

WHITE PAPER

Serving the Mining Industry? Consider Tucson, Arizona Where Opportunities Abound

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By Michael Coretz and Jan Knight



Commercial Real Estate Group Of Tucson LLC
Your Trusted Adviser For Your Mining Real Estate Needs

Companies serving the mining industry, whether they're in startup mode or established firms with plans to expand or relocate, will find they can thrive in Tucson and Southern Arizona.



This white paper explores why any company serving the mining industry should consider Tucson and Southern Arizona for its relocation, expansion or startup. It then provides ample support for the belief that Tucson, Arizona should top the short list of cities to consider.

This white paper is published by Commercial Real Estate Group of Tucson, LLC. Contact Michael Coretz, your Tucson commercial real estate partner, for more information.



Commercial Real Estate Group of Tucson LLC

WWW.CRETUCSON.COM • Tel 520•299•3400 • Michael@cretucson.com



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Serving the Mining Industry?

Consider Tucson, Arizona, Where Opportunities Abound

Introduction

- ▶ What comes to mind when people think of a successful mining region and a supportive business environment?

It goes without saying that the area in question needs to have the natural resources that will attract the mining industry. Tucson and the southern part of Arizona certainly have an abundance of natural resources, including copper and silver, as well as other metals such as molybdenum and rhenium.

The presence of these resources has prompted the emergence of a diverse and professional supplier base, logistics, transportation, a strong work force and opportunities for research and collaboration. Arizona offers all of this and more: a lifestyle that includes beautiful deserts surrounded by mountains, golf courses, resort spa hotels and pristine blue skies. It's also the home to The University of Arizona, and boasts a cultural and arts environment with diversity at its core.

In short, Tucson and Southern Arizona offer everything that makes a mining industry successful. Businesses that serve and support mining are crucial to the success of the overall industry. The diversity of those services and products creates an environment that fosters innovation and growth. Whether it's equipment for dust suppression, ore crushing and mineral processing or services related to staffing, information technology and data integration, there is a need and opportunity for all of these services in Tucson and Southern Arizona's mining ecosystem.

Tucson was rated as the **#1 "momentum market" in CBRE's 2019 Tech Count Survey**. This means that Tucson added more jobs on a percentage basis than any other tech industry market in North America. In addition to The University of Arizona producing more tech workers, more tech employers and tech employees moving to the city, other market drivers include a low cost of living and a very high quality of life. In the past five years to 2019 Tucson has seen a 90% growth in tech jobs and 29% growth in tech wages.

In 2017, the mining industry provided a total economic impact of approximately \$5.9 billion.





Mining Industry – Why Tucson & Southern Arizona?

- Mining for copper started in Southern Arizona in the late 1880s and the region led world copper production by 1907. Over 100 years later, the region is still a leader in the production of copper and other minerals.

Reasons are plentiful as to why companies offering products and services to support the industry will find success in Tucson and Southern Arizona. Both new technology startups and established firms planning to expand or relocate will find that opportunities are plentiful.

Tucson and Southern Arizona have an established, robust mining and mining technology sector that is poised to expand. The support system for those mining operations consists not only of global suppliers that are based here. Trade associations and The University of Arizona enrich this system, supporting efforts for area industry growth.

The city's central southwestern U.S. location provides a number of advantages to companies in the area. Tucson's many transportation options easily handle trade needs. The area sits within easy access to interstates and offers the Port of Tucson, an inland warehousing, manufacturing and rail distribution hub. This intermodal rail facility, registered as a Foreign Trade Zone, simplifies domestic and international shipping for manufacturers involved in all parts of the supply chain.



A few quick facts ...

- The mining industry is an important contributor to Arizona's economy with the economic impact of the industry estimated at \$5.9 billion in 2017.
- In Arizona, mining jobs pay an average of \$102,859, which is more than twice that of all Arizona jobs, and there are almost 36,000 jobs in the state connected to mining in some way.
- Arizona is the top producer of copper, providing 65% of U.S. copper.
- Arizona's copper is predominately sold outside the state, which infuses dollars into the local economy.

In recognition of the importance of Tucson as the center for mining and related services, the University of Arizona will be opening the new University of Arizona Alfie Norville Gem and Mineral Museum in the iconic and historic Pima County Courthouse in downtown Tucson in 2020. The museum will include a section on the important role the mining industry plays today in Arizona's economy.





Additional Support

Tucson and Arizona have other benefits to offer in addition to those specific to the mining and mining technology industries. Companies that might plan to move, expand or establish a startup here can benefit greatly from the variety of support available locally.

State Financial Incentives

- More than \$200 million is available through refundable tax credits, reimbursable grants and property tax reductions. Those incentives include R&D Tax Credits, Quality Jobs Tax Credits and a Qualified Tax Incentive Program. The last one provides up to 10% refundable tax credit for investment in manufacturing facilities.
- Tucson is located in a Foreign Trade Zone and businesses located in a zone or sub-zone are eligible for up to 70% reduction in state, real and personal property taxes.
- A recent federal tax credit for long-term investors of real estate has created a number of Tucson Opportunity Zones in the Tucson and Pima County region, with many of them straddling the key logistical routes of Interstates 10 and 19. Investors can reduce the amount of their reinvested taxable capital gains by 10% or 15%, depending on the length of the investment. This has created great opportunity for commercial real estate investment.

Availability of Funding

- Recently, three new venture capital funds were launched in Tucson. UAVenture Capital focuses exclusively on technology coming from the UA. Bluestone Venture Partners aims to build its portfolio around life sciences in the Southwest. Diamond Ventures invests in both real estate and high-growth companies.
- ACA (Arizona Commerce Authority) provides numerous funding opportunities in the form of grants and loans to companies at all stages of growth.
- The Tucson Desert Angels is a highly active angel investor funding group that has invested over \$47 million in more than 105 companies since 2000.
- Silicon Valley Bank has a track record of helping Arizona companies and has committed to lending at least \$100 million to technology and life-science companies based in Arizona through 2019.

City of Tucson Incentive Programs

- Tucson offers over 20 different business incentives and assistance programs to companies who are considering moving or expanding to the city. Categories include financial incentives, loan programs, business assistance programs, development services programs and incentive districts.
- Hundreds of millions of dollars have been invested in the city as a result of these incentives, creating hundreds of new jobs. The City Manager's Office of Economic Initiatives combines Economic Development, Annexation, Small Business Assistance and Special Events coordination into one team to continue to improve Tucson's economic environment.





The University of Arizona: A Strong Research & Educational Presence

▶ The University of Arizona supports the mining industry in a variety of ways, ranging from academic research and education to hands-on practical experience and specialized information technology courses.

The Mining and Geological Engineering Program at the University celebrated in 2019 the 131st anniversary of the founding of the Arizona School of Mines. The program is popular because the mining industry has faced a severe shortage of engineers and scientists. Its graduating students receive some of the highest starting salaries and job placements among the multiple disciplines taught at the University.

Lowell Institute for Mineral Resources (IMR) was created to advance scientific, technological and educational aspects of mineral discovery, extraction and processing. The “new face” of mineral resources education includes studying and researching the environmental and societal issues associated with the mining industry. This interdisciplinary institute involves faculty, students and staff from 26 different disciplines across 10 colleges.

The San Xavier Underground Mining Laboratory provides “real hands-on education, training and research” by means of a 90-acre unique teaching and research facility located in the Pima Mining District just south of Tucson. The mining lab also is used as a training resource by federal and state agencies and organizations devoted to underground research, tunnel safety and mine rescue. Over 300 miners from seven states have participated in this training program since 2000.

In June 2019, the program received \$1.78 million grant from the National Institute of Occupational Safety and Health (NIOSH) to study safety issues surrounding exposure to hazardous materials.

Tech Launch Arizona helps faculty and researchers commercialize their inventions and helps advance University discoveries.





Technology and Mining Support

▶ *"More than 60% of the nation's copper comes from Southern Arizona. The rich history of mining in the state, along with the expertise at the University of Arizona's Lowell Institute for Mineral Resources, has resulted in Tucson becoming a world leader in mining technology."*

..Sun Corridor

Tucson really has become a leader in mining technology and support companies. Technological innovations in mining equipment, monitoring equipment and safety are industry drivers and Tucson's support system isn't lacking. Here is just a sampling of companies supporting the connection between mining and technology.

Caterpillar's Surface Mining Division

supplies products for surface mining including dozers, trucks, drill rigs, graders and more. After a long-time presence in the state, 2016 saw them expand their workforce. The company is also using its Southern Arizona proving grounds to test, improve and demonstrate its autonomous mining equipment. www.cat.com/en_US/by-industry/mining/surface-mining.html

"Southern Arizona is a growing region known for a workforce rich in mining, technology, and engineering expertise as well as an attractive quality of life for both families and young graduates."

...Tom Bluth, Caterpillar Vice President
with responsibility for Surface Mining and Technology

Epiroc is a world leader in mining equipment and rock excavation. With offices globally, the Tucson division serves Arizona and New Mexico, providing drilling, mining and construction products. www.epiroc.com

GroundProbe, a member of the Orica Group, is a global technology leader providing advanced hardware and software solutions to the mining industry. www.groundprobe.com

Hexagon Mining is a global company with employees in 50 countries and a leader in sensor, software and autonomous solutions for the mining industry. www.hexagonmining.com

"Downtown Tucson is the ideal location for a North American headquarters of a global technology company. It's highly attractive for millennial talent from universities and abroad. Better yet, as a training center for customers, this location allows us to fully expose the rich possibilities of a smarter, safer, fully connected mine."

..... Josh Weiss, President
Hexagon Mining

Modular Mining provides computerized systems and services, and GPS and wireless networks that help to improve safety and efficiency at mines. The company announced expansions of their facilities and workforce in early 2019. www.modularmining.com

Pioneer Equipment serves the mining industry and others with a full line of pumps, air compressors, vacuum pumps, mechanical seals and related equipment. www.pioneerequip.com





South21 is a globally diversified mining and metals company that owns the Hermosa Project, a high-grade zinc, lead and silver development option located about an hour southeast of Tucson in neighboring Santa Cruz County. At South32 operations in Australia, Southern Africa, and South America, the company produces bauxite, alumina, aluminium, energy and metallurgical coal, manganese, nickel, silver, lead and zinc. The company also has several partnerships with junior explorers with a focus on base metals. south32.net

Tucson is also home to global leaders in specific types of engineering services, construction and energy who serve the mining industry as part of their customer base.

The Ever-Present Controversy in the Mining Industry

Mining is rarely without controversy.

Rather than gloss over the common arguments related to the environmental repercussions of the industry, the local Southern Arizona mines and The University of Arizona tackle the issues head on to not only reduce impacts of concern, but to become models for mining innovation and stewardship.

Rosemont Copper, for example, has a **Rosemont Copper Conservation Lands Program** that strives to set a “new environmental standard” that will include years of careful planning and environmental review to help ensure that the operation reflects high standards for sustainability. Although mining is typically a water-intensive endeavor, Rosemont Copper says it plans to use technologies that would require only half as much water as a conventional mine.

Rosemont Copper continues to work its way through federal and state regulatory issues and concerns by environmental interests for its open mine project about 30 miles south of Tucson. Rosemont Copper expects that, if approved, the mine will process 75,000 tons of ore a day, producing more than 600,000 pounds (270,000 kilograms) of copper a day. There also will be molybdenum and silver production in operations that will create about 400 local jobs.

The Center for Environmentally Sustainable Mining (CESM) at The University of Arizona has been created with a mission to develop educational, specialized professional training and research initiatives. All would address environmental issues related to mining activities in arid and semi-arid urban environments.

The rationale behind the program is that “Arizona is ranked first among states in the value of the non-fuel mineral resources produced each year” and that there is a critical need for innovative approaches for sustainable mineral resource development. Without those innovations, there is concern that the development will be halted.

“Southern Arizona has an incredible climate for mining. It is like family. The support between vendors and mine companies is unmatched and the close-knit mining organizations support each other and networking is terrific.”

...Jim Hurley, Pioneer Equipment Inc.

“Those opposing the mine don’t realize that Tucson and Southern Arizona are at the epicenter of some of the most significant copper resources in the world and they will be developed as long as the nation needs copper.”

...John Lacy, Expert in Mining Law





Specialized Commercial Real Estate Needs

Companies supporting mining ventures range from business services such as accounting and engineering to manufacturing and servicing of mining equipment and parts. Tucson and Southern Arizona have options that fulfill the commercial real estate needs of all these support functions.

The expertise of a local commercial real estate expert is crucial when seeking specialized commercial real estate, especially for manufacturing and R&D. This person will understand the needs that are specific to the mining industry, including identifying:

- adequate warehouse space for materials and end product
- building configurations and infrastructure that optimize production
- facilities that meet health and safety requirements
- locations with efficient transportation to mine operations
- locations that provide opportunities for expansion
- locations that meet needs for data storage and R&D facilities.

A local commercial real estate expert will know the players in the mining tech and mining support industry where introductions can be made and networks formed to a business's benefit.

A few commercial real estate sources that directly address these needs include CREG Tucson's

Relocation Guide

www.commercial-real-estate-tucson.com/resources/2018-relocation-guide

and **Infographic on Buying vs. Leasing**

www.commercial-real-estate-tucson.com/market-resources/infographics

"Without a robust, successful mining industry in the U.S. and Arizona, our high-tech manufacturing industry wouldn't be able to succeed."

...Steven G. Zylstra, President
& CEO of the Arizona Technology Council



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WWW.CRETUCSON.COM • Tel 520•299•3400 • Michael@cretucson.com



Let's Not Forget Lifestyle

▶ We know that employers have an easier time recruiting people to work in places that offer not just a great business working environment, but a lifestyle that they and their families can enjoy.

For those who haven't heard, Tucson boasts 350-plus days of sunshine a year. For most of the year, humidity is low, although the brief summer monsoons bring a welcome break with heavy rainfall and strikingly beautiful storms that amateur and professional photographers love. Tucson is surrounded by mountains, offers the best sunsets and provides hiking and walking opportunities galore.

Tucson Emerges as Global Leader in Bicycling? Yes, Really!



One of Tucson's major benefits for those who like the outdoors is The Loop. Consisting of 131 car-free miles, the paved trails provide an urban system that connects bus and bike routes, hotels, restaurants, parks and trailheads. Most areas are flat and family-friendly. Much of The Loop runs adjacent to Tucson's river beds and almost all of it provides views of the mountains. In addition to cyclists and pedestrians, The Loop is open to horseback riders, who also use adjacent dry river beds. In addition, the city boasts 1,098 miles of bike facilities overall.

"10 Most Bike-Friendly Cities in America." – *Forbes Magazine*

No. 1 "Top Best Bike Towns" – *Outside Magazine*

Golfing & Hiking

For amateurs, there are dozens of municipal courses and PGA pro-designed resort courses, plus golf communities, allowing golfers of all levels to play year-round. Tucson has been home to PGA, LPGA and Championship Tournaments over the years and we even have pros who make Tucson their home.

If you prefer to walk less manicured environs and replace golf clubs for walking poles, there are hiking trails available around the desert floor and within mountain forests. Tucson's world-famous resorts and spas often offer golf and hiking in close proximity and attract visitors and business conferences from all over the world.

Arts & Culture

The *Wall Street Journal* has described the Tucson region as a "mini-mecca" for the arts. Tucson is known for a special arts vibe. It's home and host to fully professional symphony orchestra, opera, ballet and theater companies. It has dozens of small playhouses and hundreds of large and intimate music venues. Its revitalized downtown is also experiencing a renaissance as an entertainment hub.

Food

Another vibe Tucson is known for is food. In 2017, Tucson became the first American city to become part of the UNESCO Creative Cities Network for Gastronomy. The award honors and recognizes the "region's rich agricultural heritage, thriving food traditions and culinary distinctiveness." It's also been named "Best Under the Radar Food City." While the Mexican and Southwestern cuisines are especially prominent, the variety of restaurants, bars and eateries is mind-boggling to even long-time residents.





Local Mines – Tucson & Southern Arizona



ASARCO (Mission, Silver Bell and the Ray open-pit mines)

ASARCO is a fully integrated miner, smelter and refiner of copper whose domestic mines produce approximately 350–400 million pounds of copper annually. ASARCO is one of the largest private companies in the state employing 2,200 people. ASARCO hosts a Supplier Portal as an extension of its commitment to long-term, mutually beneficial relationships with suppliers. The company is a subsidiary of Grupo México.



Freeport-McMoRan (Sierrita Mine)

Sierrita is one of five mines in Arizona run by Freeport-McMoRan. This open-pit mining complex about 20 miles south of Tucson is an operation that includes a concentrator that produces 102,000 metric tons of copper and molybdenum concentrates per day, a run-of-mine oxide-leaching system and a copper sulfate crystal plant. In addition, the mine produces rhenium, a rare and highly valued metal. The company is a public company employing over 5,500 employees nationally.



Rosemont Copper Company (Rosemont Copper Project)

The Rosemont Copper project is located approximately 30 miles southeast of Tucson. Rosemont Copper is expected to provide more than 10% of the U.S. copper supply. It is in the midst of a multi-year approval process for a new open pit mine. The new mine, if approved, will supply an estimated 243 million pounds of copper per year. The company is owned by Vancouver-based Augusta Resource Corporation.



Summary

▶ This white paper has identified a number of reasons why Tucson, Arizona, has been, and continues to be, a hub for those involved in the mining industry.

It also provides evidence of a supportive business community with many local leaders, stakeholders and professionals who are eager to help new or established companies be successful and feel supported if they choose to make Tucson, Arizona, their new home.





Resources, Associations & Publications

Arizona Commerce Authority (ACA) www.azcommerce.com

Arizona Technology Council www.aztechcouncil.org

BizTucson The Region's Business Magazine www.biztucson.com

City of Tucson www.tucsonaz.gov

Desert Angels Investment Funding Group www.desertangels.org

Pima Community College www.pima.edu

Sun Corridor Economic Development www.suncorridorinc.com

Mining Resources

InfoMine. Your Global Mining Resource infomine.com

"Sources of Tucson Venture Capital Grow" www.bit.ly/2Pzfetw

"Tucson Ranked as the Top City for Emerging Tech Companies"
azbigmedia.com/business/technology/tucson-ranked-as-the-top-city-for-emerging-tech-companies/

"Count on Copper" Arizona Mining. AZ Business. September/October 2018.

azbigmedia.com/publications/azbusiness-sept-oct-2018/

Arizona Mining – 2017 Economic Fact Sheet. Arizona Mining Association

azmining.com/wp-content/uploads/2019/04/AMA-2017-Economic-FACT-SHEET.pdf

Economic Impact of the Arizona Mining Industry. Arizona Mining Association

azmining.com/wp-content/uploads/2019/04/AMAImpact201-PPT-Final.pdf

The University of Arizona Resources

Mining & Geological Engineering Department mge.engineering.arizona.edu/

Lowell Institute for Mineral Resources (IMR) minerals.arizona.edu/

San Xavier Underground Mining Lab minerals.arizona.edu/content/san-xavier-underground-mining-laboratory

Center for Environmentally Sustainable Mining (CESM) superfund.arizona.edu/cesm

UA Center for Innovation (UACI) Tech Incubator techparks.arizona.edu/UACenterForInnovation

Tech Launch Arizona (TLA) techlaunch.arizona.edu

Tech Parks Arizona techparks.arizona.edu

Lifestyle

"45 Reasons to Move to Tucson" www.tucsontopia.com/45-reasons-to-move-to-tucson

"Tucson 101" from Sun Corridor www.suncorridorinc.com/Living-Working/Tucson-Introduction.aspx

Visit Tucson www.visittucson.org





Commercial Real Estate

#1 momentum market in CBRE's 2019 Tech Count Survey.

bit.ly/2U2VLFA

Relocation Guide

www.commercial-real-estate-tucson.com/resources/2018-relocation-guide

Infographic on Buying vs. Leasing

www.commercial-real-estate-tucson.com/resources/buying-vs-leasing

"New Tucson Opportunity Zones May Spur Growth"

www.commercial-real-estate-tucson.com/about/opportunity-zones-incentive

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