

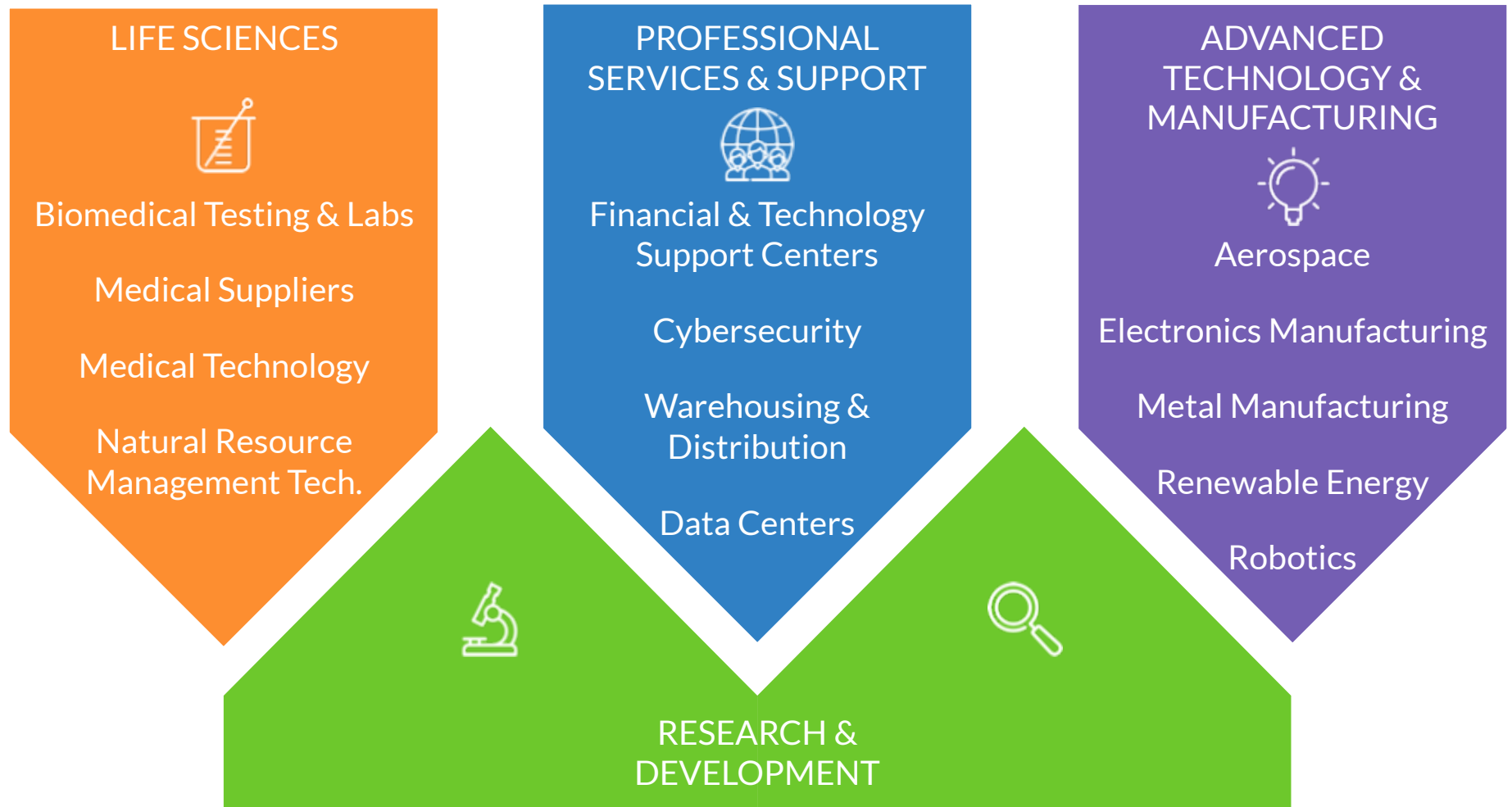
SANDOVAL COUNTY TARGET INDUSTRY PROFILES



Target Clusters

The target industry clusters recommended for Sandoval County at the conclusion of the Economic Evaluation are **Life Sciences**, **Professional Services & Support**, and **Advanced Technology & Manufacturing**.

Research and development is an overlaying opportunity that pervades all three targets. These targets provide a mix of short-, mid-, and long-term growth potential – with some targets requiring additional property development and other activities. Niche sectors in each cluster are identified as special opportunities unique to Sandoval County.



LIFE SCIENCES

NICHE SECTORS

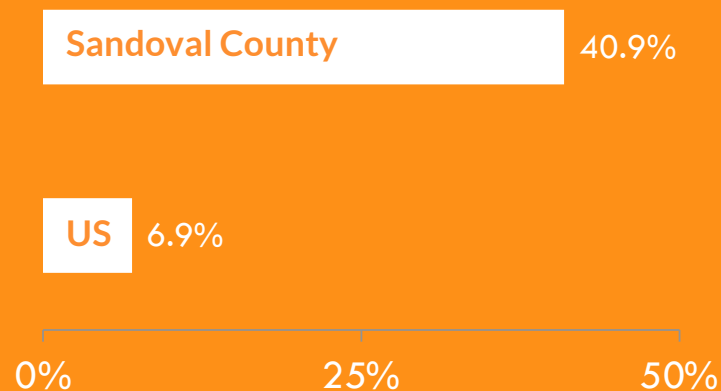
Biomedical Testing & Labs

Medical Suppliers

Medical Technology

Natural Resource Management Technology

LIFE SCIENCES EMPLOYMENT GROWTH, 2011-2016



Source: Avalanche Consulting / EMSI

Cluster Overview

The Life Sciences cluster covers a range of technology, products, and services that focus on human, crop, and biological health and management. This includes businesses developing and utilizing technology and devices to diagnose, manage, and treat human health conditions. It also includes economic based businesses that supply and support the larger Healthcare sector.

Sandoval County currently has over 300 Life Sciences jobs with a Location Quotient (LQ*) of 0.9. The cluster has grown more than five times faster locally than in the US over the past five years – 41% growth compared to 7%. The average Life Sciences salary currently matches the overall average in Sandoval County, but across the US, this industry pays nearly double the US average salary. (*LQ measures the concentration of employment in the industry relative to the US average. An LQ of 0.9 means that Life Sciences jobs per capita are 90% of the US average, for example.)

LIFE SCIENCES

NICHE SECTORS

Biomedical Testing & Labs

Medical Suppliers

Medical Technology

Natural Resource Management Technology

LIFE SCIENCES SALARY, 2016

○ AVERAGE SALARY OF ALL JOBS

Sandoval ● \$43,041

US ● \$97,230

\$0 \$50,000 \$100,000 \$150,000

Source: Avalanche Consulting / EMSI

Niche Sectors

Biomedical Testing & Labs – This sector involves the testing and diagnosis of human biological samples. It is intimately tied to the operations of large hospital networks – providing diagnostic services to doctors and clinics. New technologies continue to allow medical professionals to more effectively evaluate patients and diagnose conditions and health risks. As a result, this sector benefits from and is closely tied to emerging research in genomics and bioinformatics.

This sector presents an immediate opportunity for Sandoval County, but a severe shortage of office and medical space limits the capacity for rapid growth.

Medical Suppliers – This niche covers the businesses that manufacture, purchase, and distribute medical equipment and supplies to healthcare providers, such as hospitals and doctors offices. These businesses play a critical role in keeping healthcare systems running and have major logistics and distribution components. Healthcare is one of the fastest growing industries in Sandoval County, and these operations have an ever growing need for on-demand supply networks.

Due to the large, growing Healthcare industry in Sandoval County, this sector presents an immediate opportunity. However, further limitations exist because of a lack of real estate for businesses and the need for additional logistical connectivity, such as the Paseo Del Vulcan highway.

Medical Technology – The Medical Technology (or MedTech) sector describes the convergence of software, services, and devices that address human healthcare needs. Growth in this sector is driven by research and development of new technology and demographic changes.

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LIFE SCIENCES

NICHE SECTORS

Biomedical Testing & Labs

Medical Suppliers

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Natural Resource Management Technology



MedTech companies often cluster in regions with a combination of research hospitals, existing firms, a strong talent pool, and demographic dynamics that facilitate testing and deployment of products and services. Within the US, the aging population assures a growing market for a variety of healthcare products for many years to come. Rising incomes and healthcare spending in foreign countries are also creating new market opportunities for domestic MedTech businesses. New technological innovations in areas such as wearable devices and Telemedicine, which has numerous applications in states with large rural populations like New Mexico, also continue to create new opportunities.

Sandoval County's MedTech sector is already highly concentrated – with a Location Quotient of 2.8 – presenting an immediate opportunity for development. This sector nonetheless faces similar constraints related to real estate availability.

Natural Resource Management Technology – Water shortages, forest fires, erosion, and other environmental concerns have become the new normal due to climate change, population growth, and increased cultivation. These persistent concerns continue to drive the development of new technology, practices, and services – with companies looking for ways to more efficiently grow and harvest crops, manage water resources and forest lands, and perform sustainable environmental stewardship. The Natural Resource Management Technology sector covers a wide range of businesses that work on these efforts at the convergence of scientific research and new technology. These efforts include designing new devices and equipment alongside developing software and services to manage new technology.

This is an emerging sector across the globe, but because Sandoval County and the Albuquerque Metro region are home to numerous forest and agricultural lands and scientific research institutions, the county is an ideal location for mid- and long-term development of this sector.

LIFE SCIENCES

NICHE SECTORS

Biomedical Testing & Labs

Medical Suppliers

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Natural Resource Management Technology



Target Markets

Life Sciences businesses are located everywhere – but with higher concentrations in metropolitan areas with universities and research hospitals. Based on Sandoval County's relative competitive advantages in cost, workforce, and quality of life, strong target markets for marketing include:

- San Francisco Bay Area, CA
- Los Angeles, CA
- Boston, MA
- San Diego, CA
- New York, NY
- Trenton, NJ
- Philadelphia, PA
- Washington, DC

Why Sandoval County

- Sandoval County has two new hospitals – Presbyterian Rust Medical Center and University of New Mexico Sandoval Regional Medical Center – that are driving rapid growth in local Healthcare employment. The large Healthcare sector provides opportunities for other support sectors, including Biomedical Testing & Labs, Medical Suppliers, and Medical Technology.
- Sandoval County is one of the few communities in New Mexico with a growing population. The local population is also highly diverse and has residents across age groups – creating demand for healthcare services which in turn spur demand for related Life Sciences businesses. The diverse population makes it an attractive location for development and testing of MedTech.
- The national research labs, University of New Mexico, and other private organizations continue to conduct research in new materials, biological processes, and other technologies that have direct applications in the MedTech and Biomedical Testing sectors.
- Central New Mexico Community College offers career training in Life Sciences fields, and the University of New Mexico Sandoval Regional Medical Center is a major training facility for their healthcare students.
- Although part of the Albuquerque Metropolitan area, Sandoval County is home to large agricultural operations and forested lands – which offer hands-on opportunities for Natural Resource Management Technology companies to develop their products and services.

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LIFE SCIENCES

NICHE SECTORS

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- Sandoval County's location between two interstate highways and adjacent to the Albuquerque Metro make it an attractive location for Medical Suppliers whose customers are within the metro, state, and broader Western region.
- Sandoval County is relatively affordable and very family friendly – with some of the best schools in New Mexico – which makes it an attractive location for talented individuals and the companies seeking to hire and retain them.

PROFESSIONAL SERVICES & SUPPORT

NICHE SECTORS

Financial & Technology Support Centers

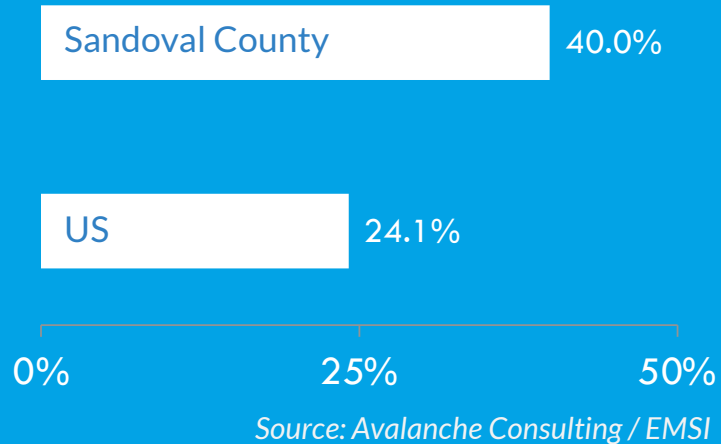
Cybersecurity

Warehousing & Distribution

Data Centers

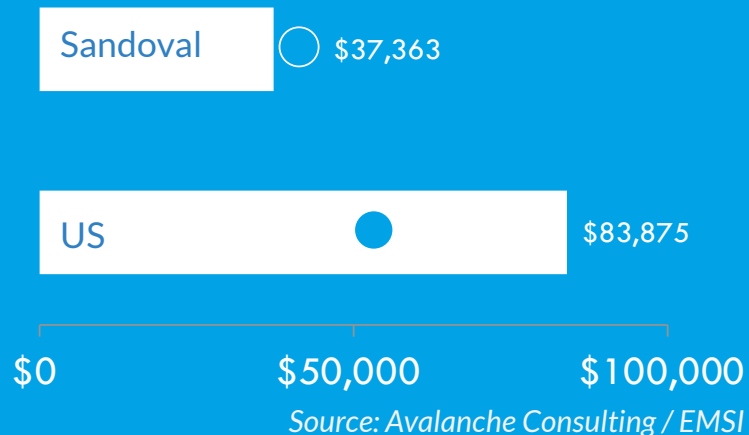


PROFESSIONAL SERVICES & SUPPORT EMPLOYMENT GROWTH, 2011-2016



PROFESSIONAL SERVICES & SUPPORT SALARY, 2016

AVERAGE SALARY OF ALL JOBS



Cluster Overview

The Professional Services & Support Office Support cluster encompasses a variety of operations that primarily serve other businesses and/or a specific role within a broader corporate structure. Specifically, the Professional Services & Support Office Support cluster includes Financial & Technology Support Centers, Cybersecurity, Warehousing & Distribution, and Data Centers.

Professional Services & Support jobs are currently highly concentrated in Sandoval county – with over 3,100 jobs and a Location Quotient (LQ) of 2.2. The cluster is also growing rapidly - 40% growth over the past five years compared to 24% nationally. Existing jobs in Sandoval County pay slightly below the county overall average salary, but nationally this cluster pays nearly double the local average salary.

Niche Sectors

Financial & Technology Support Centers – Financial & Technology Support Centers includes products and services related to the management of money as well as aligned activities in areas such as insurance, investment, and asset management. The Financial & Technology Support Centers cluster also includes support services such as administrative, accounting, and information technology support to larger organizations in a variety of industries. Financial & Technology Support firms may be separate, third-party entities that handle specific operations on behalf of external clients or internal departments within larger corporations.

After a period of prolonged turmoil in the wake of the Great Recession, this cluster is again thriving. In 2017, for example, profits for the largest US banks approached record levels. Relatively low interest rates, combined with increasingly confident businesses and consumers, have helped bolster lending.

PROFESSIONAL SERVICES & SUPPORT

NICHE SECTORS

Financial & Technology Support Centers

Cybersecurity

Warehousing & Distribution

Data Centers



An improved economic outlook has been complemented by a relaxed regulatory environment. Legislation passed in the aftermath of the economic downturn increased both the complexity and cost of regulatory compliance, while also limiting specific financial activities such as speculative investments. The current presidential administration, however, has voiced its intentions to rollback at least some of these provisions.

Sandoval County has a strong and growing Financial & Technology Support Center cluster, making this an immediate opportunity for development.

Cybersecurity – Cybersecurity is an emerging sector dedicated to securing computers, computer networks, and digital data from malicious actors. Cybersecurity threats include digital assaults that seek to disable computer networks, such as denial of service attacks, as well as hacks aimed at stealing sensitive or proprietary information.

As cybersecurity threats have increased in both severity and frequency, the cyber insurance market has grown substantially. According to the Insurance Information Institute, US businesses spent more than \$2 billion for cyber insurance in 2015. PricewaterhouseCoopers estimates the market will grow to \$7.5 billion by the decade's end.

The continued growth of the “internet of things” as well as cloud computing will drive future expansion in the cybersecurity sector. With everything from security cameras to refrigerators now connected to the internet, the number of devices at risk from cyber threats continues to increase. In 2016, for example, hackers gains access to the security cameras of 1.5 million users worldwide and deployed these devices to launch denial of service and ransomware attacks. At the same time, the rise of could computing means more and more sensitive information is now stored online.

This sector is emerging but presents an immediate opportunity for development based on local education and workforce strengths. Site availability may limit growth.

PROFESSIONAL SERVICES & SUPPORT

NICHE SECTORS

Financial & Technology Support Centers

Cybersecurity

Warehousing & Distribution

Data Centers



Warehousing & Distribution – The Warehousing & Distribution cluster has enjoyed strong growth during the past 25 years thanks rising global trade, a revitalized domestic manufacturing sector, and changing consumer preferences. The signing of the North American Free Trade Agreement (NAFTA) in 1994 helped usher in a era of new trade agreements between the US and foreign countries. More recently, the renewed vibrancy of domestic manufacturing has also contributed to growth. Since 2009, for example, the value of US exports has risen nearly 40%. Finally, Warehousing & Distribution benefitted from the rise of online commerce. A decade ago, Amazon had less than 4 million square feet of distribution space. Last year alone, Amazon added 15 million square feet to its fulfillment center network. During the past decade Warehousing & Distribution employment has increased 60% more than the overall US employment during the past decade.

Data Centers – Data Management includes storage, distribution, and analysis of large volumes of information. In recent years, there has been a global explosion in data production. According to an IBM analysis published in 2016, more than 90% of all data in the world was published in the past two years. As this data relies upon a vast network data centers, the rise in information production has fueled a boon in data center construction. According to a report by real brokerage CBRE, data center expenditures in the first half of 2017 topped \$18 billion, more than double all activity during the previous year. With a growing number of companies and consumers adopting cloud computing, the need for new and expanded Data Center facilities is expected to only further increase in the years ahead. According to an analysis by real estate firm JLL, the Data Management market is expected to double by 2021.

PROFESSIONAL SERVICES & SUPPORT

NICHE SECTORS

Financial & Technology Support Centers

Cybersecurity

Warehousing & Distribution

Data Centers



Why Sandoval County

- Sandoval County is home to a highly educated workforce that largely commutes to jobs outside of the county. 32% of residents hold a bachelor's degree or higher – but 75% of employed residents commute out each day – representing a pool of more than 43,000 workers that could be hired to work locally.
- When examining the broader labor shed, employers in Sandoval County can pull from a pool of 334,000 workers. Many of these workers have some form of post-secondary technical training.
- Sandoval County has a large bilingual workforce – more than 25% of the population speaks a language other than English – which provides strong options for Financial & Technology Support Centers who conduct business with a diverse client base.
- Central New Mexico Community College provided customized, on-site training for companies looking to promote professional development and boost the skills of their workforce. They also provide training for students in a range of Professional Services & Support fields, including Cybersecurity.
- The Albuquerque Metro region has a large research sector with strong ties to the defense sector which is investing heavily in cybersecurity.
- Sandoval County is relatively affordable compared to coastal markets – offering competitive pricing on real estate, a high quality of life, temperate weather, low crime and fantastic schools – all attractive to some Professional Services & Support businesses as they seek to attract and retain top talent and operate in a competitive business environment.
- Electricity is relatively affordable, and a large share is generated from solar power – an attractive trait for Data Centers.
- Sandoval County is not at risk for natural disasters or severe weather. The stable climate and location is highly attractive to Data Centers and other support operations.
- New Mexico's Job Training Incentive Program provides up to six months of on-the-job training for new positions in existing and expanding companies. In addition to free training, the program reimburses between 50% and 75% of employee wages.
- With improved highway connectivity, Sandoval County's geographic location make it convenient for Warehousing & Distribution businesses to reach interstates and rail that connect to all parts of the Western United States.

ADVANCED TECHNOLOGY & MANUFACTURING

NICHE SECTORS

Aerospace

Electronics Manufacturing

Metal Fabrication

Renewable Energy

Robotics



ADVANCED TECHNOLOGY & MANUFACTURING

ADVANCED TECHNOLOGY & MANUFACTURING SALARY, 2016

○ AVERAGE SALARY OF ALL JOBS

● Sandoval County \$115,000

US ● \$81,873

\$0 \$50,000 \$100,000 \$150,000

ADVANCED TECHNOLOGY & MANUFACTURING EMPLOYMENT LOCATION QUOTIENT, 2016

Sandoval County 3.0

ABQ 0.8

0 1 2 3 4

Source: Avalanche Consulting / EMSI

Cluster Overview

The Advanced Technology & Manufacturing cluster transforms raw materials into high-value components and finished products using complex machinery. Despite significant job losses during the Great Recession, America remains the world's second-largest manufacturer. Total Advanced Technology & Manufacturing employment in the US has increased for six consecutive years.

Competitive Advanced Technology & Manufacturing clusters leverage highly efficient operations and a skilled workforce to produce extremely sophisticated products such as aircraft engines. Firms typically employ costly, complex machinery that can only be operated by a workforce with specialized training. Such skilled workers often command a wage premium. Advanced Technology & Manufacturing operations are among the most sought-after clusters in the US due to their combination of elevated levels of capital investment and relatively high wages. Because of their desirability among communities, large-scale Advanced Technology & Manufacturing operations often seek aggressive incentive packages when exploring new locations.

The cluster is three times more concentrated in Sandoval County than the US average. In comparison, the cluster is 20% less concentrated in the Albuquerque Metro relative to the US. This cluster also pays an average salary well above other industries both locally and nationally.

Niche Sectors

Aerospace - Aerospace includes the development and manufacture of aircraft, engines, parts, missiles, and space vehicles. Aircraft manufacturing represents that largest Aerospace segment in the US. During the past decade, Aerospace has been one of the more resilient sectors of the US manufacturing industry. While US manufacturing employment declined between 2006 and 2016, Aerospace employment increased.

ADVANCED TECHNOLOGY & MANUFACTURING

NICHE SECTORS

Aerospace

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Metal Fabrication

Renewable Energy

Robotics



Strong passenger travel demand, especially throughout emerging international markets, is expected to fuel demand for a large number of new aircraft. According to projections from the Federal Aviation Administration (FAA), total passenger traffic between the US and the rest of the world is expected to jump from 229 million in 2017 to 467 million by 2037. According to the an analysis by Deloitte, there will be nearly 34,000 deliveries of new aircraft globally through 2035.

Beyond traditional markets, emerging Aerospace opportunities include unmanned aerial vehicles (UAVs). UAVs, commonly referred to as drones, represented a relatively small segment of the Aerospace cluster 10 years ago. In the years ahead, however, the segment is projected to experience substantial growth. According to projections by the Teal Group, the military UAV market more than double from \$4.2 billion to \$10.3 billion over the next decade.

Electronics Manufacturing – Electronics Manufacturing includes companies that sell computers, communications equipment, related peripherals, and supporting services. Electronics Manufacturing firms may be directly involved in computer assembly and production or simply design and market computers manufactured by contract suppliers.

The Electronics Manufacturing sector is highly innovative and requires significant investment in R&D. The sector also requires a skilled workforce. According to analysis by the Department of Commerce, Electronics Manufacturing employs the highest share of engineering among all manufacturing sectors. The industry's reliance on skilled workers has helped stabilize domestic employment after years of decline. Some of the largest technology firms in the US have also announced plans to bolster domestic Electronics Manufacturing. Earlier in 2017, for example, Apple announced a \$1 billion fund to support US advanced manufacturing operations.

Electronics Manufacturing is Sandoval County's largest private business sector and continues to present immediate opportunities for growth.

Metal Fabrication – Metal Fabrication involves the production of metal parts, machinery, or components by cutting, bending, assembling, and other processes. Fabricators typically specialize in a specific process based on expertise or client demand. As Metal Fabrication is vital to virtually all manufacturing sectors, the fortunes of the industry typically reflect the health of the US manufacturers at large. After a period of decline during the economic downturn, Metal Fabrication has subsequently rebounded; between 2011 and 2016, direct Metal Fabrication employment in the US increased by nearly 75,000.

Metal Fabrication is already a strong and stable employment sector in Sandoval County and presents immediate opportunities for development.

ADVANCED TECHNOLOGY & MANUFACTURING

NICHE SECTORS

Aerospace

Electronics Manufacturing

Metal Fabrication

Renewable Energy

Robotics



Renewable Energy – The Renewable Energy niche sector covers a broad range of activities focused on converting renewable energy resources into useable fuels and electricity, storing electricity, and transmitting electricity. This niche sector includes the direct manufacturing of components, equipment, and devices for creating renewable energy alongside related conservation products such as energy efficient household items. Efforts to make energy production and utilization more efficient are fueling innovations in motors and generators. The development of renewable energy resources had bolstered production of wind turbines, photovoltaic solar cells, and biological energy sources – the irregular production of renewable energy contributes to research into energy storage and battery technology.

Renewable Energy is a diverse and emerging sector and presents mid- and long-term development opportunities in Sandoval County.

Robotics – Robotics companies develop machinery capable of performing tasks that might otherwise be performed by human workers. While robots have been widely deployed in industrial settings such as automobile manufacturing for decades, their use has increased substantially in recent years. According to the International Federation of Robotics, the global supply of industrial robots has increased more than 75% during the past five years. The figure is projected to increase another 75% through 2020.

The rise of robotics is the result of several converging economic and technological dynamics. As the price of robotics hardware has fallen, their value proposition has become more compelling for US manufacturers. The resulting deployment of robotics boosted productivity and helped domestic manufacturing operations remain globally competitive. At the same time, advances in artificial intelligence and deep learning are making robots more adaptive to a variety of industrial settings. Cloud computing also provides today's robots with previously unattainable computational capabilities.

Robotics are a long-term development opportunity for Sandoval County – requiring continued real estate and workforce development efforts.

ADVANCED TECHNOLOGY & MANUFACTURING

NICHE SECTORS

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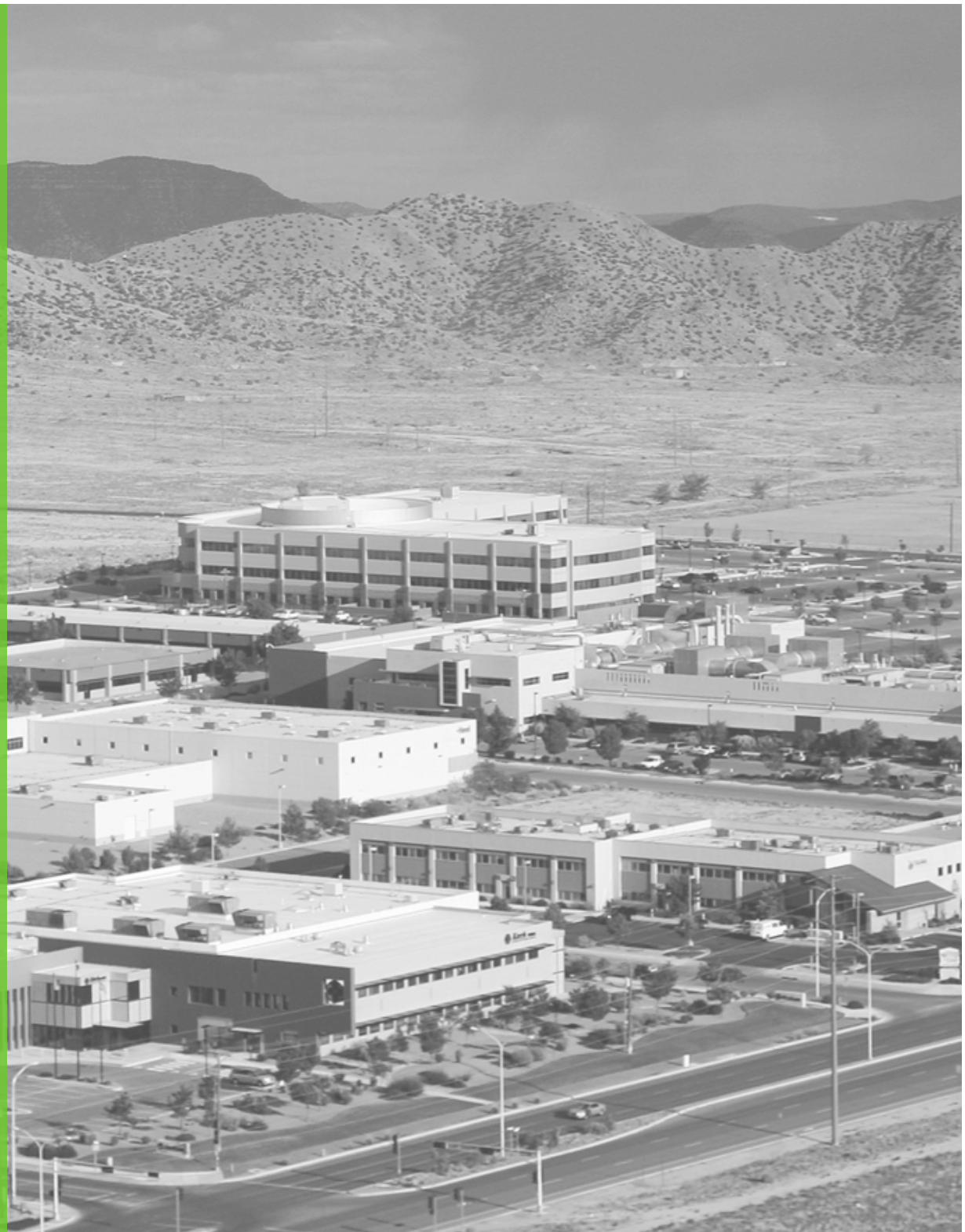
Robotics



Why Sandoval County

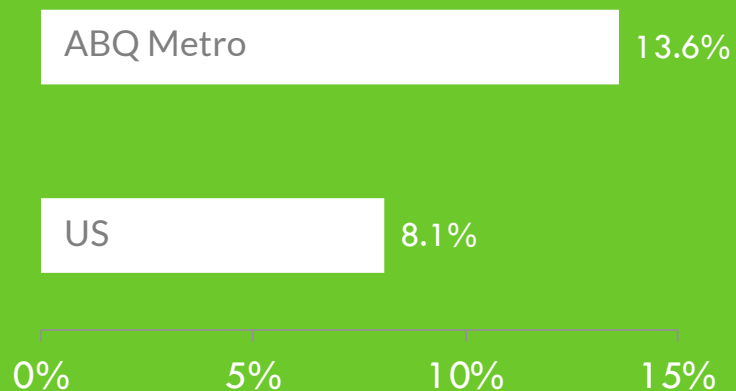
- Sandoval County has a highly concentrated existing cluster of manufacturing jobs – particularly in electronics manufacturing – demonstrating the competitive ability of the county to support Advanced Technology & Manufacturing operations. Layoffs at Intel were the result of internal changes in the business and global trade dynamics – not a result of concerns with Sandoval County. New product lines and business models at Intel could see a rebound of jobs, and the success of other related companies such as HP demonstrates the opportunities for growth in the county.
- The Albuquerque Metro region is a center for research and development in aerospace, defense, and other technical areas.
- The national labs in New Mexico continue to work on technology transfer – which has the potential to facilitate new Advanced Technology business formation and partnerships with private businesses.
- Sandia National Laboratories is home to the Photovoltaic Systems Evaluation Laboratory (PSEL) as well as the National Solar Thermal Test Facility, which provides engineering information to facilitate the the design, construction, and operation of proposed solar thermal electrical plants.
- Residents of Sandoval County are highly skilled and educated – with more than 35% completing some college or an associate degree and another 32% holding a bachelor's degree – 41% in a Science & Engineering field.
- Central New Mexico Community College and the University of New Mexico both have campuses in Sandoval County that currently provide relevant CTE and other training and are very responsive to employer needs – able to tailor programs to develop in-demand skills.
- Sandoval County's geographic location makes it easy to import and export raw materials and manufactured goods – with convenient highway, rail, and airport access through Albuquerque International Sunport and Double Eagle II Airport.
- The airspace above Sandoval County is unrestricted and allows for testing of aircraft and drones that cannot be performed in many locations.
- Utility rates are highly competitive within the Western United States.
- New Mexico offers a number of tax exemptions and credits to assist Advanced Technology & Manufacturing businesses – including the Aviation Tax Exemptions, Space Gross Receipts Tax Deduction, Technology Jobs and R&D Tax Credit, and Manufacturing Investment Tax Credit.

RESEARCH & DEVELOPMENT



RESEARCH & DEVELOPMENT

RESEARCH & DEVELOPMENT EMPLOYMENT GROWTH, 2011-2016



Source: Avalanche Consulting / EMSI

Cluster Overview

Research & Development involves the pursuit of new products and services. As the US economy has become increasingly knowledge-based, the number of Research & Development jobs continues to increase. Over the past 15 years, private Research & Development employment has increased three times faster than the overall US economy. Research & Development expenditures by US businesses currently exceed \$340 billion annually.

These activities are disproportionately concentrated in a handful of industries and locations. Just two clusters – Manufacturing and Software/IT – account for nearly 80% of domestic Research & Development expenditures – with manufacturing research focused on pharmaceuticals, electronics, automotive, and chemical production.

While not an independent target, Research & Development supports all three of Sandoval County's target clusters. Research & Development activities are highly concentrated in the Albuquerque Metro Region – directly employing nearly 13,000 residents – more than six times the average US concentration and growing 14% over the past five years (compared to 8% nationally). Federal funding for research at the Sandia National Laboratories continues to grow – despite declines across the nation and highly the competitive workforce and site strengths of the region. At \$90,000 in the Albuquerque Metro and \$103,000 nationally, Research & Development companies also pay salaries well above overall averages.

Why Sandoval County

- Both Sandia National Labs and Los Alamos National Labs are located immediately adjacent to Sandoval County. Combined these two labs received nearly \$4.5 billion in federal R&D funding in 2015. For the Albuquerque Metro this translated to \$2,900 in federal research spending per resident compared to \$57 per capita nationally.
- In 2015, the University of New Mexico spent \$232 million on R&D – with the highest shares going to Medical Sciences, Engineering, and Biological Sciences.
- Sandoval County is home to a high share of inventors – many of whom currently commute out of the county to jobs at research labs, the University of New Mexico, and other technology centers. From 2010 to 2015, 60 utility patents were awarded per 10,000 residents of Sandoval County – nearly three times the US average.