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## Taking High-Tech To New Heights In Arizona

*In Arizona, advanced manufacturing is busy integrating new technologies into products and processes, transforming industries, outputs and the workforce they require to succeed in today's global market.*

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**By the BF Staff**

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**S**ome define advanced manufacturing as the creation of a technologically-complex product, while others define it as the innovative processes used to improve a simple product or create a new, more efficient product. Actually, it's both. Advanced manufacturing is the integration of new innovative technologies in both products and processes. It's changing the industry, its outputs and the workforce it requires.

From microchips to missiles, stents to satellites, electric vehicles to optics, Arizona's manufacturing industry is at the forefront of innovation. The state's access to a highly-skilled talent base, robust supply chain and low business costs all contribute to the best environment for manufacturing operations to scale. Additionally, [Arizona](#) is strategically located near some of the world's largest economies, making exporting streamlined and efficient.

World-class, innovative companies have and continue to call Arizona home. For example, Intel Corporation—one of the world's top producers of semiconductors—operates the most advanced semiconductor factory in the world in Chandler, Arizona. Representing both global giants and groundbreaking disruptors, one thing is for sure—the factories of the future are made in Arizona.

Manufacturers like Boeing, Honeywell Aerospace and Raytheon all contribute to Arizona ranking top five in the country for aerospace and defense manufacturing.

These manufacturers are developing highly-specialized products and are being used in a range of applications, from military defense to communications to aviation and even space exploration.



*Sustainable technology firm Footprint is using new manufacturing processes at its Gilbert, AZ facility (above) to revolutionize the production of single use plastic cartons, cups, trays and straws, among other items. (Photo: ACA)*

One innovative newcomer to Arizona's aerospace and defense industry is Tucson-based World View Enterprises, which designs, manufactures and operates stratospheric balloon technology. The company created the Stratollite, an unmanned flight vehicle that operates at altitudes of 95,000 feet and higher—some 20 miles above the earth's surface. The hydrogen-filled balloon is designed and engineered to maintain its altitude for long periods of time, collecting data for a variety of applications such as communications and remote sensing. World View is setting the industry standard in the emerging stratospheric economy, and Arizona is proud to be part of its ascent to the top.

With the goal of eliminating single-use plastics, Footprint is changing the world. The sustainable technology firm has assembled the widest range of process technologies and manufacturing platforms, revolutionizing the production of boxes, cartons, cups, trays, lids and straws. Footprint co-founders Troy Swope and Yoke Chung—both former engineers at Intel—drew from their materials science strengths and developed Footprint's biodegradable, leak-proof, microwaveable, recyclable, compostable and ocean-safe products. The company credits Arizona's abundant high-tech engineering workforce as an integral part in creating these next-gen innovations. The company is disrupting industries and creating a more sustainable future—and it's all happening in Gilbert, AZ.

Arizona's 21st-century policies advancing automated mobility and energy-efficient technology has attracted innovators in the auto industry. Nikola Motor Company, the first publicly traded hydrogen fuel cell and battery-electric heavy-duty truck manufacturer, expects its new plant in Coolidge to produce 35-to-50,000 vehicles a year by the time it's operational. In nearby Casa Grande, Lucid Motors just broke ground on its plant that will produce luxury electric cars that can accelerate from 0-60 in under 2.5 seconds. Just an hour South, in Tucson, AZ, TuSimple announced the expansion of its autonomous truck operation just a year after it set up shop. Arizona's business-friendly environment allows these cutting-edge companies to supercharge their innovations, making a big impact on the world.

As emerging technologies evolve the skills needed for manufacturing jobs, Arizona is setting the standard for closing the skills gap. This is further evidenced by the creation of the Arizona Advanced Technology Network, a unique, first-of-its-kind partnership between government, academia and the industry leaders. Mesa Community College, Estrella Mountain Community College, Central Arizona College and Pima Community College now provide a unified curriculum offering Industrial Technology certificates from the National Institute of Metalworking Skills (NIMS) and an associate's degree in Applied Sciences in Automated Industrial Technology. These courses provide Lucid, Nikola, TuSimple and other high-tech manufacturers like Raytheon, Intel and Boeing with skilled and experienced talent.

The incredible support of the state's thriving innovation ecosystem touches all of the state's industries, including manufacturing, which is experiencing the strongest job growth in 30 years. Arizona's proven track record of

attracting innovators in the advanced manufacturing space enhances the state's reputation as the best place to launch, test and scale new ideas. As technology advances, Arizona's manufacturing industry promises to forge ahead with it, providing companies the support needed to create the products of tomorrow.

## DISCOVER ARIZONA'S POTENTIAL IN SIERRA VISTA

This southeastern Arizona community sits above the valley floor to meet expansive, clear skies with world-class outdoor amenities and business opportunities that stretch across state and international borders. The largest Arizona city southeast of Tucson, [Sierra Vista](#) is the regional educational, medical, and commercial hub, earning accolades for high-tech opportunities including cyber security, alternative energy research, conservation technology, medical research and education, and aerospace. A top market for an educated and technical workforce, Sierra Vista is a thriving community with an unparalleled quality of life.

Sierra Vista has always been at the forefront of technology, thanks to the U.S. Army's Fort Huachuca, established in 1877. This installation has more than 50 unique tenant units and missions, including three of the fastest-growing missions in the Department of Defense: cyber security, unmanned aircraft systems, and military intelligence. Along with more than 5,000 active- and temporary-duty personnel stationed there, Fort Huachuca employs about 3,500 civilian workers and contracts with many private companies that employ several thousand highly skilled professionals.

Sierra Vista's airport is adjacent to Libby Army Airfield and is one of only a handful of joint-use municipal-military airfields in the nation. The 12,001-foot runway at Sierra Vista Municipal Airport can accommodate any aircraft and provides opportunity for aerospace projects. Additionally, the protected 964-square-mile restricted airspace serves as the largest unmanned aircraft systems training facility in the world. Top entrepreneurs and defense agencies from across the globe utilize this unique facility to test and evaluate unmanned aircraft systems.

In addition to high altitude and aviation opportunities, Sierra Vista is a national leader in environmental programs. The community's proximity to Arizona's agricultural industry—along with agronomy programs and professionals—invite agriculture R&D firms. A 25-square-mile Opportunity Zone adjoins the city limits, ensuring access to Sierra Vista's population, amenities, and infrastructure.

Located near the Arizona-Sonora border, international business and travel is streamlined through three ports of entry, all within a 90-minute drive.

Sierra Vista offers business development assistance and professional partnerships throughout the Arizona-Sonora megaregion. Fast track permitting and review, deferred fees, site selection assistance, pre-development

meetings, business education and incentives, plus tax exempt securities for manufacturing are just few perks to help businesses stand up quickly and affordably.

Sierra Vista's leading educational opportunities are reflected in the local workforce. More employees hold a high school degree or higher than anywhere else in the country, and more college graduates call Sierra Vista home than anywhere else in Arizona.

Five higher education institutions are in Sierra Vista, including two of Arizona's state universities, two private universities, and Cochise College, named the third-best community college in the nation by Huffington Post.

"With strong support from the Sierra Vista community and our many educational partners, Cochise College is committed to innovation and excellence in education, enhancing the quality of life for the students and communities we serve," says J.D. Rottweiler, president of Cochise College, which also serves Arizona State University programs. "As the community's college, we strive to provide timely, responsive, and flexible programs of study for current, emerging, and future employers."

Sierra Vista is the home of the University of Arizona's College of Applied Science & Technology, where the Center of Academic Excellence for Cyber Operations has earned top national credentials. Certified by the NSA, the U of A program offers an offensive, as well as defensive, education in the fast-growing field of cyber security.

Educational offerings are rounded out with Embry-Riddle Aeronautical University and Wayland Baptist University, both located at Fort Huachuca.

Sierra Vista serves the healthcare needs of residents in southeast Arizona and northern Sonora, Mexico, and is home to Canyon Vista Medical Center, a \$100 million, 100-bed, Level III trauma facility, and Chiricahua Community Health Center, a fast-growing primary care organization, as well as myriad private practice specialists and physicians.

Community health here is natural, thanks to clean air and abundant sunshine, the city's extensive multi-use path system connecting commercial areas with the community's parks, and easy access to mountain trails. Sierra Vista is as rich with outdoor activities as it is with potential.

"In Sierra Vista, people are valued business owners, employees, neighbors, and friends," says Tony Boone, economic development manager for the City of Sierra Vista. "It's an easy place to live. Short commutes give residents more time to invest in important things—instead of sitting in traffic jams—like exploring Huachuca Mountain trails, attending sports events, and connecting with friends and family."

With an average high of 77° and an average low of 49°, Sierra Vista escapes both sweltering heat and winter's cold. The cool, damp mountain canyons, San Pedro River, and places like Kartchner Caverns, state and national parks, award-winning wineries, historic landmarks, and wildlife preserves all just a short drive away.

Sierra Vista is a place to soar, whether for a business start-up, expansion, or relocation. With a highly skilled, ready workforce, available commercial property, bottom line-friendly office space, Sierra Vista is a business-ready community in Southeastern Arizona's sky islands. Far enough from the beaten path for an affordable and relaxing lifestyle, the four-seasons, temperate climate, and stunning outdoors make Sierra Vista, Arizona a great place to be extraordinary.

## PEORIA: THE PLACE FOR ADVANCED MANUFACTURING

Peoria, Arizona is not just a scenic suburb of Phoenix, but also a thriving economic development hub with an educated workforce and high-end residential living. Peoria is a rapidly growing city of 171,000 residents. With rankings like the No. 1 city to live in Arizona by Money Magazine and the 4th best place to get a job by Wallethub, Peoria is the place for business owners, developers, and investors.

Advanced manufacturing companies, in particular, have strong and sustained economic growth, regularly seeking new places to expand and relocate business. In the last five years, Peoria has become the place for the advanced manufacturing industry. Numerous manufacturing companies, including Maxwell Technologies, Novemba, TYR Tactical and OakCraft, moved or relocated to the city. Novemba is an international company that specializes in plastic cap design and injection. They picked Peoria, Arizona as the ideal place to open their first advanced manufacturing plant in the United States. TYR Tactical has revolutionized tactical equipment for the next generation of warriors, selecting Peoria as its headquarters. OakCraft is the largest cabinet manufacturer in the Southwestern United States and chose Peoria as the place to expand its operations, building a 110,000 square foot, state-of-the-art facility to meet customer demand. Additionally, Peoria's average wage for the industry is \$49,500. These are just a few examples of Peoria and the Northwest Valley earning a reputation for being a world class, sustainable and future-ready advanced manufacturing industry center. Beyond the available sites and a primed region, Peoria has a high quality of life, a greatly sought-after school

district, a professional workforce, and strong partnerships with local and regional economic development and commerce authorities such as the Arizona Commerce Authority and the Greater Phoenix Economic Council (GPEC). The Arizona Commerce Authority, for instance, established Arizona Manufacturing Extension Partnership (MEP) as a catalyst for strengthening manufacturing in Arizona, accelerating manufacturing's transformation into a more efficient and powerful engine of innovation. Its mission is to make every Arizona manufacturer the most successful business it can be. These game-changing partnerships have laid the groundwork for fruitful advanced manufacturing development in Peoria, Arizona. Also, with a shared passion for innovation and

economic vitality, Peoria's mayor and city councilmembers are motivated and supportive of an aggressive approach to attracting new advanced manufacturing businesses to the city. Such businesses seek to improve the performance of U.S. industries through the innovative applications of technologies, processes and methods to product design and production. Expedited permitting, a self-certification program, the Workforce Development Navigator and the MPOWERS Program were developed to provide unparalleled and award-winning customer service, while catalyzing the speed to market for business. Additionally, the Self-Certification Program allows building design professionals who are registered and approved to self-certify their own building plans. The Workforce Development Navigator is a 90-day program where city staff provides workforce resources to help businesses hire the best talent.

Lastly, the MPOWERS Program brings together the Peoria Business Concierge, Peoria ASU Forward, the Small Business Development Center, 1 Million Cups, the Peoria Chamber of Commerce and the Economic Development Advisory Board Ambassador Program to provide comprehensive customer service to business owners. The City of Peoria has created a business ecosystem that is world class, sustainable and future-ready, fostering entrepreneurship and business growth in a variety of industries like advanced manufacturing.

For business owners looking to expand or relocate an advanced manufacturing business, Peoria is the place. The Greater Phoenix area, including Peoria, has modern and dependable infrastructure so utility providers are able to supply reliable, uninterrupted power to users that need it most. Peoria is located near four major freeways— Interstate 17, Interstate 10, Loop 101 and Loop 303, the BNSF railroad, and is approximately 30 minutes from the Phoenix Sky Harbor International Airport. Peoria also offers incentives to give a competitive edge and an educated workforce that can deliver the results needed. Learn why Peoria is the place for your advanced manufacturing business. Visit [www.peoriaed.com](http://www.peoriaed.com) or call (623)773-7735 for more information.

## **TUCSON: SEEING IS BELIEVING**

For those in the optics and photonics industries, you know that Tucson is ground zero for optical talent and technologies. Lasers, mirrors, lenses and telescopes – these technologies and their applications are found in almost every industry segment, in particular, IT, aerospace, space, connected and autonomous systems, construction, mining tech and biotech. Tucson is home to the University of Arizona College of Optical Sciences which is known worldwide as the premier educational and research institution for optics and photonics. This creates a talent pipeline which enables this industry cluster of businesses to thrive and grow here in Southern Arizona. Little known fact, the world's largest telescope is being fabricated at the University of Arizona right beneath the football stadium.

Opportunities for partnership and collaboration come quickly in Tucson with this robust ecosystem that we call Optics Valley. Companies like Lasertel, Edmund Optics, Ruda Cardinal, NP Photonics, Coherent, Darling

Geomatics, REhnu and Spectral Instruments are all taking advantage of what the Tucson region has to offer. Supporting the ecosystem is a function of the variety of workforce and economic development organizations. To that end, Tech Parks Arizona just broke ground on the University of Arizona Tech Park at the Bridges—a new 65-acre campus close to downtown and the university which will be home to new, high tech facilities to serve as research and development space for companies looking to grow and expand here. This will make access to world class resources made possible by a university that makes close to \$700 million in R&D expenditures annually. Utah based The Boyer Company is developing the first building dubbed The Refinery which will feature 120,000 square feet of space and will house the UA Center for Innovation to support startups in the tech sector.

Access to capital is another reason companies are choosing Tucson. Enhanced options for venture capital can be found through organizations such as UA Ventures, Bluestone Venture Partners, and Diamond Ventures while the Tucson Desert Angels is a highly active angel investor group that has invested over \$47 million in more than a hundred companies since 2000.

The work of Startup Tucson continues to inspire and strengthen entrepreneurs through mentoring and educational programming in addition to a ten-day long impact festival known as TenWest which happens every October in Tucson. With the backdrop of a vibrant and bustling downtown, the TenWest Impact Festival incorporates a pitch competition amidst arts, culture and music to encourage innovation and discovery through meaningful networking aimed at drawing the community closer and catapulting the growth of business and industry.

To further create Tucson as a place for creating and innovating, the Tucson Convention Center is undergoing a \$65 million refresh to offer upgraded meeting space and technology to meet the needs of the corporate convention industry. With four hotels under construction surrounding the convention center site, including the city's first connected convention center hotel, the Tucson destination is a great way to experience first-hand how your company can benefit from holding its meetings and conferences in an authentic place that inspires through history, arts and, of course, food.

In 2015, Tucson became the first UNESCO designated City of Gastronomy in the United States. This recognition honors the outstanding food scene that contributes to quality of life, something companies still credit as a key reason to choose for expansion and relocation. So, take a closer look at Tucson when you are considering your growth plans this year. You just might be surprised by what you see.

For more information on doing business in Tucson, visit [www.connectTucson.com](http://www.connectTucson.com) or contact the City of Tucson Office of Economic Development at (520)837-4069.

## CASA GRANDE: ECONOMIC HUB

**Casa Grande** is the Economic Hub of Pinal County, situated between Phoenix and Tucson metropolitan areas in the heart of the Arizona Innovation and Technology corridor. The city has a year-round population of more than 57,000 that grows to over 70,000 during Fall and Spring (pertains to those who live within the current city boundary of 110 square-miles).

However, the city still has plenty of room to grow and a planning area of over 300 square-miles that, when built-out, will be home to upwards of 750,000 residents.

Casa Grande offers companies looking to expand, locate or relocate to the Southwest access to the markets of California, Canada and Mexico including thousands of acres of industrial land that is more affordable than metropolitan areas. There is also benefit from a robust infrastructure system, two major interstates (I-10 and I-8) and the main line of Union Pacific Railroad. Most of this acreage is located within the industrial corridor which offers the additional benefit of a Foreign Trade Zone and an Opportunity Zone.

Casa Grande's proximity to two metropolitan areas provides access to a highly educated and skilled workforce of over one million. There are more than 40 colleges and universities within one hour of the community. Combined, these institutions boast of 18 schools of engineering with over 24,000 students enrolled in 38 engineering programs (industrial, mechanical, chemical, systems engineering, materials, software, robotics and autonomous systems). More than 5,000 students graduated from these programs in 2019, adding to the 32,000 engineering professionals already employed in Arizona. For businesses with positions that do not require a 4-year degree, Central Arizona College is willing to work directly with each company to customize training that meets its workforce needs.

Casa Grande's proximity, location and connectivity are just a few reasons why the city has been successful in recruiting and retaining businesses like Hexcel-Woodward (one of the largest Aerospace companies in the world), Abbott Nutrition, Frito-Lay, Daisy Brand, ACO Polymer, Ehrmann Arizona Dairy and Franklin Foods, Cardinal Glass and, most recently, Lucid Motors which has begun construction of its 800K s/f manufacturing plant that is scheduled to be online and producing Lucid Air electric vehicles by the end of 2020.

Additional benefits include:

- Business Assistance Program
- Rail served-shovel ready sites ranging from 2 acres to over 100 acres
- Opportunity Zone incentive
- Foreign Trade Zone property tax reduction
- Tax exemptions for manufacturing equipment



Casa Grande enjoys unparalleled connectivity to the State's transportation system. The community is served by Interstate 10 and Interstate 8, the main line of Union Pacific Railroad, its own general aviation airport with a 5,200-foot runway and is positioned within one hour of three international airports: 1) Phoenix Sky Harbor (20 airlines offering non-stop flights from Phoenix to more than 105 domestic and 23 international destinations, handling over 800 tons of cargo daily), 2) Phoenix Mesa Gateway (45 domestic and 3 international flights) and 3) Tucson International (non-stop flights to 19 domestic stops and one-stop to over 345 cities worldwide). Casa Grande's location also provides access to three Ports of Entry: Long Beach/LA (< 7hrs), San Luis (< 3hrs) and Nogales (<2hrs). Additional benefits include:

- Shovel-ready sites with thru-the-fence access to a municipal airport
- Rail served, shovel-ready sites
- Direct access to two Interstate Highways
- Class I rail from Union Pacific Railroad
- Reaches three Ports of Entry within seven hours
- Three International airports within one hour

Casa Grande is the Health Care Hub of Pinal County. Anchored by Banner Casa Grande Medical Center, 114 medical specialists offer a full range of care including acupuncture, pediatrics, cardiology, dialysis, oncology, optometry/ophthalmology, neurologist, chiropractors, orthopedics, sports medicine, OBGYN, internal medicine, and more. The industry employs over 1,300 health care professionals in the community. Casa Grande is located within one hour of 16 medical and nursing programs, including Mayo Clinic Alix School of Medicine, University of Arizona and this area's own Central Arizona College whose nursing program is affiliated with Arizona State University's (ASU) Bachelor of Science degree in Nursing. This helps to provide a highly educated and skilled workforce.

Additional benefit:

- Over 100,000 square feet of medical office space is available

Our residents and visitors enjoy a high quality of life consisting of a lower cost of living, good air quality, beautiful night skies, access to great schools (including ASU Prep Academy), 19 parks, 17 miles of hiking and biking trails, golfing, a new recreational facility and a plethora of special events held throughout the year to include rodeos, car shows, concerts in the park, fly-ins, holiday parades, sports tournaments and much more.

## Relocating or Expanding Your Business In Arizona

Considering Arizona for your company's relocation or expansion project? Check out *Business Facilities' Arizona Incentives and Workforce Development Guide*.

- [Arizona: Billion Dollar Boom](#) The Grand Canyon State has seen its share of grand investments in 2018 with two companies that are revolutionizing their industries.
- [Arizona: Job Growth Is Surging In The Grand Canyon State](#) With a booming economy fueled by a business-friendly climate and a thriving startup ecosystem, Arizona was fourth among U.S. states in GDP growth in 2018.
- [Arizona: Great and Getting Greater](#) Greater Phoenix, Arizona is a high-tech hub and a growth juggernaut, with unparalleled market access to the Mountain and Western regions of the U.S.



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