census of Employment and Wages*

The occupations most often employed in the health care industry are not surprising. Registered nurses, home health aides, medical assistants, and medical secretaries can all be found in the top ten. It should be noted that just outside the top ten are occupations that include office supervisors, medical records specialists, billing clerks, and other occupations not instinctively associated with the workforce of the health care sector.



Key Industries, Occupations, and Skills

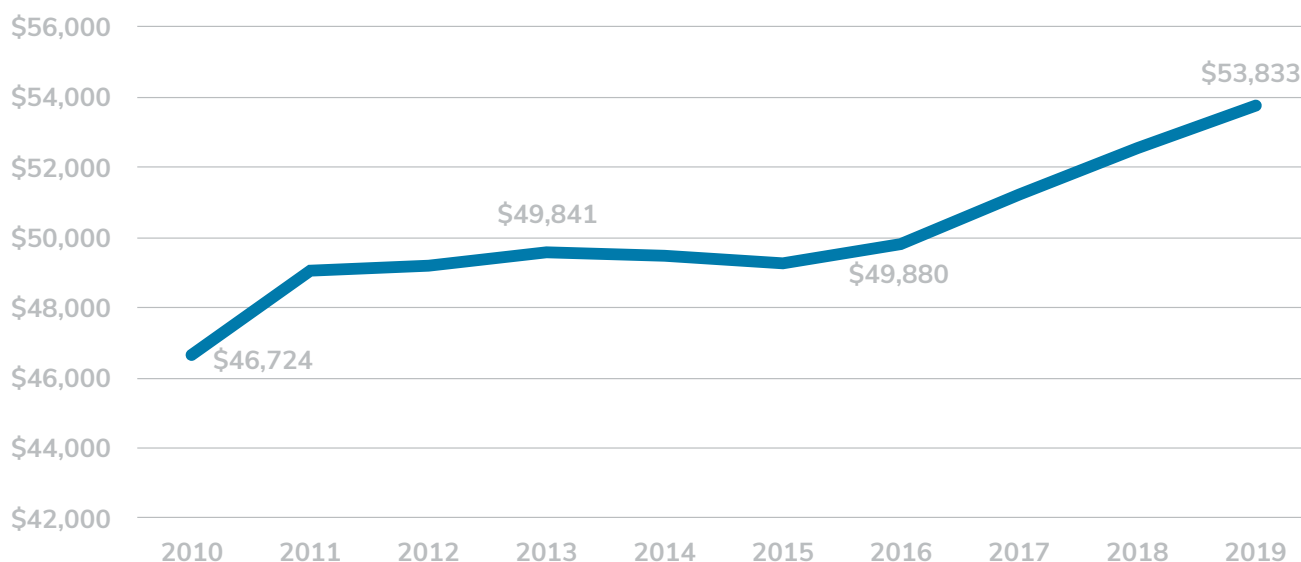
Table 9: Staffing Patterns, Health Care Industry, Phoenix MSA:

Occupation	Employed in the Health Care Industry	Percentage of Jobs in the Industry
Registered Nurses	32,147	13.3%
Home Health and Personal Care Aides	28,558	11.9%
Medical Assistants	11,675	4.8%
Medical Secretaries and Administrative Assistants	9,429	3.9%
Nursing Assistants	7,529	3.1%
Receptionists and Information Clerks	6,950	2.9%
Clinical Laboratory Technologists and Technicians	5,916	2.5%
Dental Assistants	5,710	2.4%
Physicians, All Other; and Ophthalmologists, Except Pediatric	4,890	2.0%
Licensed Practical and Licensed Vocational Nurses	4,529	1.9%

Sources: United States Bureau of Labor Statistics, [National Staffing Pattern Matrix](#); Arizona Office of Economic Opportunity, [Quarterly Census of Employment and Wages](#)

Wages for these occupations have risen slowly, but steadily in recent years. Since 2010, jobs in the health care sector increased by more than 50%, while wages have increased by more than 15% in the last eight years.

Chart 15: Wages, Health Care Occupations, 2010-2019, Phoenix MSA:



Source: Arizona Office of Economic Opportunity, [Occupational Employment Statistics](#)

Key Industries, Occupations, and Skills

From August 2019 to August 2020, employers from the health care sector in the Greater Phoenix region posted more than 103,000 job openings online. Interestingly, more ads (20,043) were placed by employment agencies than by either hospitals or physician offices.

Table 10: Health Care Postings by Job Title:

Job Title	Job Postings
Caregivers	4,421
Registered Nurses	4,142
Travel Registered Nurses	3,919
Speech Language Pathologists	3,248
Medical Assistants	2,225
Pharmacy Technicians	2,194
Physical Therapists	1,853
Certified Nursing Assistants	1,704
Licensed Practical Nurses	1,685
Occupational Therapists	1,549

Source: Economic Modeling Specialists International

From August 2019 to August 2020, employers from the health care sector in the Greater Phoenix region posted more than 103,000 job openings online.

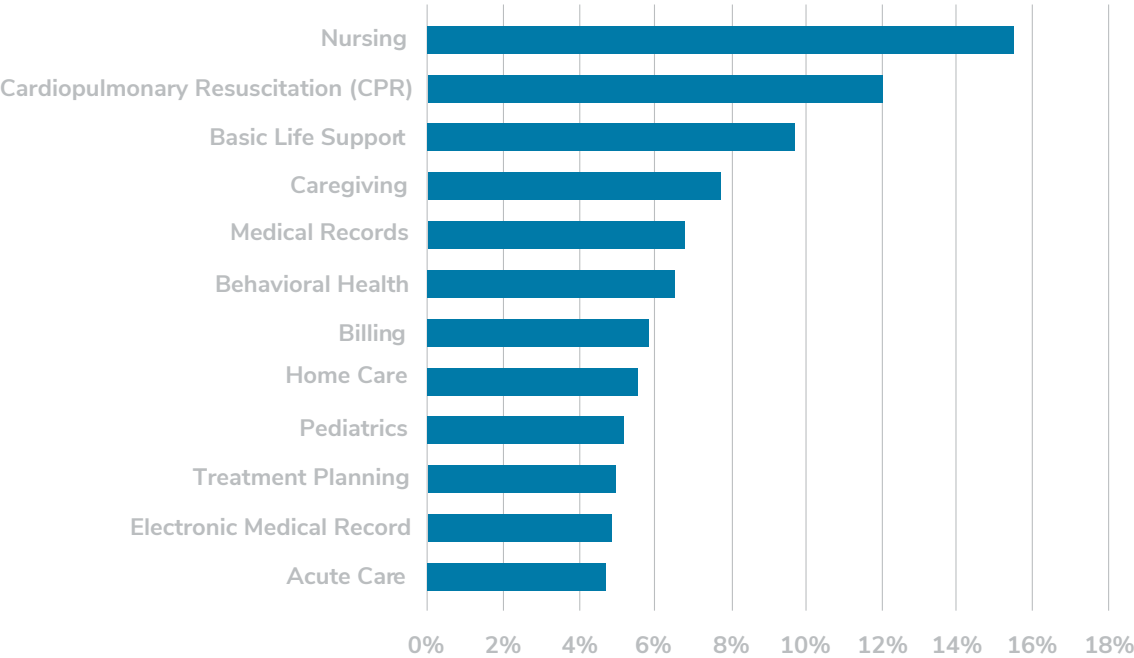


Key Industries, Occupations, and Skills

In-Demand Skills

The skills most often sought in health care covered a spectrum of technical, academic, and interpersonal skills, with nursing and CPR being mentioned most frequently.

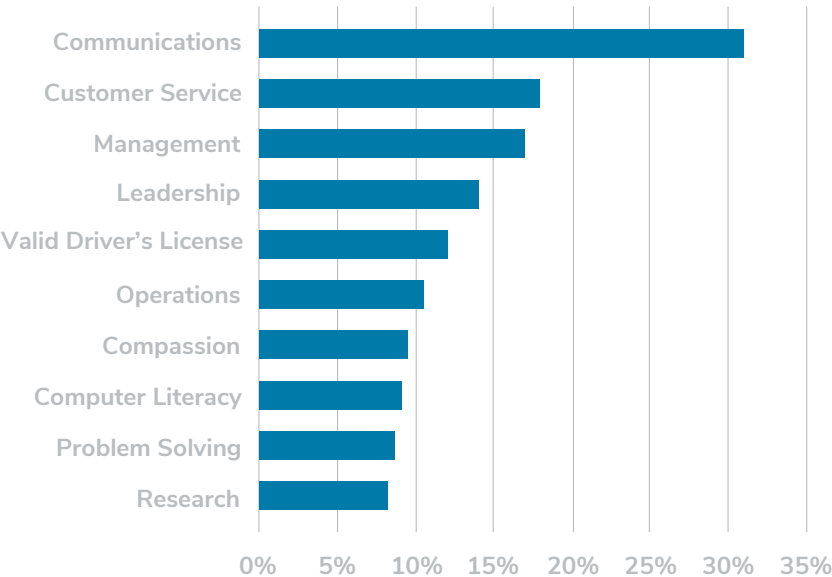
Chart 16: Technical Skills in Job Postings:



Source: Economic Modeling Specialists International

The following top employability skills were mentioned more frequently than any technical skills:

Chart 17: Employability Skills in Job Postings:



Source: Economic Modeling Specialists International

Key Industries, Occupations, and Skills

Industry Profile: Manufacturing

The manufacturing sector employs more than 136,000 people in the Greater Phoenix region, and has grown by 1.5% in the last year, led by gains in the medical equipment and supplies and aerospace specialties. The semiconductor and aerospace industries, which together employ more than 38,000 people in the Greater Phoenix region, are the largest components of the manufacturing sector.

Table 11: Manufacturing Industries, Phoenix MSA:

NAICS Code	Industry	Establishments	Jobs
33441	Semiconductor and Other Electronic Component	163	21,287
33641	Aerospace Product and Parts	97	17,247
33451	Navigational, Measuring, Electromedical, and Control Instruments	96	5,950
33911	Medical Equipment and Supplies	166	5,325
32311	Printing	336	4,443
33232	Ornamental and Architectural Metal Products	148	4,376
31181	Bread and Bakery Product	92	4,321
32541	Pharmaceutical and Medicine	64	3,700
33271	Machine Shops	218	3,398
31151	Dairy Product (except Frozen)	11	3,072

Source: Arizona Office of Economic Opportunity, [Quarterly Census of Employment and Wages](#)

The occupations most often employed in the manufacturing industry are not surprising. Assemblers, industrial engineers, and inspectors can all be found in the top ten. It is notable that within the ten most-employed occupations are software developers and other occupations not instinctively associated with the workforce of the manufacturing sector. Software developers are often employed in manufacturing firms engaged in the aerospace and navigational specialties, both areas of strength in the Greater Phoenix region.



Key Industries, Occupations, and Skills

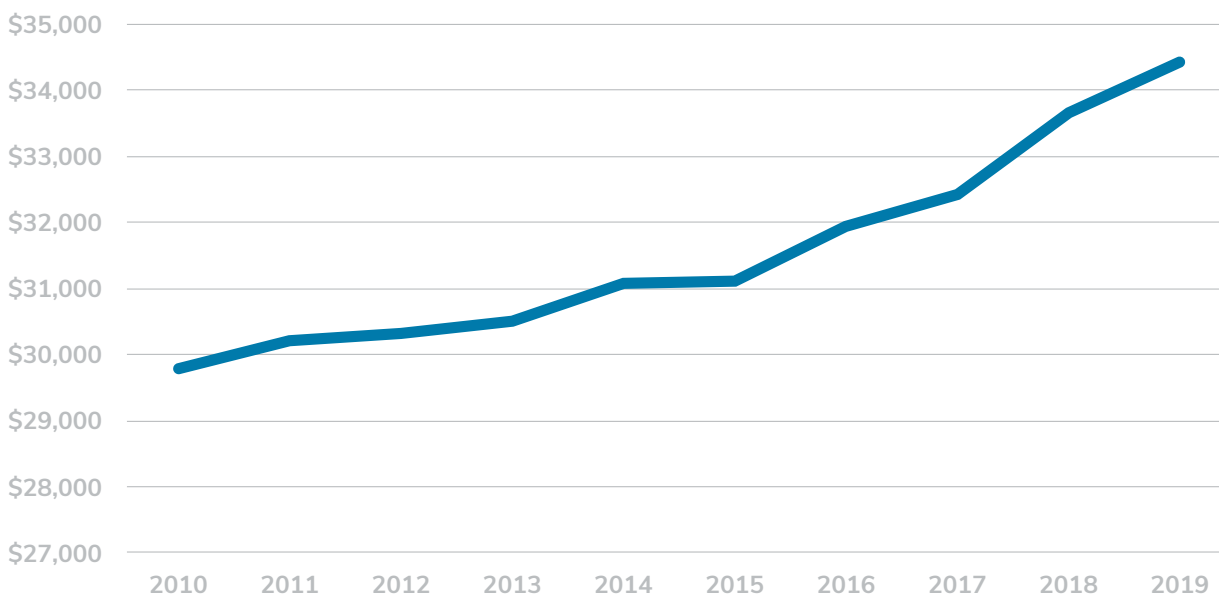
Table 12: Staffing Patterns, Manufacturing Industry, Phoenix MSA:

Occupation	Employed in the Manufacturing Industry	Percentage of Jobs in the Industry
Miscellaneous Assemblers and Fabricators	7,361	5.4%
First-Line Supervisors of Production and Operating Workers	4,244	3.1%
Inspectors, Testers, Sorters, Samplers, and Weighers	3,881	2.8%
Electrical, Electronic, and Electromechanical Assemblers	3,333	2.4%
General and Operations Managers	3,115	2.3%
Laborers and Freight, Stock, and Material Movers, Hand	3,061	2.2%
Software Developers and Software Quality Assurance Analysts/Testers	3,031	2.2%
Industrial Engineers	2,857	2.1%
Customer Service Representatives	2,833	2.1%
Sales Representatives, Wholesale and Manufacturing	2,642	1.9%

Sources: United States Bureau of Labor Statistics, [National Staffing Pattern Matrix](#); Arizona Office of Economic Opportunity, [Quarterly Census of Employment and Wages](#)

To estimate trends in wages for the industry, we limited this profile to the production occupations, those that actively work on producing goods. This approach returns a much lower number than the industry average because it excludes several higher-paying occupations, including engineers and supervisors. Since 2010, jobs in the manufacturing sector have increased by more than 18%, while wages have increased by more than 15% in the last nine years.

Chart 18: Wages, Production Occupations, 2010-2020, Phoenix MSA:



Source: Arizona Office of Economic Opportunity, [Occupational Employment Statistics](#)

Key Industries, Occupations, and Skills

Job Postings

From August 2019 to August 2020, employers from the manufacturing sector in the Greater Phoenix region posted more than 43,000 job openings online. The companies with the most advertisements were Honeywell, Northrop Grumman, Intel, and Boeing.

Table 13: Manufacturing Postings by Job Title:

Job Title	Job Postings
Sales Associates	451
Software Engineers	392
Project Managers	296
Systems Engineers	281
Technicians	260
Engineers	256
Machine Operators	220
Quality Engineers	183
Mechanical Engineers	178
Supervisors	172

Source: Economic Modeling Specialists International

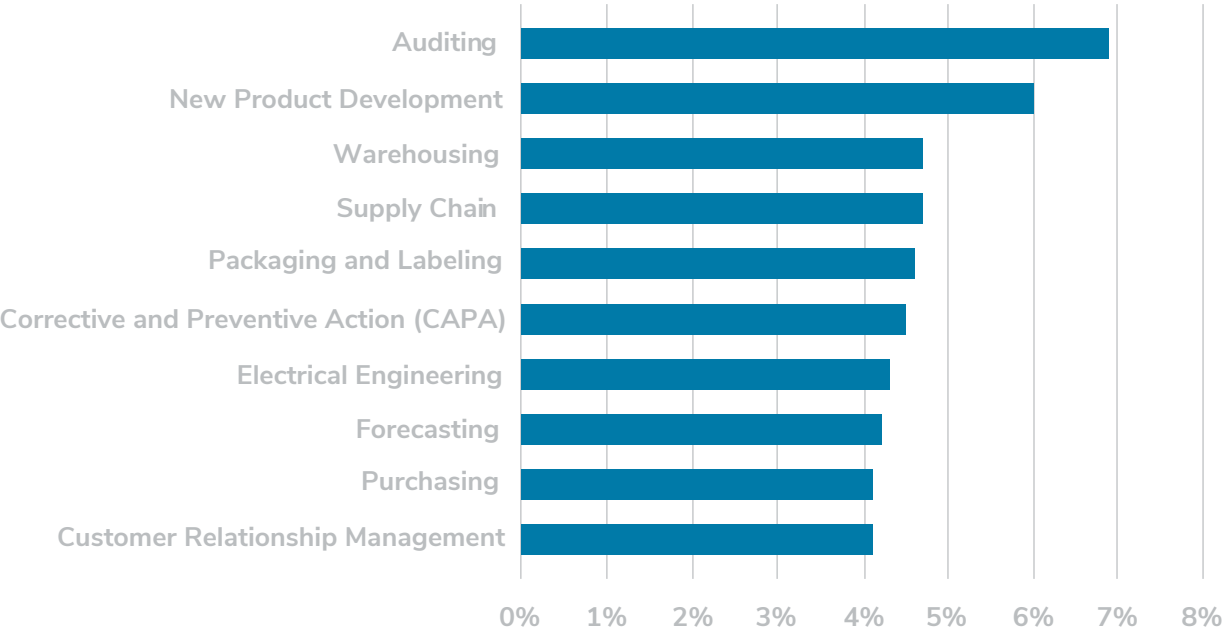
Since 2010, jobs in the manufacturing sector have increased by more than 18%.



Key Industries, Occupations, and Skills

The skills most often sought in manufacturing covered a spectrum of technical, academic, and interpersonal skills, but several of the most requested skills are common to business in general, more than directly to manufacturing.

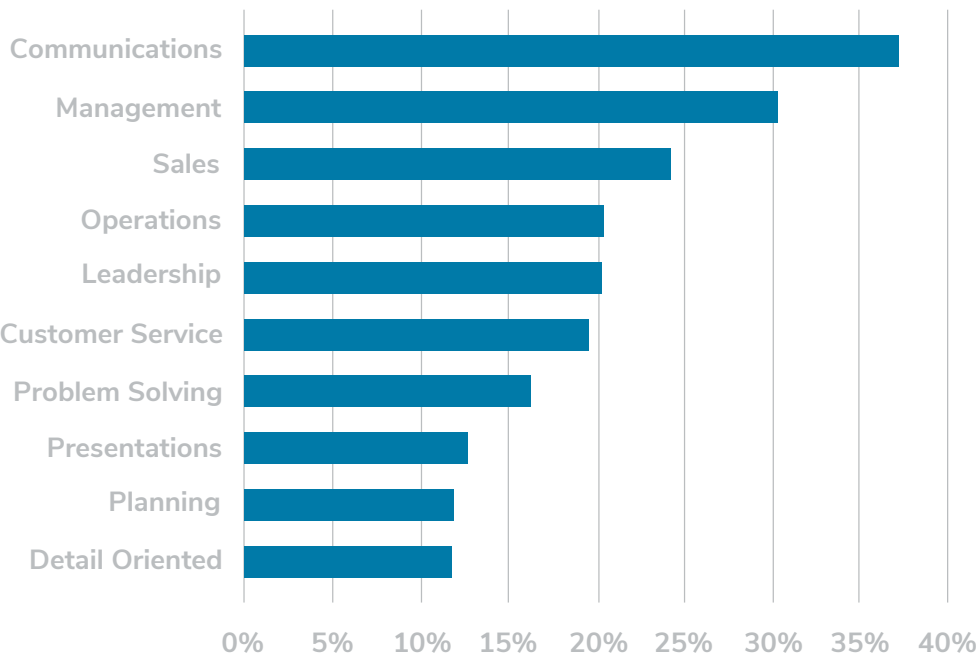
Chart 19: Technical Skills in Job Postings:



Source: Economic Modeling Specialists International

The following top employability skills were mentioned more frequently than any technical skills:

Chart 20: Employability Skills in Job Postings:



Source: Economic Modeling Specialists International

Trends to Watch

Adaptability and Responsiveness are Key to Survival in the 21st Century Economy

Honeywell, Urban Plough, Epic Manufacturing, and others pivot to production of COVID-19 related resources to fight the pandemic.

At the height of the pandemic, manufacturers and a spectrum of other businesses pivoted from normal operations, repurposing production, and research and development capabilities to support the fight against COVID-19.

Automotive manufacturers, including Ford, GM, Lamborghini, and Tesla quickly responded to the urgencies of the moment by converting automobile production facilities to construct much-needed ventilators.

Here in the Valley, the innovation and collaboration that define the region's business identity were evident in the distilleries that began making alcohol for hand sanitizer, the manufacturers who pivoted to production of personal protective equipment and hospital beds, the large-format printers who began making cloth masks, and even in a high school fabrication lab that produced face shields and ventilator parts.

Examples of Arizona firms who rose to the occasion and pivoted production are abundant.

- **Honeywell** added staff to facilitate production of six million high-filtration N95 face masks and personal protective equipment at its Phoenix Engines campus near Sky Harbor Airport, a facility that normally produces aircraft propulsion engines and auxiliary power units.
- In addition to making Dreamlifter, one of the world's largest air cargo transport planes available for emergency service, **Boeing** converted part of its Mesa plant to manufacturing thousands of reusable face shields for health care providers.
- An Arizona toy company that usually designs interactive learning environments for kids in libraries, **Burgeon Group**, leveraged its expertise to design and produce intubation shields to protect doctors as they administer life-saving measures.
- **Brooklyn Bedding** tweaked its unique vinyl mattress cover technology to begin producing hospital beds.
- **Urban Plough** usually makes furniture. Now, they are making intubation boxes based on the design of a Valley doctor and ramping up production of office furniture because of soaring demand.
- **Image Craft**, a large-format printing company, has begun making cloth masks and face shields to donate. Christine Sterling, spokesperson for the company, said they have donated the masks to the Phoenix Police Department, as well as the Phoenix Fire Department.
- **Epic Manufacturing** in Gilbert usually fabricates everything from custom tables to semiconductors. Now they're making face shields and intubation boxes.
- Early in the pandemic, **Blue Clover** distilleries, headquartered in Scottsdale, quickly got approval to produce hand sanitizer, and they received national recognition as one of the first distilleries to not only make the sanitizer but also donate to clinics and first responders in their community.

Trends to Watch

Arizona's Manufacturing Sector is Positioned for Even More Dynamic Growth

Recent economic development success in manufacturing, including expansions, relocations, and industry growth is not a fluke.

Regional economic success of the kind that Arizona has experienced in recent years does not happen accidentally. It is the result of intelligent, intentional, and targeted efforts on many levels to develop and attract the employers and jobs that the state sees as the building blocks of its aspirations. Herculean efforts by the Arizona Commerce Authority, City of Phoenix, Greater Phoenix Chamber, Greater Phoenix Economic Council, and other organizations protected our economic gains and positioned the regional economy for solid post-pandemic recovery.

One economic sector which has benefitted immensely from the region's economic trajectory is manufacturing. Arizonans build things. From body cameras to saddles and avionics to semiconductors, things get built in Arizona, and the Greater Phoenix region's regulatory environment, infrastructure, transportation network, growing supply chains, and access to qualified talent make the Valley a great base from which to succeed.

The manufacturing sector's contribution to the state's economy is roughly equivalent to that of construction, utilities, mining, and agriculture combined. Approximately one of every eleven dollars in Arizona's economy is produced by the manufacturing sector.

In recent years, several high-profile expansions and relocations of manufacturing firms have appeared in our headlines. The unprecedented challenges of 2020 did not stop the region's momentum. Manufacturers continue to relocate to the valley, find opportunities for growth, and expand existing operations here.



Recent economic development success in manufacturing, including expansions, relocations, and industry growth is not a fluke.

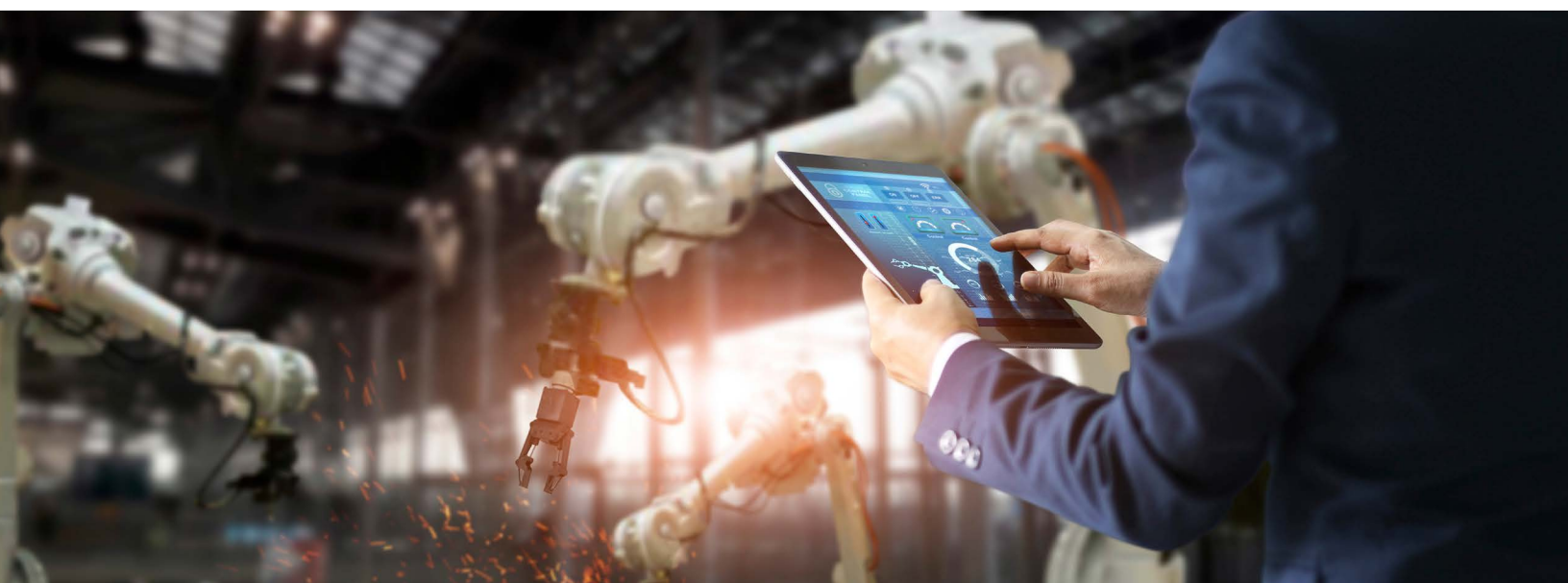


Trends to Watch

2020 Timeline of Manufacturing Growth in Arizona

- **January 31:** Northrop Grumman broke ground on its expanded satellite engineering and manufacturing operations, including a 100,000 square foot addition to its manufacturing facility in Gilbert and a new 120,000 square foot administrative and engineering building.
- **March 3:** Less than a year after Red Bull chose Glendale as its location for a new United States manufacturing facility, the company and its partners announced a major expansion in the form of a 700,000 square feet distribution center.
- **May 14:** Taiwan Semiconductor Manufacturing Company announced it has selected Arizona for its new U.S. advanced semiconductor factory. The project will create over 1,600 new high-tech jobs and generate thousands of additional jobs in the state for suppliers and other companies within the semiconductor industry.
- **June 4:** Benchmark Electronics, a global provider of engineering, design, and manufacturing services, held a virtual grand opening of its new advanced electronics manufacturing facility in Phoenix, where it produces high-reliability RF, photonics, and high-speed electronic systems in a wide range of market sectors, including aerospace and defense, computing, complex industrial, medical, and next-generation telecommunications.
- **August 14:** Commercial Metals Company announced an expansion of its Mesa steel mill operations that include a new facility and 185 additional jobs.

This rate of growth creates unique challenges on the human capital front. The market pressure on the available labor supply is significant. According to Economic Modeling Specialists International, there were more than 20,000 online job postings for production occupations in the Phoenix Metro on September 18, 2020. Companies like Honeywell Aerospace, Raytheon, Intel, Lucid, and Nesco are offering high-quality, high-wage career opportunities to Arizonans with the right skills.



Talent Development Ecosystem

Workforce Preparation

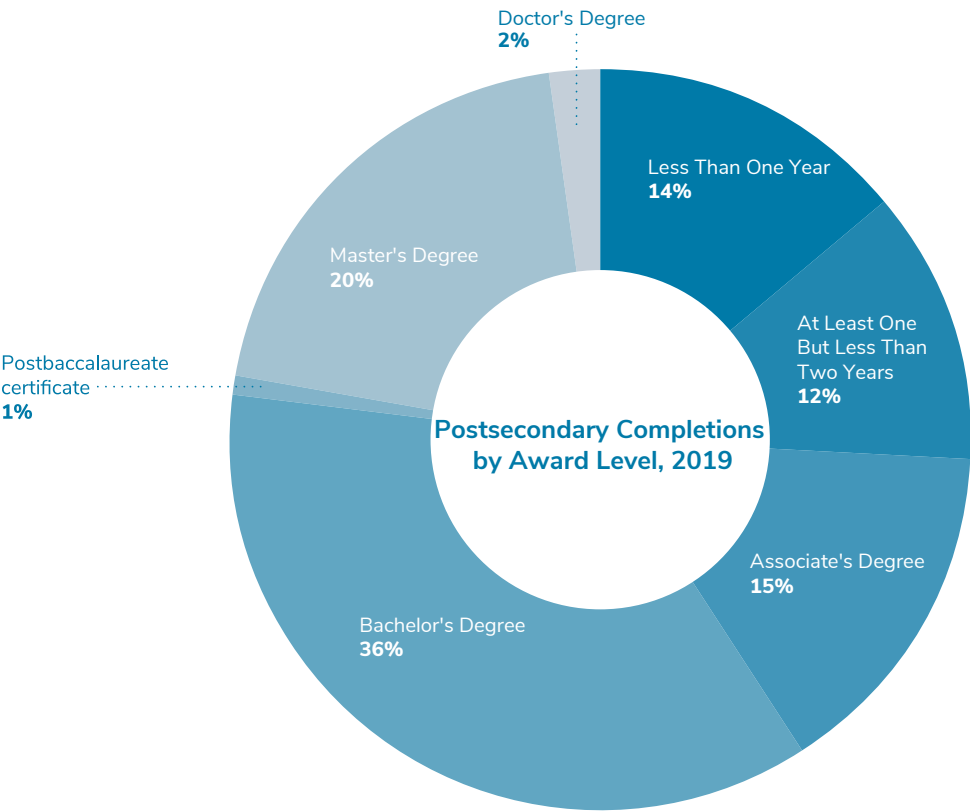
Introduction

Talent is the essence of business and the network of systems that educate, train, and develop the workforce of the Greater Phoenix region is one of its primary keys to success. Lifelong learning is a key concept when considering the nature of the 21st Century workforce and the schools, colleges, universities, training providers, adult education organizations, and workforce development systems in the Greater Phoenix region. This network is developing hundreds of thousands of individuals, empowering them to pursue their dreams, and connecting employers to the talent they need to succeed.

Colleges and Universities

In the 2018-2019 academic year, 50 institutions in the Greater Phoenix region granted 125,243 awards at levels ranging from one-year certificates to post-doctoral certificates. More than a quarter of those awarded were lower than an associate's degree, and roughly a third were bachelor's degrees.

Chart 21: Postsecondary Completions by Award Level, 2019:



Source: National Center for Education Statistics, *Integrated Postsecondary Educational Data System*

The four largest educational institutions in the region are responsible for 109,400 (88.0%) of the region's 125,243 completions. Of the 50 institutions considered in this report, 19 experienced a decline in the number of completions versus the previous year, and 31 saw an increase.

Talent Development Ecosystem

Trends in Postsecondary Outcomes in the Greater Phoenix Region

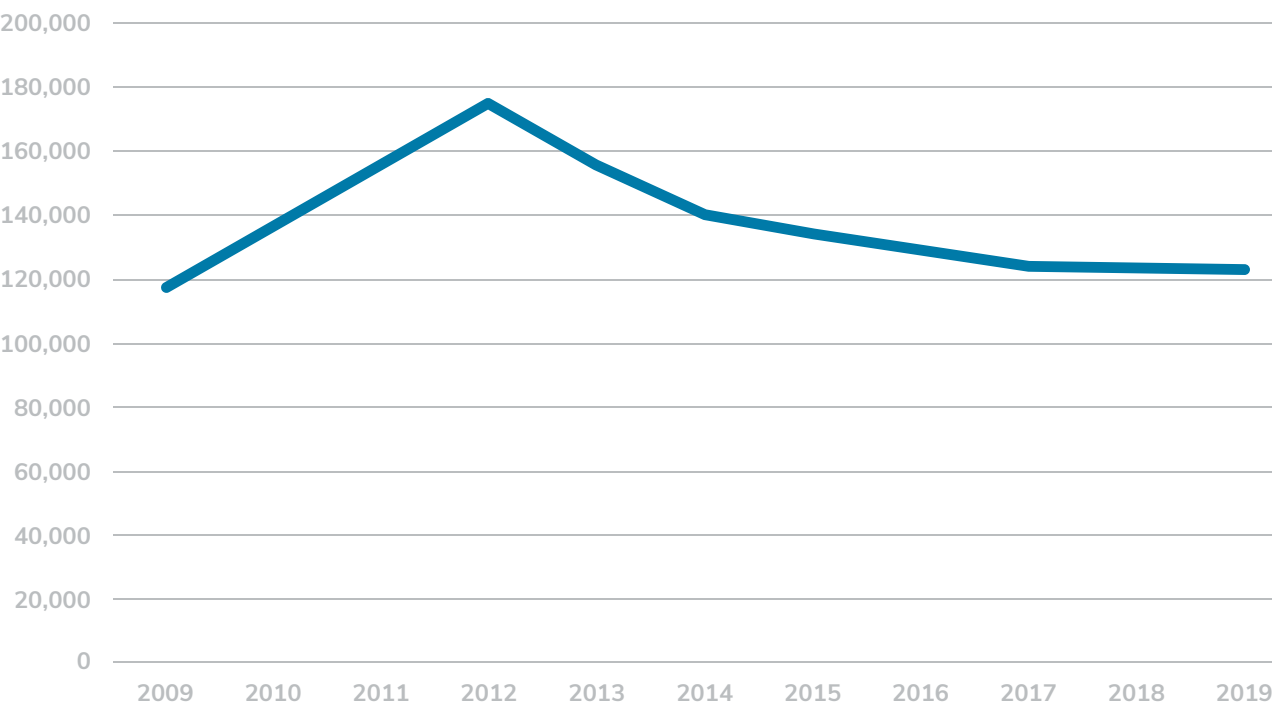
The total number of degrees and certificates awarded by these institutions has decreased dramatically in recent years. At the peak in 2012, Phoenix-area postsecondary institutions awarded 174,604 degrees and certificates. That value has declined steadily due to a number of factors that are particularly relevant to the workforce of the Greater Phoenix region.

Table 14: Total Postsecondary Completions by Year 2009-2019

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Awards	117,395	135,890	157,735	174,604	154,302	141,315	133,663	129,383	124,619	124,433	123,529

Source: National Center for Education Statistics, *Integrated Postsecondary Educational Data System*

Chart 22: Postsecondary Completions by Year, All Programs, All Award Levels:



Source: National Center for Education Statistics, *Integrated Postsecondary Educational Data System*



Talent Development Ecosystem

Table 15: Postsecondary Awards by Level 2012-2019:

There has been a shift from degrees to certificate programs. While the number of degrees has declined by more than 50,000 since 2012, the number of certificates awarded by the region's institutions has increased slightly.

Award Type	2012 Awards	2019 Awards	2012-2019 Change	2012-2019 % Change
Certificates	32,826	32,902	76	0.2%
All Degrees	142,870	90,625	(52,245)	-36.6%
Associate's Degrees	55,126	18,194	(36,932)	-67.0%
Bachelor's Degrees	53,185	44,204	(8,981)	-16.9%
Advanced Degrees	34,602	28,229	(6,373)	-18.4%
Total	175,696	123,529	(52,167)	-29.7%

Source: National Center for Education Statistics, *Integrated Postsecondary Educational Data System*

The decline in the number of degrees awarded can be observed across the spectrum of programs. Eight of the eleven largest programs have seen decreases in the number of awards since the 2012 peak.

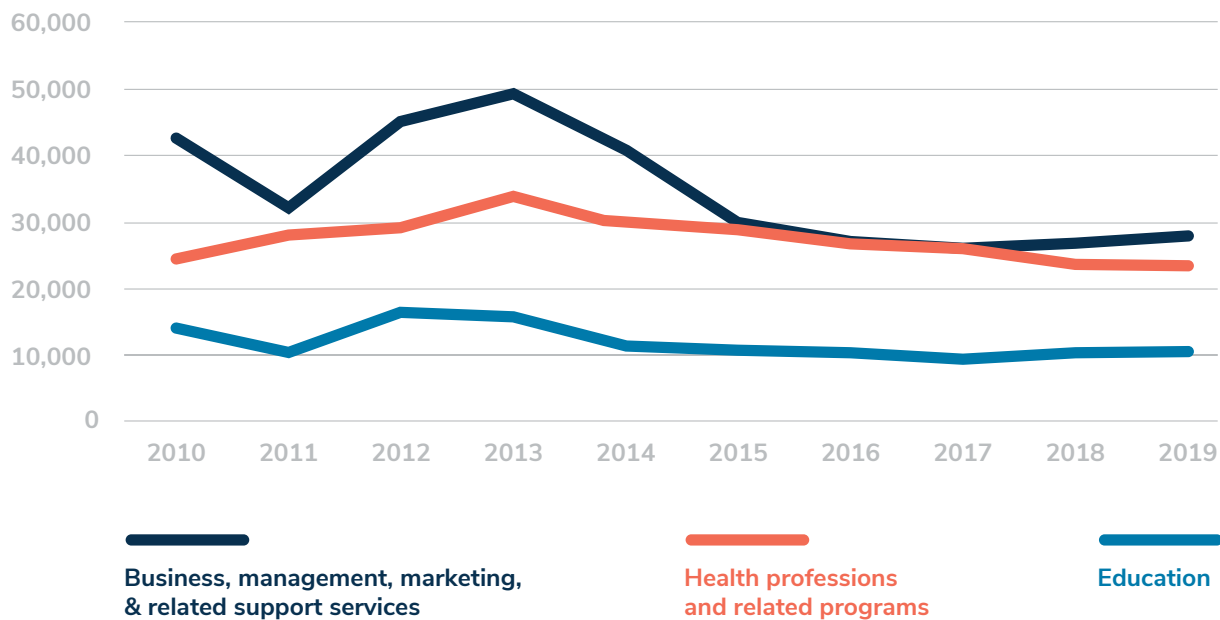
Table 16: Postsecondary Completions by Program, 2010-2019:

Description	Completions 2010	Completions 2019	Change
Business, Management, Marketing, and Related Support Services	49,890	28,268	-21,622
Health Professions and Related Programs	34,067	24,425	-9,642
Education	15,613	10,674	-4,939
Liberal Arts and Sciences, General Studies and Humanities	6,098	7,662	1,564
Visual and Performing Arts	6,145	7,619	1,474
Computer and Information Sciences and Support Services	9,476	6,041	-3,435
Homeland Security, Law Enforcement, Firefighting & Related Protective Services	10,531	5,584	-4,947
Public Administration and Social Service Professions	5,201	3,678	-1,523
Mechanic and Repair Technologies/Technicians	5,066	3,385	-1,681
Multi/Interdisciplinary Studies	9,889	3,361	-6,528
Engineering	1,414	3,108	1,694

Source: National Center for Education Statistics, *Integrated Postsecondary Educational Data System*

Talent Development Ecosystem

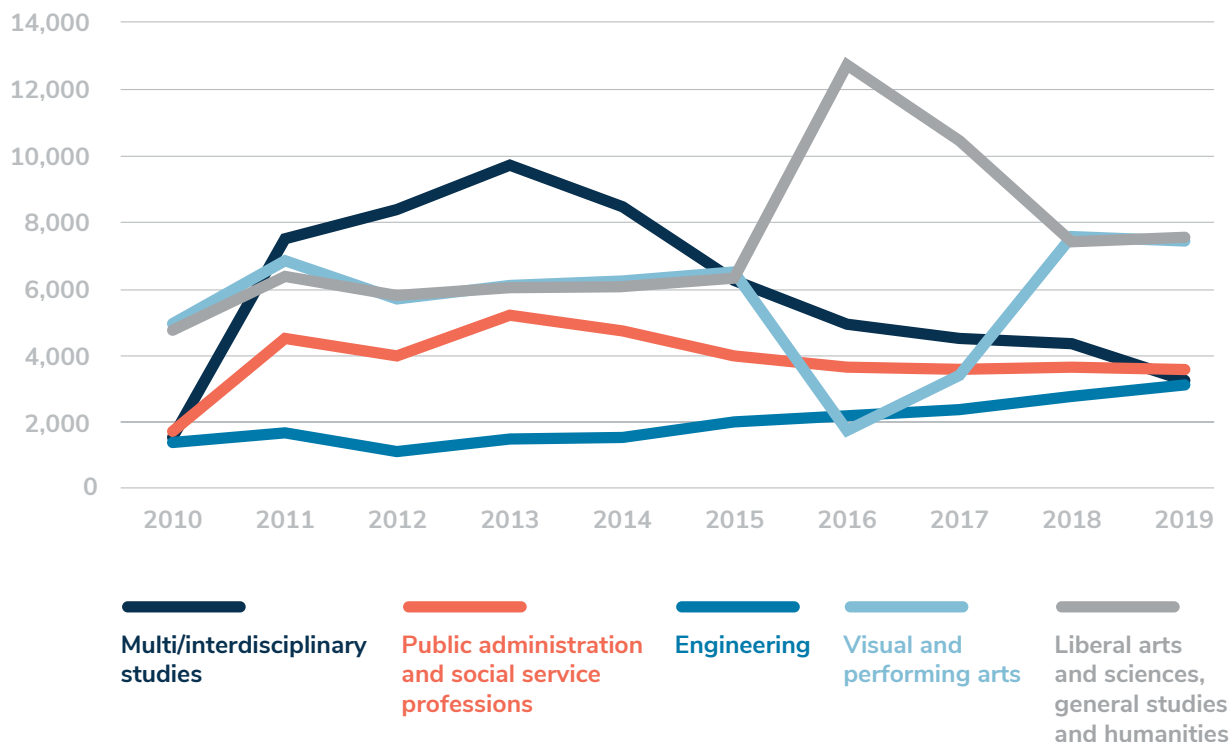
Chart 23: Top Three Postsecondary Program Categories by Total Completions, 2010-2019:



Source: National Center for Education Statistics, *Integrated Postsecondary Educational Data System*

The program categories that have seen the largest increases include two of the more universal or foundational programs, Liberal Arts and Sciences and Interdisciplinary Studies.

Chart 24: Postsecondary Program Categories with Largest Completion Increases, 2010-2019:



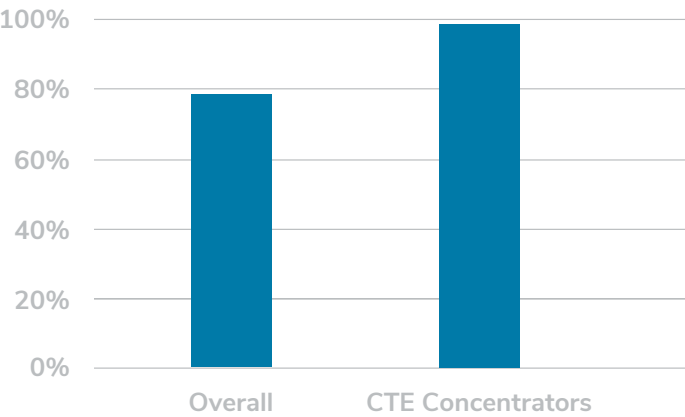
Source: National Center for Education Statistics, *Integrated Postsecondary Educational Data System*

Career and Technical Education

At the secondary level, the Greater Phoenix region’s talent development ecosystem includes a robust program of Career and Technical Education (CTE). These programs are designed to engage Arizona learners in relevant experiences leading to purposeful and economically viable careers.⁵ Programs ranging from aircraft mechanics to software design to marketing are preparing students for the world of work. Each program is built on a framework of competencies established in partnership with Arizona employers, and students demonstrate proficiency in these high value careers prior to graduation. While Arizona’s overall student body graduates high school at a rate of 78.7%, students who concentrate in these CTE courses, meaning they are enrolled in at least two sequential CTE programs of study, graduate at a rate of 98.7%. Additionally, 97% met performance goals for reading/language arts, and 89% met the goals for mathematics.

According to the Perkins Collaborative Resource Network, more than 20,000 Arizona students are CTE concentrators. The largest programs are those related to the health sciences, arts, audio-visual & communications and hospitality & tourism clusters.

Chart 25: Graduation Rates:



Source: Arizona Department of Education

These secondary-level educational experiences are often a first step into a long-term career pathway. As noted in the Greater Phoenix Chamber Foundation’s [ElevateEdAZ Education to Workforce Learning Pathways Landscape Analysis](#), “Student participation and completion of education-to-career experiences do not align consistently with labor market demand and earning potential.” Career and Technical Education is a critical component of the region’s talent development ecosystem, and increased participation in the career clusters that map to the region’s highest-priority sectors holds the potential to improve the region’s talent pipeline.

Table 17: Secondary CTE Enrollment by Program, Arizona, 2018-2019:

Career Cluster	Secondary Enrollment
Health Science	4,761
Arts, Audio Visual, and Communications	4,151
Hospitality and Tourism	3,215
Law, Public Safety, Corrections and Security	1,488
Agriculture, Food, and Natural Resources	1,466
Transportation, Distribution, and Logistics	1,426
Marketing, Sales, and Service	1,275
Science, Technology, Engineering, and Math	1,264
Education and Training	1,259
Architecture and Construction	1,159

Source: Arizona Department of Education, [Career and Technical Education Unit](#)

5 Arizona Department of Education

Talent Development Ecosystem

Arizona Education and Workforce Initiatives

Adult Education

Arizona has established a goal of 60% of the population holding a postsecondary credential of some kind by 2030 and is pursuing that goal under the [Achieve60AZ](#) initiative.⁶ The state and the region will struggle to reach that level without inroads into the adult populations with no college experience.

[Arizona Adult Education](#), a department of the Arizona Department of Education, provides high school equivalency and English language classes to adults in the Greater Phoenix region. The mission of Arizona Adult Education is to prepare learners for success in college, career and life.

Individuals 16 years of age and older who lack a high school diploma or have limited English proficiency can receive services via Arizona Adult Education. These services assist adults to become literate and obtain the knowledge and skills needed for employment and economic self-sufficiency.

Arizona Adult Education is committed to the concept of Integrated Education and Training (IET), a model in which basic education is accomplished in the pursuit of a high school equivalency credential and workforce preparation is accomplished in the pursuit of industry recognized certifications that map to high-priority careers within industries from the local labor market.

Licensing Reform

There are three components to be considered in any evaluation of a labor supply: incumbent workforce, emerging talent, and transitory workers. This report has examined the incumbent workforces in the region's priority sectors as well as the emerging

talent supply coming from the region's education and workforce development systems. Recently, Arizona has taken big steps toward optimizing the third factor, transitory workers.

In 2019, Arizona became the first state in the country to recognize professional licenses from other states without requirements for additional training or education. The initiative was designed to make it easier for people to move to Arizona and get a job if they already have a license in another state. According to Governor Doug Ducey's office, the hassle of retraining and relicensing prevents some people from moving and others from working in their chosen profession.⁷

Arizona's participation in the [Interstate Medical Licensure Compact](#) (IMLC) is another example of the state's efforts to streamline the professional licensure process and remove unnecessary burdens that keep qualified talent on the sidelines of the regional economy. In 2016, with support from the Greater Phoenix Chamber, Arizona joined the IMLC partnership, which now extends to 29 states, to provide an expedited licensing process for physicians interested in practicing in multiple states.

The new law is helping Arizona attract top-quality physicians to Arizona by letting "the world's most talented physicians know that Arizona is open for business," said Gov. Doug Ducey, who signed the legislation authorizing Arizona's participation in the IMLC. The Compact promises to streamline the licensing process for physicians wanting to practice in multiple states, in part by reducing redundant licensing requirements across states.⁸

⁶ [Achieve60AZ](#)

⁷ [azcentral: New Policy](#)

⁸ [Arizona Joins Interstate Medical Licensure Compact](#)

Talent Development Ecosystem

Profiles in Innovation and Collaboration

This report concludes by profiling four programs that illustrate the innovative and collaborative approach to talent development that is demanded by the realities of the 21st Century workplace.

Apprenti Arizona

Apprenti is an organization that partners with employers to create viable apprenticeship options for hard to fill roles in the IT sector, creating a pathway for prospective apprentices to get paid while completing on the job training and relevant certification and licensure. As of October 2020, Apprenti is in 16 US markets, including Arizona, and expanding rapidly. Among those that partner with Apprenti are Amazon, Microsoft, Wayfair, and JP Morgan Chase. Available roles within Apprenti include software developer and analyst, cybersecurity analyst, IT support, IT business analyst, cloud specialists, CRM/CMS developer, network and system administrator, network operations developer, and technical sales specialist.⁹

The mission and vision of Apprenti is to “bridge the tech talent and diversity gaps by adapting the time-tested model of apprenticeship to meet evolving workforce needs. Apprenti is igniting a new paradigm to develop untapped talent and strengthen the tech ecosystem nationwide.” Apprenti works to redefine what it takes to create a career in technology, while also seeking to create pathways for equitable access and representation in the fields of technology. This purpose is backed by the time-tested apprenticeship model, with its specialized formula seeking to bring a larger pool of smart and dedicated talent into the technology fields.

Apprenti Arizona was launched through a partnership with the Greater Phoenix Chamber Foundation. The Greater Phoenix region is an excellent market for

Apprenti, as Phoenix is one of the fastest growing cities for technology jobs. SRP piloted Apprenti Arizona as part of their redeployment efforts at the Navajo Generating Station in Page, AZ. Nine apprentices recently graduated from the program, moving into IT Business Analyst roles. Apprenti Arizona is planning to launch two apprenticeship cohorts in the spring of 2021 in cybersecurity and IT pathways.

Specialty Nurse Training

Eighteen institutions in the Greater Phoenix region, ranging from universities to community colleges to specialty training schools, offer programs of study within the registered nursing category. In the 2019 academic year, 7,709 awards were made in these programs, representing a steady decrease from a peak of 8,843 in 2016.¹⁰

This trend is daunting due to a projected 12% growth in employment of registered nurses (RN) from 2018 to 2028.¹¹ By comparison, the Bureau of Labor Statistics projects 7% growth across all other health care occupations. A 2017 report from the National Center for Health Workforce Analysis, estimated the number of RNs needed in the United States will rise steeply from 2.8 million to 3.6 million (28.4%) by 2030.

The Greater Phoenix region is projected to have a shortage of 28,000 registered nurses by 2025, according to a study by Becker’s Hospital Review. The most difficult to fill nursing positions are in specialized areas such as ICU and telemetry, among others. Nurses possessing a Bachelor of Nursing and a year or more of experience typically receive additional technical and on the job training before moving into these specialty positions, further increasing demand on existing nurses and clinical educators.

⁹ Apprenti Arizona

¹⁰ Integrated Postsecondary Educational Data System

¹¹ U.S. Bureau of Labor Statistics, Occupational Outlook Handbook: Registered Nurses

Talent Development Ecosystem

In response to this dynamic, regional hospitals established a partnership with Maricopa County Community College District (MCCCD) to collaborate on nursing and health care curriculum that aligns with the hospitals' needs. MCCCD quickly responded, working with the hospitals to develop curriculum, identify nurses qualified for the program, and launching its first cohort in the fall of 2019. This was supported by a \$5.8 million budget allocation from the State to create additional simulation facilities to expand and deliver these programs.¹²

This effort is estimated to produce up to 400 additional graduates by 2021, facilitate the launch of six new specialty nursing programs, and provide multiple career tracks for the region's incumbent nursing workforce. The potential for positively impacting the healthcare workforce in Arizona is remarkable.

Maricopa Community College District and the Intel Artificial Intelligence Partnership

Announced in June of 2020, Maricopa County Community College District (MCCCD) will be the first in the U.S. to train workers directly for the skills needed in the Artificial Intelligence (AI) Technology industries by offering an associate degree in AI. MCCCD launched two of the AI course offerings virtually in the fall of 2020, with plans to have all five of their AI course offerings live by spring of 2021. MCCCD is partnering with Intel and the Arizona Commerce Authority (ACA) on this new program.

Offering the programs through MCCCD creates

pathways and opportunities for a diverse range of potential students at an affordable community college price tag. Additionally, the partnership with Intel creates immediate value and ROI for students. The value of an AI program offered through a community college cannot be understated. Intel Executive Vice President, Gregory Bryant expressed that AI should be shaped and represented by many voices and experiences, explaining "Community Colleges offer the opportunity to expand and diversify AI since they attract a diverse array of students with a variety of backgrounds and expertise." With starting salaries in related occupations ranging from \$70,000-\$98,000, specialized AI training will make a significant impact on the lives of program graduates and the communities they come from.

MCCCD research indicates that Arizona will see an increase of 22.4% for AI jobs by 2029. Through their partnership with Intel and ACA, MCCCD Interim Chancellor, Dr. Steven R Gonzales, hopes to enable tens of thousands of MCCCD students to land jobs in AI, closing the opportunity gap and bringing additional diversity to the technology industry. With Arizona emerging as a growing technology and innovation hub, ACA President and CEO Sandra Watson believes the partnership with MCCCD is vital to ensure companies have access to talent with AI skills, as well as continuing Arizona's economic success.

12 MCCCD Launches Specialty Nursing Program



Talent Development Ecosystem

ASU and Dell Technologies High Performance Computing and Artificial Intelligence Center of Excellence

Dell currently lists ten locations for their **High Performance Computing (HPC) and Artificial Intelligence (AI) Centers of Excellence**. The HPC AI centers work to evaluate new technologies while sharing industry best practices. Dell refers to the HPC AI Centers of Excellence as hubs for innovation and expertise, as they provide resources and collaborate with developers and industry experts. One of these centers is located at ASU and provides custom research technology solutions across various disciplines.

The purpose of HPC AI Centers of Excellence is to create concentrated hubs for technology and research. The centers provide:

- High speed data analytics
- AI, machine, and deep learning
- Visualization, modeling, and simulation
- Performance analysis, optimization, and benchmarking
- System design, implementation, and operation

With a world facing constant change and ever evolving technology, HPC AI Centers of Excellence offer a proactive approach. Through supercomputing and networking with industry experts HPC AI Centers seek answers to current questions while predicting future issues and needs.

The Greater Phoenix region is home to many well-known tech companies and a booming local tech industry. With the Arizona tech industry seeing expansive job growth, as well as higher than industry average salaries, having supporting resources and accommodations is vital to continue the economic development. The HPC AI Center at ASU offers its cloud-based storage and computing services to researchers at ASU, as well as outside agencies, providing a limited and elite resource. The HPC AI Center of Excellence at ASU further enables Arizona and the Greater Phoenix region to continue to develop and be known as a hub for technology jobs and industry innovation.

Conclusion

The Greater Phoenix Chamber Foundation is acutely aware of the importance of workforce issues to regional employers, regional economic success, and the lives of individuals in the region. Bringing the voice of the business community to the conversation about how best to invest in our human capital will make the system stronger, more relevant, and more fundamentally aligned to real, high-quality opportunities in the 21st Century workplace.



Appendix One

Occupations and Skills Profiles by Projected Change, Maricopa County, 2018-2028

Occupation	Projected Change	% Change	Median Wages	Skills	Work Activities
Personal Care Aides	25,941	66.9%	\$23,826	Service Orientation Social Perceptiveness Active Listening	Assisting and Caring for Others Documenting/Recording Information Communicating with Supervisors, Peers or Subordinates
Registered Nurses ¹³	18,224	45.4%	\$78,535	Active Listening Social Perceptiveness Service Orientation	Assisting and Caring for Others Documenting/Recording Information Getting Information
Laborers and Freight, Stock, and Material Movers, Hand	13,352	35.7%	\$28,418	Skills Profile being updated	Performing General Physical Activities Handling and Moving Objects Identifying Objects, Actions and Events
Customer Service	13,249	16.2%	\$33,859	Active Listening Speaking Service Orientation	Getting Information Interacting with Computers Communicating with Persons Outside Organization
Combined Food Preparation and Service Workers, Fast Food	11,248	26.8%	\$23,009	Active Listening Service Orientation Speaking	Getting Information Performing for or Working Directly with the Public Communicating with Supervisors, Peers or Subordinates
Home Health Aides	10,990	73.7%	\$24,409	Active Listening Service Orientation Social Perceptiveness	Assisting and Caring for Others Getting Information Communicating with Supervisors, Peers or Subordinates
General and Operations Managers	8,741	21.8%	\$91,059	Active Listening Coordination Monitoring	Making Decisions and Solving Problems Communicating with Supervisors, Peers or Subordinates Getting Information

13 For six occupations, median wages were not available in the OEO files. For these occupations, median wage estimates from Economic Modeling Specialists were substituted. The skills profiles of four occupations are currently being updated by the Employment and Training Administration.

Appendix One

Occupations and Skills Profiles by Projected Change, Maricopa County, 2018-2028

Occupation	Projected Change	% Change	Median Wages	Skills	Work Activities
Medical Assistants	6,435	48.9%	\$33,637	Speaking Active Listening Reading Comprehension	Assisting and Caring for Others Documenting/Recording Information Getting Information
Janitors and Cleaners	6,158	22.4%	\$24,147	Active Listening	Performing General Physical Activities Handling and Moving Objects Inspecting Equipment, Structures or Material
Software Developers, Applications ¹³	5,982	44.7%	\$99,859	Reading Comprehension Active Listening Critical Thinking	Analyze project data to determine specifications or requirements Modify software programs to improve performance Supervise information technology personnel
Heavy and Tractor-Trailer Truck Drivers	5,121	24.9%	\$43,212	Operation and Control Operation Monitoring Time Management	Operating Vehicles, Mechanized Devices or Equipment Inspecting Equipment, Structures or Material Getting Information
Waiters and Waitresses	5,058	15.2%	\$23,659	Active Listening Service Orientation Speaking	Getting Information Performing for or Working Directly with the Public Communicating with Supervisors, Peers or Subordinates
Cooks, Restaurant	4,849	30.4%	\$28,308	Monitoring Active Listening Coordination	Getting Information Communicating with Supervisors, Peers and Subordinates Monitor Processes, Materials or Surroundings
Market Research Analysts and Marketing Specialists	4,616	39.0%	\$71,966	Critical Thinking Reading Comprehension Writing	Getting Information Analyzing Data or Information Interpreting the Meaning of Information for Others

¹³ For six occupations, median wages were not available in the OEO files. For these occupations, median wage estimates from Economic Modeling Specialists were substituted. The skills profiles of four occupations are currently being updated by the Employment and Training Administration.

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Occupations and Skills Profiles by Projected Change, Maricopa County, 2018-2028

Occupation	Projected Change	% Change	Median Wages	Skills	Work Activities
Nursing Assistants ¹³	4,548	44.3%	\$33,271	Service Orientation Active Listening Social Perceptiveness	Assisting and Caring for Others Getting Information Communicating with Supervisors, Peers or Subordinates
Office Clerks, General	4,347	11.8%	\$34,325	Active Listening Reading Comprehension Speaking	Interacting with Computers Communicating with Supervisors, Peers or Subordinates Getting Information
Computer User Support Specialists ¹³	4,172	29.4%	\$49,128	Active Listening Reading Comprehension Speaking	Interacting with Computers Getting Information Communicating with Supervisors, Peers or Subordinates
First-Line Supervisors- Office and Administrative Support	4,070	14.5%	\$51,995	Active Listening Coordination Monitoring	Interacting with Computers Getting Information Communicating with Supervisors, Peers or Subordinates
Light Truck or Delivery Services Drivers	4,038	31.8%	\$35,028	Operation and Control Active Listening Speaking	Operating Vehicles, Mechanized Devices or Equipment Getting Information Handling and Moving Objects
Landscaping and Groundskeeping Workers	4,021	20.1%	\$27,473	Operation and Control	Handling and Moving Objects Controlling Machines and Processes Establishing and Maintaining Interpersonal Relationships
Stock Clerks and Order Fillers	3,891	12.6%	\$29,301	Speaking Active Listening	Communicating with Supervisors, Peers or Subordinates Handling and Moving Objects Getting Information
Medical Secretaries	3,878	43.2%	\$36,344	Speaking Active Listening Service Orientation	Interacting with Others Getting Information Documenting/Recording Information

¹³ For six occupations, median wages were not available in the OEO files. For these occupations, median wage estimates from Economic Modeling Specialists were substituted. The skills profiles of four occupations are currently being updated by the Employment and Training Administration.

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Occupations and Skills Profiles by Projected Change, Maricopa County, 2018-2028

Occupation	Projected Change	% Change	Median Wages	Skills	Work Activities
Accountants and Auditors	3,769	21.2%	\$65,996	Active Listening Reading Comprehension Critical Thinking	Getting Information Communicating with Supervisors, Peers and Subordinates Interacting with Computers
Construction Laborers	3,583	18.3%	\$35,250	Speaking Active Listening Coordination	Inspecting Equipment, Structures or Material Getting Information Monitor Processes, Materials or Surroundings
Receptionists and Information Clerks	3,556	21.5%	\$29,490	Active Listening Speaking Service Orientation	Interacting with Computers Performing Administrative Activities Performing or Working Directly with the Public
Teacher Assistants	3,458	20.8%	\$24,975		Skills Profile being updated
Industrial Truck and Tractor Operators	3,451	38.2%	\$35,140	Operation and Control Operation Monitoring Coordination	Operating Vehicles, Mechanized Devices or Equipment Inspecting Equipment, Structures or Material Communicating with Supervisors, Peers or Subordinates
Maintenance and Repair Workers, General	3,434	18.5%	\$36,070	Equipment Maintenance Repairing Troubleshooting	Inspecting Equipment, Structures or Material Handling and Moving Objects Performing General Physical Activities
Financial Managers	3,426	35.0%	\$110,430	Active Listening Critical Thinking Monitoring	Interacting with Computers Communicating with Supervisors, Peers or Subordinates Coaching and Developing Others
Security Guards	3,341	18.0%	\$28,020	Active Listening Monitoring Speaking	Getting Information Communicating with Supervisors, Peers or Subordinates Documenting/Recording Information

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Occupations and Skills Profiles by Projected Change, Maricopa County, 2018-2028

Occupation	Projected Change	% Change	Median Wages	Skills	Work Activities
Billing and Posting Clerks	3,063	33.9%	\$37,790	Active Listening Speaking Reading Comprehension	Interacting with Computers Processing Information Communicating with Supervisors, Peers or Subordinates
First-Line Supervisors-Food Preparation and Serving	3,008	20.2%	\$32,830	Coordination Monitoring Speaking	Getting Information Training and Teaching Others Making Decisions and Solving Problems
First-Line Supervisors-Construction Trades/Extraction	2,847	22.4%	\$62,710	Coordination Active Listening Speaking	Communicating with Supervisors, Peers or Subordinates Making Decisions and Solving Problems Inspecting Equipment, Structures or Material
Medical and Health Services Managers	2,753	46.7%	\$103,960	Speaking Critical Thinking Active Listening	Communicating with Supervisors, Peers or Subordinates Documenting/Recording Information Evaluating Information to Determine Compliance with Standards
Management Analysts	2,743	24.2%	\$76,760	Active Listening Critical Thinking Reading Comprehension	Provide Consultation and Advice to Others Making Decisions and Solving Problems Analyzing Data or Information
Elementary School Teachers	2,615	18.4%	\$44,780	Instructing Speaking Learning Strategies	Organizing, Planning and Prioritizing Work Getting Information Establishing and Maintaining Interpersonal Relationships
Loan Officers	2,614	32.0%	\$52,660	Active Listening Speaking Judgment and Decision Making	Getting Information Evaluating Information to Determine Compliance with Standards

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Occupations and Skills Profiles by Projected Change, Maricopa County, 2018-2028

Occupation	Projected Change	% Change	Median Wages	Skills	Work Activities
Childcare Workers	2,588	21.6%	\$24,890	Monitoring Service Orientation Social Perceptiveness	Assisting and Caring for Others Making Decisions and Solving Problems Thinking Creatively
Computer Systems Analysts	2,545	25.4%	\$89,290	Active Listening Critical Thinking Reading Comprehension	Interacting with Computers Getting Information Problem Sensitivity
Social and Human Service Assistants	2,532	45.9%	\$32,030	Active Listening Social Perceptiveness Speaking	Communicating with Supervisors, Peers or Subordinates Documenting/Recording Information Getting Information
Carpenters	2,348	17.3%	\$43,240	Active Listening Monitoring Speaking	Performing General Physical Activities Getting Information Handling and Moving Objects
Sales	2,336	13.0%	\$55,040	Active Listening Speaking Negotiation	Selling or Influencing Others Getting Information Making Decisions and Solving Problems
Loan Interviewers and Clerks	2,325	34.1%	\$41,910	Active Listening Speaking Reading Comprehension	Interacting with Computers Getting Information Performing for or Working Directly with the Public
Software Developers, Systems Software	2,251	27.2%	\$99,859	Reading Comprehension Active Listening Critical Thinking	Analyze project data to determine specifications or requirements Modify software programs to improve performance Supervise information technology personnel
Electricians	2,246	21.3%	\$48,300	Troubleshooting Repairing Active Listening	Getting Information Identifying Objects, Actions and Events Making Decisions and Solving Problems

Appendix One

Occupations and Skills Profiles by Projected Change, Maricopa County, 2018-2028

Occupation	Projected Change	% Change	Median Wages	Skills	Work Activities
Food Preparation Workers	2,240	20.5%	\$25,080	Active Listening Coordination Service Orientation	Judging the Qualities of Things, Services or People Communicating with Supervisors, Peers or Subordinates Establishing and Maintaining Interpersonal Relationships
Insurance Sales Agents	2,225	32.5%	\$50,060	Reading Comprehension Active Listening Speaking	Establishing and Maintaining Interpersonal Relationships Getting Information Selling or Influencing Others
Secondary School Teachers	2,202	17.3%	\$48,490	Instructing Speaking Active Listening	Organizing, Planning and Prioritizing Work Thinking Creatively Training and Teaching Others
Human Resources Specialists	2,024	22.9%	\$57,770	Speaking Active Listening Reading Comprehension	Communicating with Supervisors, Peers or Subordinates Interacting with Computers Documenting/Recording Information
Licensed Practical and Licensed Vocational Nurses	1,963	40.3%	\$54,320	Service Orientation Active Listening Coordination	Assisting and Caring for Others Documenting/Recording Information Communicating with Supervisors, Peers or Subordinates
Plumbers, Pipefitters, and Steamfitters	1,948	25.0%	\$46,790	Critical Thinking Active Listening Judgment and Decision Making	Performing General Physical Activities Getting Information Inspecting Equipment, Structures or Material
Medical Records and Health Information Technicians	1,872	40.2%	\$42,673		Skills Profile being updated
Preschool Teachers, Except Special Education	1,871	35.2%	\$28,850	Instructing Speaking Active Listening	Assisting and Caring for Others Establishing and Maintaining Interpersonal Relationships Getting Information

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Occupations and Skills Profiles by Projected Change, Maricopa County, 2018-2028

Occupation	Projected Change	% Change	Median Wages	Skills	Work Activities
Shipping, Receiving, and Traffic Clerks	1,846	23.0%	\$32,710	Speaking Active Listening Reading Comprehension	Getting Information Communicating with Supervisors, Peers or Subordinates Documenting/Recording Information
Taxi Drivers and Chauffeurs ¹³	1,843	30.6%	\$27,686		Skills Profile being updated
Computer and Information Systems Managers	1,776	27.5%	\$135,910	Critical Thinking Active Listening Reading Comprehension	Interacting with Computers Making Decisions and Solving Problems Getting Information
Training and Development Specialists	1,772	25.9%	\$55,800	Instructing Learning Strategies Active Listening	Training and Teaching Others Getting Information Establishing and Maintaining Interpersonal Relationships
Bookkeeping, Accounting, and Auditing Clerks	1,772	9.5%	\$40,910	Mathematics Active Listening Critical Thinking	Interacting with Computers Getting Information Documenting/Recording Information
Sales Managers	1,742	18.1%	\$106,170	Persuasion Active Listening Speaking	Selling or Influencing Others Communicating with Supervisors, Peers or Subordinates Establishing and Maintaining Interpersonal Relationships
Pharmacy Technicians	1,709	27.0%	\$35,530	Active Listening Reading Comprehension Speaking	Getting Information Interacting with Computers Performing for or Working Directly with the Public
Paralegals and Legal Assistants	1,684	28.6%	\$50,210	Reading Comprehension Active Listening Speaking	Interacting with Computers Communicating with Supervisors, Peers or Subordinates Evaluating Information to Determine Compliance with Standards

13 For six occupations, median wages were not available in the OEO files. For these occupations, median wage estimates from Economic Modeling Specialists were substituted. The skills profiles of four occupations are currently being updated by the Employment and Training Administration.

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Occupations and Skills Profiles by Projected Change, Maricopa County, 2018-2028

Occupation	Projected Change	% Change	Median Wages	Skills	Work Activities
Production, Planning, and Expediting Clerks	1,680	25.5%	\$45,400	Active Listening Reading Comprehension Speaking	Getting Information Communicating with Supervisors, Peers or Subordinates Interacting with Computers
Dental Assistants	1,671	33.9%	\$42,390	Active Listening Reading Comprehension Speaking	Assisting and Caring for Others Evaluating Information to Determine Compliance with Standards Getting Information
Operations Research Analysts	1,662	51.3%	\$85,710	Mathematics Complex Problem Solving Critical Thinking	Interacting with Computers Analyzing Data or Information Making Decisions and Solving Problems
Insurance Claims and Policy Processing Clerks	1,662	27.0%	\$50,060	Active Listening Reading Comprehension Speaking	Interacting with Computers Getting Information Communicating with Supervisors, Peers or Subordinates
Securities, Commodities, and Financial Services Sales Agents	1,620	23.8%	\$46,620	Critical Thinking Active Listening Reading Comprehension	Interacting with Computers Getting Information Establishing and Maintaining Interpersonal Relationships
Air Conditioning, Refrigeration, Heating Mechanics and Installers	1,620	24.8%	\$45,280	Troubleshooting Equipment Maintenance Repairing	Repairing and Maintaining Mechanical Equipment Getting Information Making Decisions and Solving Problems
Administrative Services Managers	1,614	24.4%	\$84,390	Active Listening Reading Comprehension Time management	Getting Information Communicating with Supervisors, Peers or Subordinates Organizing, Planning and Prioritizing Work
Maids and Housekeeping Cleaners	1,591	12.3%	\$24,790	Service Orientation Coordination Time Management	Performing General Physical Activities Assisting and Caring for Others Communicating with Supervisors, Peers or Subordinates

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Occupations and Skills Profiles by Projected Change, Maricopa County, 2018-2028

Occupation	Projected Change	% Change	Median Wages	Skills	Work Activities
Lawyers	1,574	17.0%	\$106,330	Active Listening Speaking Reading Comprehension	Getting Information Evaluating Information to Determine Compliance with Standards Making Decisions and Solving Problems
Claims Adjusters, Examiners, and Investigators	1,557	17.1%	\$59,140	Critical Thinking Reading Comprehension Active Listening	Interacting with Computers Getting Information Making Decisions and Solving Problems
Physical Therapists	1,540	49.7%	\$88,840	Active Listening Critical Thinking Reading Comprehension	Assisting and Caring for Others Documenting/Recording Information Making Decisions and Solving Problems
Construction Managers	1,519	18.7%	\$90,890	Coordination Management of Personnel Resources Active Listening	Getting Information Scheduling Work and Activities Communicating with Supervisors, Peers or Subordinates
Middle School Teachers	1,407	18.6%	\$44,210	Instructing Speaking Active Listening	Coaching and Developing Others Establishing and Maintaining Interpersonal Relationships Communicating with Supervisors, Peers or Subordinates
Educational, Guidance, School, and Vocational Counselors	1,357	23.9%	\$50,140	Active Listening Social Perceptiveness Speaking	Assisting and Caring for Others Establishing and Maintaining Interpersonal Relationships Getting Information
Nurse Practitioners	1,308	56.9%	\$113,840	Active Learning Active Listening Critical Thinking	Assisting and Caring for Others Getting Information Documenting/Recording Information

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Occupations and Skills Profiles by Projected Change, Maricopa County, 2018-2028

Occupation	Projected Change	% Change	Median Wages	Skills	Work Activities
First-Line Supervisors- Production and Operation	1,308	17.8%	\$60,300	Active Listening Management of Personnel	Making Decisions and Solving Problems Getting Information Communicating with Supervisors, Peers or Subordinates
First-Line Supervisors of Personal Service Workers	1,306	26.1%	\$36,950	Active Listening Critical Thinking Management of Personnel Resources	Making Decisions and Solving Problems Communicating with Supervisors, Peers or Subordinates Getting Information
Computer Network Support Specialists	1,302	25.3%	\$52,150	Critical Thinking Active Listening Judgment and Decision Making	Interacting with Computers Updating and Using Relevant Knowledge Getting Information
Hosts/Hostesses, Restaurant, Lounge, and Coffee Shop	1,280	19.8%	\$24,710	Active Listening Speaking Service Orientation	Performing for or Working Directly with the Public Communicating with Supervisors, Peers or Subordinates Establishing and Maintaining Interpersonal Relationships
Marketing Managers	1,275	22.9%	\$108,980	Active Listening Active Learning Critical Thinking	Communicating with Supervisors, Peers or Subordinates Establishing and Maintaining Interpersonal Relationships Interacting with Computers
Substance Abuse, Behavioral Disorder, & Mental Counselors	1,273	54.6%	\$43,110	Active Listening Social Perceptiveness Speaking	Communicating with Supervisors, Peers or Subordinates Establishing and Maintaining Interpersonal Relationships Documenting/Recording Information
Bus Drivers, Transit and Intercity	1,259	41.7%	\$39,720	Operation and Control Operation Monitoring Active Listening	Operating Vehicles, Mechanized Devices or Equipment Performing for or Working Directly with the Public Inspecting Equipment, Structures or Material

Appendix One

Occupations and Skills Profiles by Projected Change, Maricopa County, 2018-2028

Occupation	Projected Change	% Change	Median Wages	Skills	Work Activities
Cooks, Institution and Cafeteria	1,254	32.8%	\$27,860	Judgment and Decision Making Monitoring Operation Monitoring	Getting Information Communicating with Supervisors, Peers or Subordinates Inspecting Equipment, Structures or Material
Bartenders	1,252	15.3%	\$29,620	Active Listening Service Orientation Social Perceptiveness	Performing for or Working Directly with the Public Establishing and Maintaining Interpersonal Relationships Estimating the Quantifiable Characteristics of Products, Events or Information
Network and Computer Systems Administrators	1,235	19.8%	\$79,800	Critical Thinking Judgment and Decision Making Reading Comprehension	Interacting with Computers Making Decisions and Solving Problems Updating and Using Relevant Knowledge
Cement Masons and Concrete Finishers	1,211	22.2%	\$42,050	Monitoring Coordination Quality Control Analysis	Handling and Moving Objects Inspecting Equipment, Structures or Material Getting Information
Hairdressers, Hairstylists, and Cosmetologists	1,167	10.4%	\$26,340	Active Listening Speaking Service Orientation	Performing for or Working Directly with the Public Establishing and Maintaining Interpersonal Relationships Selling or Influencing Others
Respiratory Therapists	1,163	59.2%	\$59,360	Active Listening Critical Thinking Monitoring	Documenting/Recording Information Assisting and Caring for Others Getting Information
First-Line Supervisors-Mechanics, Installers, Repairers	1,162	15.3%	\$62,110	Management of Personnel Resources Monitoring Critical Thinking	Inspecting Equipment, Structures or Material Getting Information Making Decisions and Solving Problems
Coaches and Scouts	1,145	21.4%	\$39,100	Instructing Speaking Learning Strategies	Establishing and Maintaining Interpersonal Relationships Coaching and Developing Others Making Decisions and Solving Problems

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Occupations and Skills Profiles by Projected Change, Maricopa County, 2018-2028

Occupation	Projected Change	% Change	Median Wages	Skills	Work Activities
Dishwashers	1,145	15.6%	\$24,650	Active Listening	Communicating with Supervisors, Peers or Subordinates Handling and Moving Objects Performing General Physical Activities
Information Security Analysts	1,130	54.0%	\$96,700	Reading Comprehension Critical Thinking Active Listening	Interacting with Computers Getting Information Identifying Objects, Actions and Events
Counter Attendants, Cafeteria, Food Concession, Coffee Shop	1,102	11.7%	\$24,370	Service Orientation Coordination	Performing for or Working Directly with the Public Getting Information Identifying Objects, Actions and Events
Interpreters and Translators	1,095	47.4%	\$43,840	Active Listening Speaking Reading Comprehension	Interpreting the Meaning of Information for Others Getting Information Performing for or Working Directly with the Public
Financial Analysts	1,090	22.1%	\$73,450		Skills Profile being updated



GREATER PHOENIX CHAMBER
FOUNDATION

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