

3. Analysis

b. An analysis of the knowledge and skills needed to meet the employment needs of the employers in the region, including employment needs in in-demand industry sectors and occupations (an existing analysis may be used, per sec. 108(c) of WIOA).

The ARIZONA@WORK Pima County One-Stop System’s vision is “connecting qualified workers with quality jobs.” The significance of that vision is that Tucson’s ability to attract quality jobs depends in part on the availability of a labor pool of qualified workers. This is consistent with the Pima County Comprehensive Plan [Pima Prospers](#).

- 6.4 Goal 1: Develop our workforce to meet the business needs of our economy;
- State Goal 3. Grow and Develop a Skilled Workforce; and
- State Strategy 7. Identify and Respond to High–Demand and Growing Industry/Employment Sectors at Local and Statewide Levels.

One of the first priorities for employers is to find people who understand the need to be punctual, communicate with the supervisor and team members, and dress appropriately.

Appropriate use of communication tools is also a growing need, as these tools become both more personalized and more pervasive.

Employers have identified a variety of skill set gaps in today’s workforce such as problem-solving, listening skills, and lack of teamwork. The most critical skill gap is found in the hard working person who lacks basic education skills, a high school diploma and/or is Limited English proficient. Lack of basic skills makes it all the more difficult for these people to overcome new gaps created by innovation and the rapidly changing technology.

Innovation will continue to create additional skill gaps in the medical, manufacturing and production industries as well as information technology (IT) and communications.

The One-Stop often trains and places people into positions that are one of the first rungs of a career ladder. A traditional example is nursing, where a person can be trained to be a Certified Nursing Assistant, and then with additional education and experience they may progress to a Patient Care Technician, Licensed Practical Nurse and/or Registered Nurse.

In construction trades, a person can start as a laborer, move to a more specialized helper position, then enter an apprenticeship program, and finally become a journeyman. In each case the ladder is several years in length, with wages doubling or tripling by the end.

Southern Arizona’s aerospace and defense and other high-tech industries suffer shortages of skilled workers in IT, engineering and technical-management occupations. In aerospace, the One-Stop system, JTED, and Pima Community College (PCC) set up a program for high school students to gain dual credit in the aviation program. More recently, PCC

developed a short-term program to help experienced aerospace workers gain Federal Aviation Agency (FAA) certifications.

In 2010 local employers submitted H1-B visa applications for 71 engineering jobs, 97 computer positions and 15 engineering or high-tech management positions. In Workforce Needs Surveys conducted by Pima County for the past three years, 27 companies identified engineers among their five hardest-to-fill jobs, along with 25 listed IT occupations such as software engineers and security analysts. In many cases, when demand is met, it is done through external employee recruitment. Greater focus must go toward developing highly skilled, homegrown talent.

Pima County is home to the University of Arizona (UA), a top 20 U.S. public research university; PCC - the nation's eighth largest; a branch of Northern Arizona University; and 40+ proprietary post-secondary schools.

An estimated 70,000 individuals work in high-tech occupations, one third of these being engineering/engineering technicians. Notwithstanding these assets, overall educational attainment rates lag the nation, indicating uneven access to the region's educational opportunities.

The region has a higher concentration of people with less than a high school diploma and a smaller share with a Bachelor's Degree, compared to both Arizona and the U.S. Statewide. Arizona ranks 35th in the nation on percentage of working-age adults with a Bachelor's Degree, and a recent study for the Arizona Governor's P-20 council showed that educational attainment is much lower among those entering the workforce than those about to retire. (National Center for Higher Education Management Systems, Feasibility and Demand Study for the State of Arizona, Governor's P-20 Council, October, 2007.)

The aerospace and defense, healthcare-biotechnology, logistics, IT, and emerging technologies sectors rely upon a pipeline of professionals educated in Science, Technology, Engineering and Math (STEM). Not only is the traditional academic pathway in STEM unable to supply enough graduates to meet the needs, but those who do graduate are disproportionately non-Hispanic, white students. Hispanics, who make up about one third of the entire Arizona population and the bulk of projected population growth, account for only 8.9% of all Bachelor's Degrees attained.

The disparity is even more pronounced in the STEM fields. The result is a vicious cycle in which the high-skill/high-wage jobs are filled by educated in-migrants, while local workers in technician-level jobs are unable to move forward in their careers because they lack sufficient skills and education. This current workforce, including dislocated workers and Veterans with technical backgrounds, represents an untapped potential talent pool. Career-ladder development and non-traditional delivery of education is needed to allow current workers to move up into high-technology occupations, diminishing the need to import outside talent to address unmet demand.

The need for employees who can interface with computerized devices will continue to grow in many occupations as rapidly changing technology creates real or perceived skills gaps.

A current trend that is visible to many consumers in stores is the moving of Point of Sale from a central location to a roving sales clerk carrying a tablet. The push for accessible, standardized health information has created the need for re-training many front line health care workers. Computational and higher level math skills are also increasing in demand, as well as the ability to retrieve, analyze, and interpret data generated through computer software platforms.

A subset of the occupations listed in the previous section was identified using the following combination of factors from the 2012-2022 Tucson MSA Occupational Projections:

- Educational Requirements at Associate’s level and below
- Mean Wage at \$29,000 and above
- At least 10 projected openings per year and/or significant rate of growth.

Knowledge, skills and abilities (KSAs) required for these occupations are found in the corresponding O*Net pages listed below. Nearly all of the targeted occupations require critical thinking and active listening skills; many require communication, teamwork and inter-personal skills. Each industry sector has a core skill set that often involves safety standards, documentation requirements, and standard protocols. Basic qualities, including work ethic, attendance, punctuality, appropriate dress, cooperation, productivity, workplace etiquette and proper use of e-mail and internet, are constantly cited by employers across all industries as critical needs.

Healthcare

SOC Code	SOC Title	O*Net KSAs
29-1141	Registered Nurses	http://www.onetonline.org/link/summary/29-1141.00
29-2061	Licensed Practical and Licensed Vocational Nurses	http://www.onetonline.org/link/summary/29-2061.00
29-2071	Medical Records and Health Information Technicians	http://www.onetonline.org/link/summary/29-2071.00
29-2052	Pharmacy Technicians	http://www.onetonline.org/link/summary/29-2052.00
29-2021	Dental Hygienists	http://www.onetonline.org/link/summary/29-2021.00
29-2012	Medical and Clinical Laboratory Technicians	http://www.onetonline.org/link/summary/29-2012.00
29-2041	Emergency Medical Technicians and Paramedics	http://www.onetonline.org/link/summary/29-2041.00
29-2034	Radiologic Technologists	http://www.onetonline.org/link/summary/29-2034.00
29-1126	Respiratory Therapists	http://www.onetonline.org/link/summary/29-1126.00

SOC Code	SOC Title	O*Net KSAs
29-2055	Surgical Technologists	http://www.onetonline.org/link/summary/29-2055.00
31-9091	Dental Assistants	http://www.onetonline.org/link/summary/31-9091.00
31-9092	Medical Assistants	http://www.onetonline.org/link/summary/31-9092.00
43-6013	Medical Secretaries	http://www.onetonline.org/link/summary/43-6013.00

Business Management, Operations, and Support

SOC Code	SOC Title	O*Net KSAs
11-9199	Managers, All Other	http://www.onetonline.org/link/summary/11-9199.00
11-9141	Property, Real Estate, and Community Association Managers	http://www.onetonline.org/link/summary/11-9141.00
13-1199	Business Operations Specialists, All Other	http://www.onetonline.org/link/summary/13-1199.00
15-1151	Computer User Support Specialists	http://www.onetonline.org/link/summary/15-1151.00
11-9051	Food Service Managers	http://www.onetonline.org/link/summary/11-9051.00
13-1031	Claims Adjusters, Examiners, and Investigators	http://www.onetonline.org/link/summary/13-1031.00
15-1152	Computer Network Support Specialists	http://www.onetonline.org/link/summary/15-1152.00
43-1011	First-Line Supervisors of Office and Administrative Support Workers	http://www.onetonline.org/link/summary/43-1011.00
43-3011	Bill and Account Collectors	http://www.onetonline.org/link/summary/43-3011.00
43-3021	Billing and Posting Clerks	http://www.onetonline.org/link/summary/43-3021.00
43-3031	Bookkeeping, Accounting, and Auditing Clerks	http://www.onetonline.org/link/summary/43-3031.00
43-1011	First-Line Supervisors of Office and Administrative Support Workers	http://www.onetonline.org/link/summary/43-1011.00
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	http://www.onetonline.org/link/summary/43-6014.00
43-3031	Bookkeeping, Accounting, and Auditing Clerks	http://www.onetonline.org/link/summary/43-3031.00
43-9041	Insurance Claims and Policy Processing Clerks	http://www.onetonline.org/link/summary/43-9041.00
43-3051	Payroll and Timekeeping Clerks	http://www.onetonline.org/link/summary/43-3051.00

Production/Aerospace&Defense

SOC Code	SOC Title	O*Net KSAs
51-2092	Team Assemblers	http://www.onetonline.org/link/summary/51-2092.00
51-4041	Machinists	http://www.onetonline.org/link/summary/51-4041.00
51-1011	First-Line Supervisors of Production and Operating Workers	http://www.onetonline.org/link/summary/51-1011.00
51-4121	Welders, Cutters, Solderers, and Brazers	http://www.onetonline.org/link/summary/51-4121.00
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	http://www.onetonline.org/link/summary/51-9061.00
51-2041	Structural Metal Fabricators and Fitters	http://www.onetonline.org/link/summary/51-2041.00
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	http://www.onetonline.org/link/summary/51-4011.00
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	http://www.onetonline.org/link/summary/51-4012.00
49-3011	Aircraft Mechanics and Service Technicians	http://www.onetonline.org/link/summary/49-3011.00

Infrastructure/construction

SOC Code	SOC Title	O*Net KSAs
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	http://www.onetonline.org/link/summary/47-1011.00
47-2031	Carpenters	http://www.onetonline.org/link/summary/47-2031.00
47-2051	Cement Masons and Concrete Finishers	http://www.onetonline.org/link/summary/47-2051.00
47-2073	Operating Engineers and Other Construction Equipment Operators	http://www.onetonline.org/link/summary/47-2073.00
47-2081	Drywall and Ceiling Tile Installers	http://www.onetonline.org/link/summary/47-2081.00
47-2111	Electricians	http://www.onetonline.org/link/summary/47-2111.00
47-2141	Painters, Construction and Maintenance	http://www.onetonline.org/link/summary/47-2141.00
47-2152	Plumbers, Pipefitters, and Steamfitters	http://www.onetonline.org/link/summary/47-2152.00
49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	http://www.onetonline.org/link/summary/49-1011.00
49-3023	Automotive Service Technicians and Mechanics	http://www.onetonline.org/link/summary/49-3023.00
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	http://www.onetonline.org/link/summary/49-3042.00
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	http://www.onetonline.org/link/summary/49-9021.00
49-9041	Industrial Machinery Mechanics	http://www.onetonline.org/link/summary/49-9041.00

SOC Code	SOC Title	O*Net KSAs
49-9071	Maintenance and Repair Workers, General	http://www.onetonline.org/link/summary/49-9071.00
49-9098	Helpers--Installation, Maintenance, and Repair Workers	http://www.onetonline.org/link/summary/49-9098.00
51-8031	Water and Wastewater Treatment Plant and System Operators	http://www.onetonline.org/link/summary/51-8031.00

Transportation, Material Handling & Logistics

SOC Code	SOC Title	O*Net KSAs
43-5032	Dispatchers, Except Police, Fire, and Ambulance	http://www.onetonline.org/link/summary/43-5032.00
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	http://www.onetonline.org/link/summary/13-1023.00
43-5071	Shipping, Receiving, and Traffic Clerks	http://www.onetonline.org/link/summary/43-5071.00
43-5061	Production, Planning, and Expediting Clerks	http://www.onetonline.org/link/summary/43-5061.00
53-1021	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	http://www.onetonline.org/link/summary/53-1021.00
53-1031	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	http://www.onetonline.org/link/summary/53-1031.00
53-2012	Commercial Pilots	http://www.onetonline.org/link/summary/53-2012.00
53-3021	Bus Drivers, Transit and Intercity	http://www.onetonline.org/link/summary/53-3021.00
53-3032	Heavy and Tractor-Trailer Truck Drivers	http://www.onetonline.org/link/summary/53-3032.00
53-3033	Light Truck or Delivery Services Drivers	http://www.onetonline.org/link/summary/53-3033.00