

PFLUGERVILLE COMPREHENSIVE ECONOMIC DEVELOPMENT STRATEGY

Chapter 2: Target Industry Analysis

NOVEMBER 2016

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ABOUT THIS STRATEGY

This Comprehensive Economic Development Strategy provides Pflugerville with a unified vision and strategic approach to achieving a robust, resilient economy over the next three years and beyond. The Strategy is designed to provide the Pflugerville Community Development Corporation (PCDC), City of Pflugerville (City), and other business, education, nonprofit, and public sector leaders with a cohesive action plan that ensures everyone is working in-step toward a shared vision and goals.

Once complete, the Comprehensive Economic Development Strategy will include three chapters:

Chapter 1, Community Assessment

This first chapter of the Strategy provides an in-depth trend analysis of Pflugerville's competitive position relative to the Austin metro, Texas, US, and six benchmark cities in comparative national metros. It also includes a SWOT (Strengths, Weaknesses, Opportunities, and Threats) Evaluation, combining the findings of the trend analysis with input received from the Strategy's Steering Committee and more than 50 local, regional and state stakeholders. A strategic vision, goals and recommendations begin to emerge from the findings of the SWOT.

Chapter 2, Target Industry Analysis

The Strategy's second chapter includes the consulting team's recommended target industries and niche sectors. Target industries and niches are those audiences that will be the focus of Pflugerville's economic development initiative, in terms of marketing, product development, and workforce development. The process of target industry selection blends a cluster and location quotient analysis with a review of data trends, SWOT evaluation, and on-the-ground examination of Pflugerville's assets.

Continued...



ABOUT THIS STRATEGY

Chapter 3, Strategic Action Plan

The Strategy's final chapter will recommend a three-year program of work that will advance Pflugerville's economy. It will set the community on-course for achieving its economic development vision and goals. The Strategic Action Plan will begin with profiles of national best practices from communities facing similar opportunities and target industries. The Action Plan will cover topics related to marketing, infrastructure, workforce development, public policy, quality of place, and other factors that affect Pflugerville's competitiveness. Each recommendation in the Action Plan will be accompanied by implementation tactics – timing, roles and responsibilities, and performance metrics. (*Note: This Chapter will be developed following completion of Chapters 1 and 2.*)

Special Focus, Workforce and Educational Institution Analysis

Access to talent is the top driver of business expansion and relocation decisions today. Understanding the dynamics of Austin region's workforce development and educational infrastructure will give Pflugerville a better informed advantage. As a supplement to the Comprehensive Economic Development Strategy, the consulting team offers a deeper dive into the talent-related assets available in Pflugerville's larger regional market.



STEERING COMMITTEE

Avalanche and PCDC would like to thank the strategic planning Steering Committee for helping inform and guide the development of this strategic plan. This diverse group of Pflugerville stakeholders ensured that strategic plan reflects the perspective and desires of the entire community.

(Note: We will add titles and organizations.)

Pflugerville Comprehensive Economic Development Strategy Steering Committee Members

Amanda Maegden	Jeff Coleman
Barth Timmerman	Jeff Travillion
Boris Milensky	Jeffrey Burratto
Brad Marshall	Amy Ellsworth
Brigid Shea	Mike Marsh
Carlton Inniss	Patricia Gervan-Brown
Charles Harvey	Renea Mitchell
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Clay Leben	Ron Moellenberg
Darren Strozewski	Rudy Metayer
Dilip Naik	Ryan Merritt
Donnie Vanelli	Terri Toledo
Dr. Alex Torrez	Tiffany Daniels
Father Craig DeYoung	Victor Gonzales
Heather Biagas	Wade Lindstrom
Jacquelyn Smith	Zane Cole
Janice Heath	



INTRODUCTION

This chapter of the strategy opens with an in-depth examination of the industry clusters currently present in Pflugerville and the Austin metropolitan region. This analysis builds on the competitive strengths identified in Chapter 1 to help identify target industry clusters that present the greatest opportunities for primary job growth in Pflugerville.

The chapter continues with a discussion of how and why target clusters are identified and the recommended target industry clusters and niche sectors for Pflugerville's economic development efforts.

The chapter concludes with target cluster profiles. These profiles provide an overview description of each cluster, global factors affecting the industry, local and regional employment and salary trends, a summary of the factors that affect the cluster's growth, and sales messages that explain why the cluster makes sense in Pflugerville.



INDUSTRY CLUSTER PERFORMANCE



INDUSTRY CLUSTER INTRODUCTION

The Performance Evaluation begins with an analysis of Pflugerville's overall industry cluster trends in recent years. Examining the performance of both the community's and larger region's industry clusters provides insight into Pflugerville's strengths and opportunities.

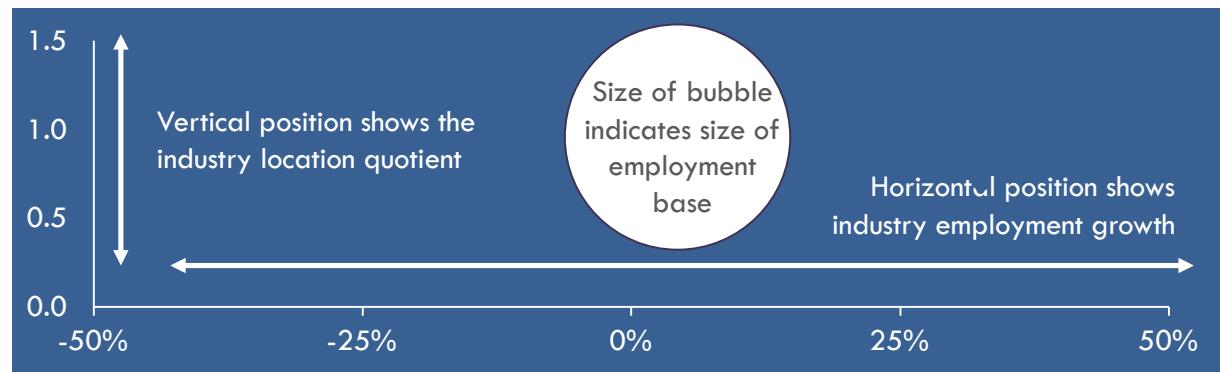
This analysis looked at location quotients (LQs), industry cluster employment, new job creation, and growth rates for thirty industry clusters within Pflugerville. Fast-growing clusters, for example, often reflect immediate opportunities for recruitment and expansion efforts. Clusters that are more concentrated in the region relative to the US average may reflect regional advantages such as skilled workforce or geographic advantage than can be leveraged for future economic development efforts.

The bubble charts on the following pages should be interpreted as follows:

Horizontal Axis: Employment growth rate for the past five years.

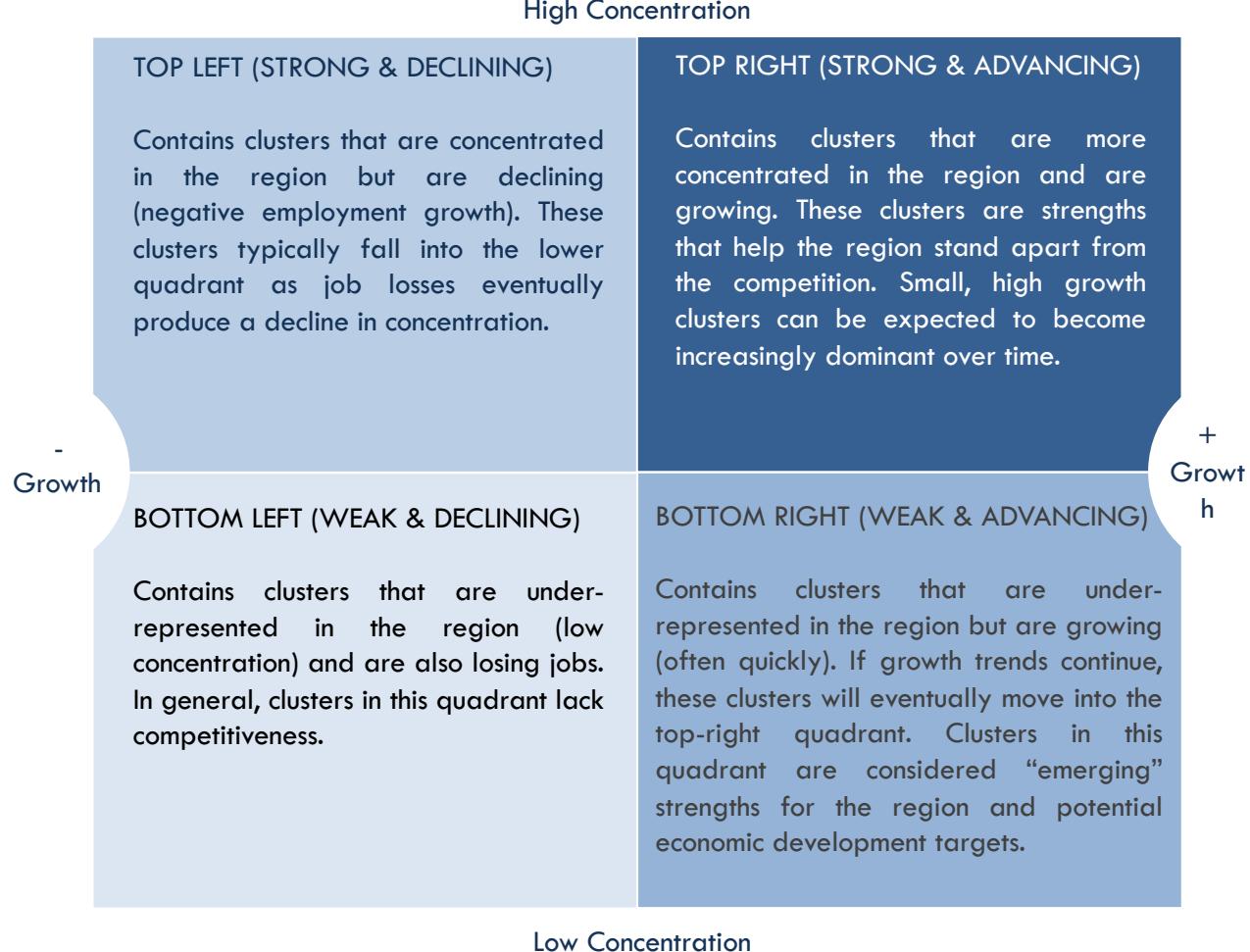
Vertical Axis: The Location Quotient (LQ). LQs calculate the relative concentration of industry jobs in a community compared to the US average. An LQ of 1.0 indicates the same concentration as the US average. An LQ above 1.0 is more concentrated than the US average, aka that the cluster has more jobs per capita.

Size of Bubble: Total employment in each cluster.



INDUSTRY CLUSTER STORIES

The chart's four quadrants each tell a story:



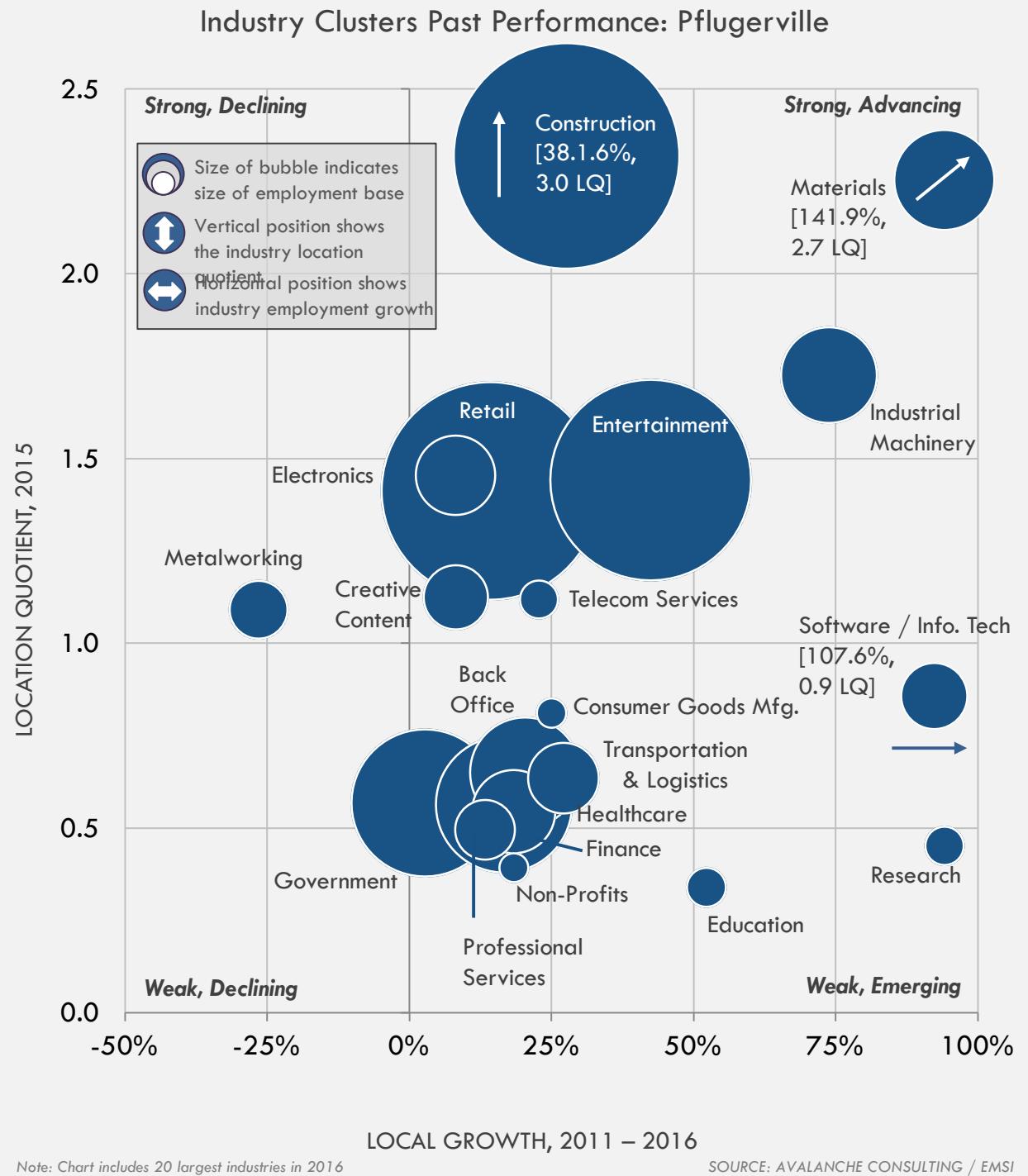
PFLUGERVILLE RECENT PERFORMANCE

Pflugerville is home to approximately 15,500 jobs. Between 2011 and 2016, total employment in the city increased 24% - with all industry clusters growing except Metalworking.

The largest industry clusters in Pflugerville are Construction (3,050 jobs), Retail (2,900), Entertainment (2,475 jobs), Government (1,350 jobs), and Healthcare (1,150 jobs). These five clusters account for more than 70% of employment within Pflugerville and are reflective of a traditional bedroom community. Rapid housing growth fuels Construction employment. Residential population growth in turn fuels Retail and Entertainment, and Government, which is comprised largely of school district jobs, also serving residents.

Over the past five years, several smaller, primary employment clusters were the fastest growing in Pflugerville. From 2011 to 2016, Materials employment grew 142%. Software & Information Technology and Research employment increased by 107% and 94% respectively. Industrial Machinery employment rose nearly 75%.

The most concentrated industries (as a share of all jobs) in Pflugerville are Construction (3.0 LQ), Materials (2.7 LQ), and Industrial Machinery (1.7 LQ). On a per capita basis, Pflugerville also has more Retail and Entertainment employment relative to the US average.



AUSTIN METRO RECENT PERFORMANCE

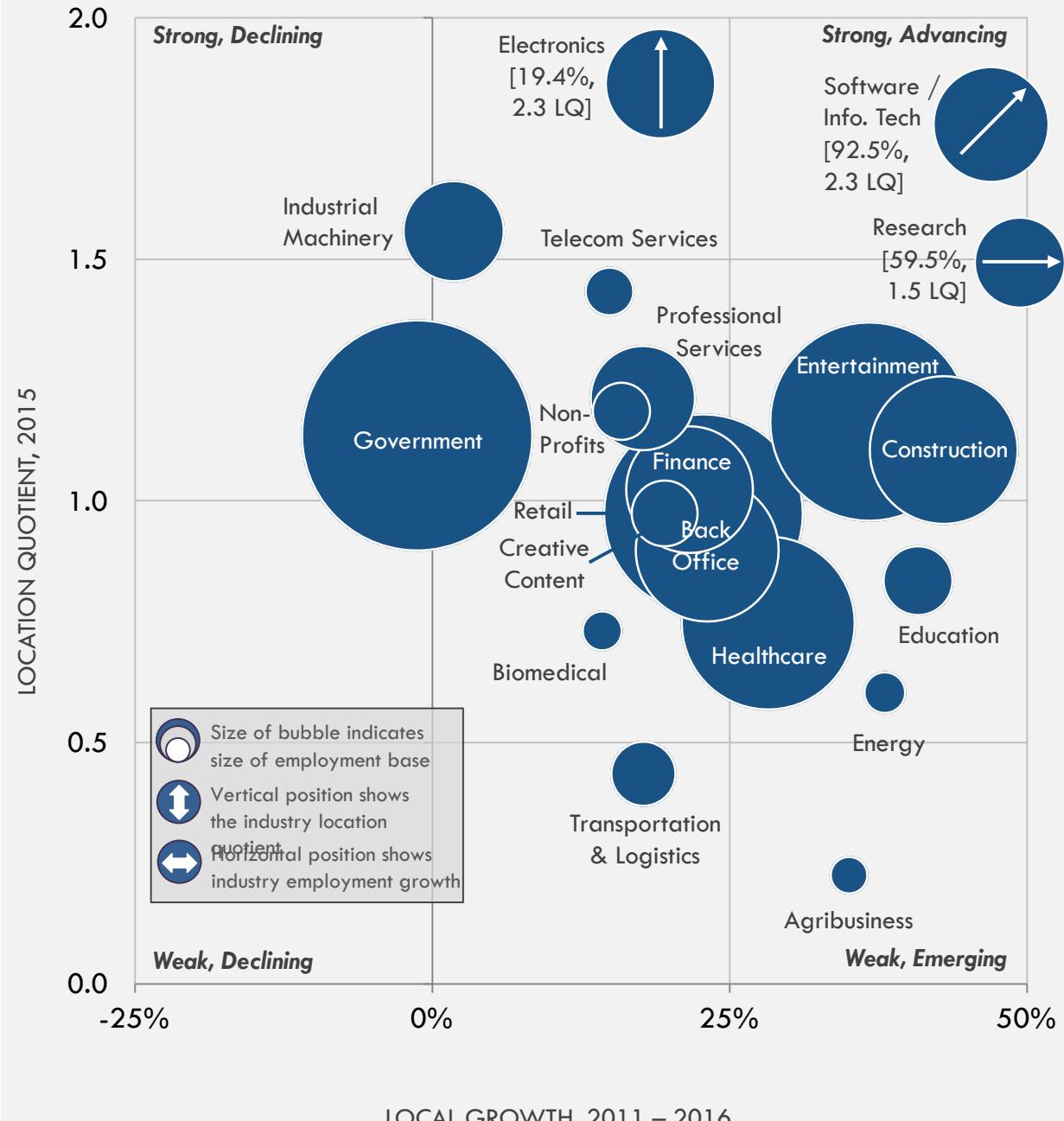
There are approximately 960,000 jobs in the Austin Metro. Over the past five years, the Austin metro has been one of the country's fast growing regions. Employment grew more than 22% from 2011 to 2016. Growth has been broad-based, with nearly every cluster creating jobs.

Many of Austin's largest industries are the same as Pflugerville's, including Government (165,950 jobs), Retail (124,000), Entertainment (123,675 jobs), and Healthcare (94,250 jobs). These four clusters, however, account for barely half of employment within the Austin metro.

In recent years, the Austin metro has created high-skill, high-wage jobs as well as consumer-oriented clusters that benefit from strong population growth. Software & Information Technology employment increased by more than 90% from 2011 to 2016. Research employment rose by nearly 60%. Construction and Entertainment employment grew by 43% and 37% respectively.

The most concentrated clusters in the Austin metro include Electronics (2.3 LQ), Software & Information Technology (2.3 LQ), Industrial Machinery (1.6 LQ), and Research (1.5 LQ).

Industry Clusters Past Performance: Austin Metro



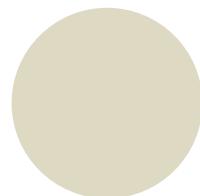
TARGET CLUSTER IDENTIFICATION



CLUSTER EVALUATION & SELECTION

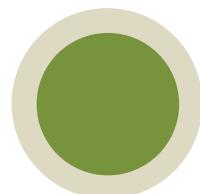
Target selection is not an exact science – no single mathematical formula can perfectly identify target clusters. Target selection is instead an iterative process – combining both quantitative and qualitative information. Through a process of data analysis and conversations within the community, target clusters and supporting niche sectors are identified and tailored to each community's needs and opportunities.

Target cluster selection is driven by four primary questions that serve as filters in the selection process:



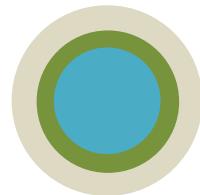
1. Is the cluster employment growing and projected to grow within the city, region, and the US?

Examining national and international trends helps understand if the target cluster will continue to grow and create opportunities in Pflugerville.



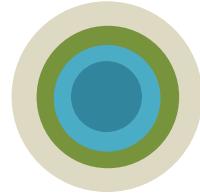
2. What clusters have an existing presence in the region?

Clusters with an existing concentration in the region reflect local competitive strengths and present some of the best opportunities for expansion, recruitment, and startup growth.



3. Which clusters are best suited to the city's assets?

The strategic planning process identified Pflugerville's strengths, challenges, and assets – summarized in Chapter 1. The ability of these assets to support cluster ecosystems and expanded activity was an important filter.



4. Which clusters align with the city's goals and values?

Each cluster was evaluated on whether it reinforces the goals and values identified by Pflugerville residents and leaders through conversations and focus groups in the strategic planning process.



TARGET CLUSTER SELECTION

Following the review and selection process outlined in this chapter, Avalanche recommends the following four target clusters for Pflugerville.

- Advanced Manufacturing
- Professional Technology Services
- Supply Chain Businesses
- Headquarters

These targets provide high-growth opportunities for a variety of residents and communities within Pflugerville.

Niche sectors in each cluster are identified as special opportunities unique to Pflugerville.

TARGET CLUSTER



ADVANCED MANUFACTURING

NICHE SECTORS

Additives

Advanced Materials & Technologies

Aerospace & Defense Technology

Cleantech Production

Computer & Electronic Parts

Medical Devices



PROFESSIONAL TECHNOLOGY SERVICES

Gaming & Mobile Applications

Healthcare Information Technology

Research & Development

Software/IT



SUPPLY CHAIN BUSINESSES

Data Storage & Analytics

Financial Services

Office Support Services

Warehousing & Distribution



HEADQUARTERS



TARGET ALIGNMENT

When examining potential target clusters for Pflugerville, it was important to consider how each industry fit into the broader regional and state economic development efforts.

Opportunity Austin, the regional economic development organization, and Team Texas, the statewide marketing agency, have identified key industries on which they focus their economic development efforts and resources. These industries were identified based on the competitive advantages for each in the Austin metro and the State of Texas.

Not every statewide target industry and niche sector has a place in Pflugerville, but it is important to ensure that each Pflugerville target cluster fits within the broader regional and state framework. This will ensure that Pflugerville is an integral part of the regional and state identity and can effectively utilize marketing, educational, financial, and other resources available from these larger organizations.

At the same time, it is essential to highlight the assets and opportunities that make Pflugerville unique within each of these broader target clusters. When a business in one of these targets is considering expanding or relocating in Texas or Austin, we must ensure that Pflugerville at the top of their list of locations.

TARGET CLUSTER ALIGNMENT

PFLUGERVILLE	OPPORTUNITY AUSTIN	TEAM TEXAS
ADVANCED MANUFACTURING	ADVANCED MANUFACTURING	ADVANCED TECHNOLOGY & MANUFACTURING
PROFESSIONAL TECHNOLOGY SERVICES	CLEAN ENERGY & POWER TECHNOLOGY SPACE TECHNOLOGY	ENERGY AEROSPACE, AVIATION, & DEFENSE
SUPPLY CHAIN BUSINESSES	LIFE SCIENCES CREATIVE & DIGITAL MEDIA TECHNOLOGY	BIOTECHNOLOGY & LIFE SCIENCES INFORMATION & COMPUTER TECHNOLOGY
HEADQUARTERS	CORPORATE HEADQUARTERS & REGIONAL OFFICES	PETROLEUM REFINING & CHEMICAL PRODUCTION



TARGET CLUSTER PROFILES

The Target Cluster Profiles on the following pages provide detailed information about each recommended target cluster for Pflugerville. The profiles include an overview of each cluster, describing the dynamics of the cluster, global forces affecting it, business and workforce needs, and local and national trends. A recommended “Development Approach” indicates whether a cluster should be targeted through recruitment, expansion, or startup programs. Each profile concludes with a series of sales messages highlighting competitive opportunities within Pflugerville that can facilitate business development efforts.

These profiles are intended to educate local leadership about each cluster, their niche sector opportunities, and the factors that will influence their growth within Pflugerville. The profiles will also arm the Pflugerville Community Development Corporation with information and marketing materials to help support business expansion, startup, and recruitment activities in each cluster.



ADVANCED MANUFACTURING

NICHE SECTORS

Additives

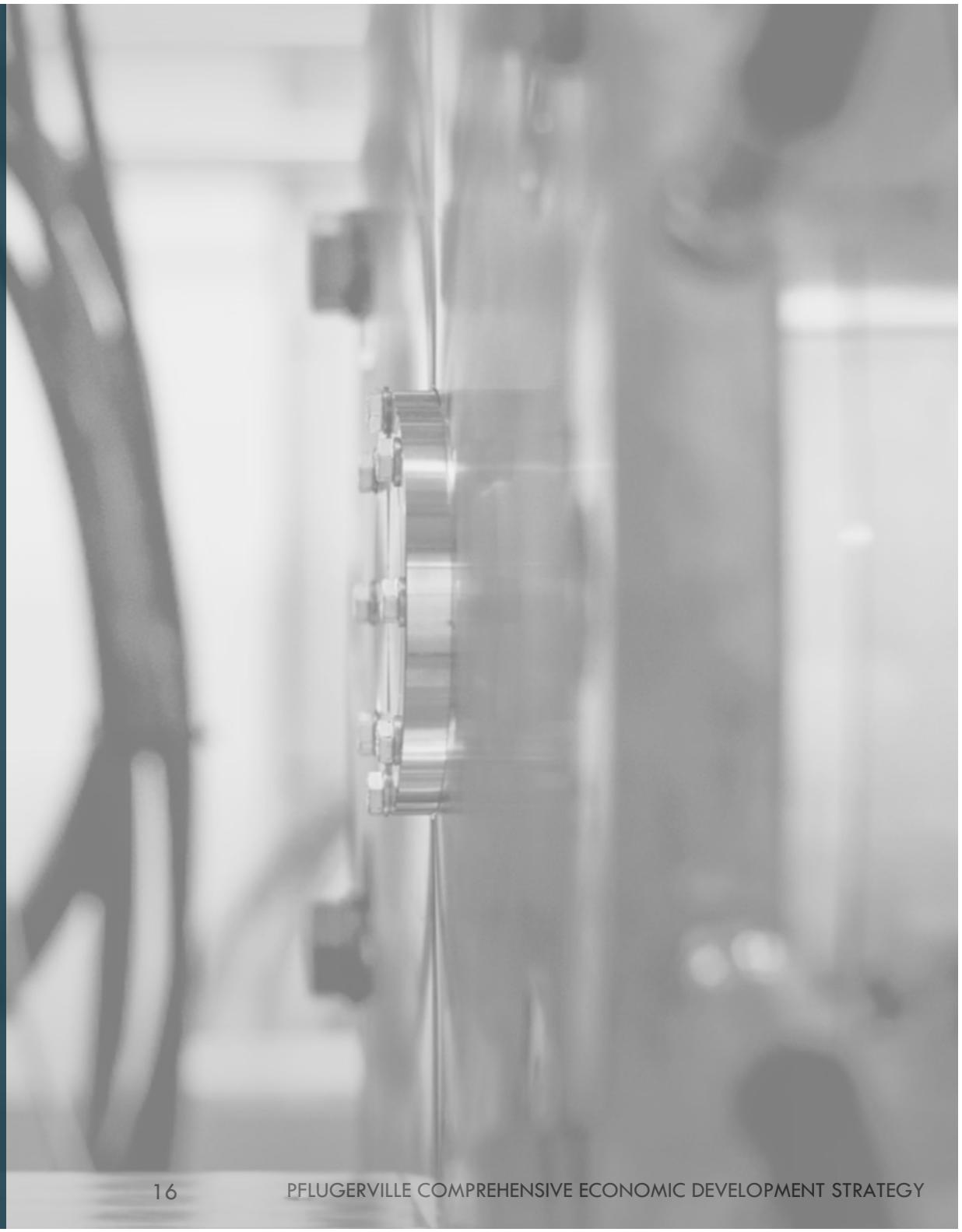
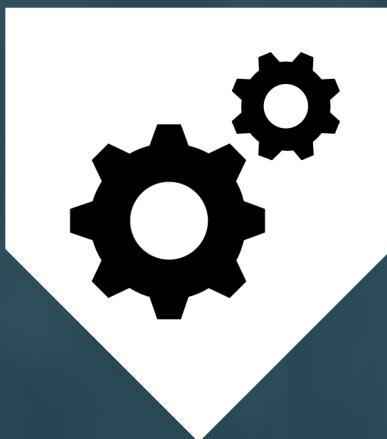
Advanced Materials & Technologies

Aerospace & Defense Technology

Cleantech Production

Computer & Electronic Parts Manufacturing

Medical Devices



ADVANCED MANUFACTURING

NICHE SECTORS

Additives

Advanced Materials & Technologies

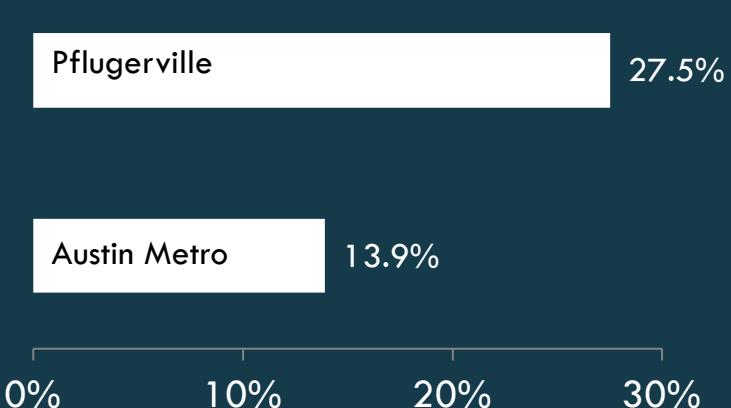
Aerospace & Defense Technology

Cleantech Production

Computer & Electronic Parts Manufacturing

Medical Devices

MANUFACTURING EMPLOYMENT GROWTH, 2011-2016



Cluster Overview

Advanced Manufacturing is the transformation of raw materials into component pieces and finished products using complex machinery. Despite widespread negative media stories, the death of US manufacturing is often exaggerated. Manufacturing employment contracted during the Great Recession, but the US remains the world's second-largest manufacturer after China. Additionally, manufacturing employment has increased for five consecutive years in the US – the best performance in the last 30 years. The cluster currently employs approximately 12.3 million individuals in the US.

US Advanced Manufacturing operations remain globally competitive thanks to substantial gains in productivity. This productivity is driven by efficient operations and an increasingly skilled workforce. Firms typically utilize complex and expensive machinery that require skilled workers with specialized training. A growing demand for these skills supports relatively high wages in the cluster. Advanced Manufacturing's capital intensive nature and strong wage levels make the sector highly attractive to communities throughout the US. As a result, Advanced Manufacturing is among the country's most highly sought clusters.

Advanced Manufacturing operations require specific infrastructure and workforce support. Locations with a skilled, low-cost workforce and plentiful, affordable energy supplies are critical in maximizing productivity and reducing costs. Specific Advanced Manufacturing niche sectors may also require sizable water and wastewater capacity. To help facilitate delivery of and finished products, Advanced Manufacturing firms often locate in close proximity to an interstate. They may also require sites with rail access to facilitate the transport of raw materials. Due to the increasing sophistication of the corporate site selection process, aggressive incentives packages are often required to recruit large-scale Advanced Manufacturing operations.

Global Forces

Beginning in the 1970s, domestic manufacturing employment began to decline in the wake of offshoring to lower costs environments. Recently, however, **US Manufacturing has enjoyed a resurgence** as domestic production has become more globally competitive. **Increased automation** and the continued **adoption of robotics** have helped make US Manufacturers the world's most productive. Stagnant wages at home and **rising foreign labor costs** have increased the cost competitiveness of US workers, though a stronger dollar has recently emerged as a headwind to growth. **Declining energy prices** have lowered the cost of US production and transportation. US manufacturers also benefit from growing concerns about **lax intellectual property protection overseas**.

ADVANCED MANUFACTURING

NICHE SECTORS

Additives

Advanced Materials & Technologies

Aerospace & Defense Technology

Cleantech Production

Computer & Electronic Parts Manufacturing

Medical Devices

AVERAGE MANUFACTURING SALARY, 2016

○ AVERAGE SALARY OF ALL JOBS



Niche Sectors

Additives – Manufacturing has traditionally involved creating component parts and then assembling these pieces into a finished product or new component. Additive manufacturing involves the production of an object by placing ultrathin layers of material on top of one another. Additive manufacturing has long been used to quickly and inexpensively create prototypes. In recent years, Additive manufacturing has also been adopted in the manufacturing of custom objects such as dental implants. Additives use far fewer materials than conventional manufacturing techniques, resulting in lighter products and significant cost savings. As a result, Additive Manufacturing is becoming increasingly common in advanced industries such as aerospace. General Electric, for example, recently incorporated additive components into its aviation products. Continued advances in Additives are projected to drive growth across a variety of industries, including motor vehicles, medical supplies, and consumer products.

Advanced Materials & Technologies – Advanced Materials & Technologies encompasses the research, development, manufacturing, and application of new materials derived from innovations in metal, polymers, glasses, composites, and textiles. Advanced Materials are also used in many different industries. The rise of Additives and the need for lighter, stronger component materials in automobiles and aircraft contributes to the demand for advanced composite materials and new alloys. The ability of Advanced Materials to enhance or replace natural functions has also created new opportunities in the area of healthcare. Greater incorporation of technology into textiles has lead to the creation of “functional fabrics” with novel properties such as exceptional flame resistance, extraordinary strength, or sensing capabilities.

Aerospace & Defense Technology – Aerospace & Defense Technology encompasses a diverse range of activities, including the development and manufacture of aircraft, engines, parts, missiles, and space vehicles. A global increase in consumer air passenger traffic, combined with technological advances in unmanned aerial vehicles (UAVs), Aerospace has been one of the more resilient sectors of the US manufacturing industry during the past decade. The continued growth of international air travel demand is expected to fuel sustained growth in new aircraft production. Additionally, the emerging UAV market is projected to nearly double during the next 10 years.

ADVANCED MANUFACTURING

NICHE SECTORS

Additives

Advanced Materials & Technologies

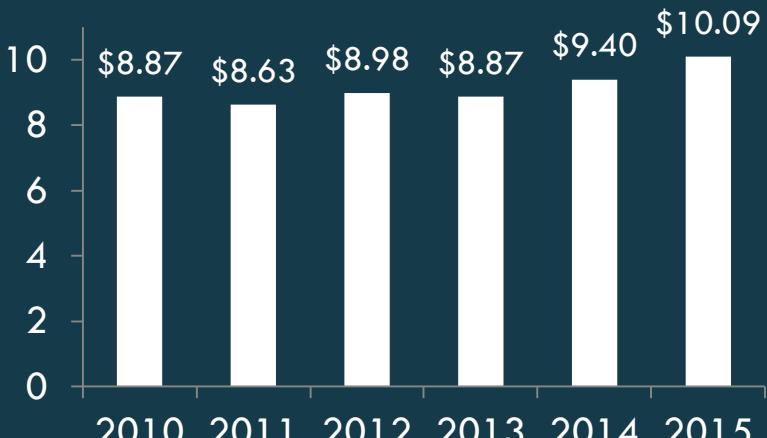
Aerospace & Defense Technology

Cleantech Production

Computer & Electronic Parts Manufacturing

Medical Devices

AUSTIN METRO MANUFACTURING EXPORTS, 2010-2015 (IN BILLIONS)



Niche Sectors

Cleantech Production – Cleantech Production is a broad industry cluster that involves the manufacturing of various products that reduce carbon output through innovations in transportation, energy production and transmission, and energy efficiency. With more than 200 existing companies employing 20,000 workers, the Austin region is already an established Cleantech leader thanks to a strong research university, an existing technology cluster, and Texas' extensive energy expertise. Global demand for Cleantech products continues to increase as a result of more stringent environmental regulations. The landmark Paris Agreement, which involves nearly 200 countries that account for more than half of greenhouse gas emissions throughout the world, will require the US to significantly reduce emissions by 2025. Such pressures have already helped triple renewable energy production within Texas during the past decade. Increased fuel economy standards have also contributed to the growth of the electric vehicle market; since 2011, sales of plug-in electric vehicles have increased six-fold. The growing adoption of smart grid technologies by both energy producers and consumers – fueled by regulation and cost-saving potential – is also contributing to the growth of Cleantech Production sector.

Computer & Electronic Parts Manufacturing – Computer & Electric Parts Manufacturing includes the production of individual components and finished products that typically feature integrated circuits. In recent years, Computer & Electric Parts Manufacturing employment growth has been driven by the integration of electronics in a variety of products. 30 years ago, for example, electric components represented less than 5% of automobile production costs. Today, the figure exceeds 25% and can be much higher for hybrids. Other areas of growth include mobile devices, healthcare, communications, and data processing. In the past several years, Central Texas has proven adept at supporting the Computer & Electronic Parts Manufacturing cluster; since 2011, employment in the Austin metro and Pflugerville has increased 19% and 8 % respectively.

Medical Devices – Medical Devices include a variety of products, from basic items such as surgical gloves and instruments to remarkably complex medical diagnostic tools. Research and development is critical to the industry; Medical Device R&D investment is more than twice the average for all manufacturing sectors. As a result, Medical Device companies often cluster in regions with established technology sectors. In recent years, growth in the Medical Device industry has been fueled by three broad trends. At home, the aging of the US population assures a growing market for a variety of healthcare products, including Medical Devices. Abroad, rising incomes in developing countries are creating new market opportunities for Medical Device manufacturers. Finally, technological advances are contributing to entirely new product categories such as wearable technologies.

ADVANCED MANUFACTURING

NICHE SECTORS

Additives

Advanced Materials & Technologies

Aerospace & Defense Technology

Cleantech Production

Computer & Electronic Parts Manufacturing

Medical Devices

Local Sales Messages

- Pflugerville has an existing base of manufacturing companies that are growing faster than the Austin metro and present opportunities to expand. The broader Austin region also has a large existing cluster – with nearly 60,000 manufacturing jobs and exports in Computer Equipment, Semiconductors, Industrial Machinery, Precision Instruments, and more.
- Pflugerville's geographic location and highway infrastructure make it an ideal location for manufacturers importing components and exporting finished products. The city has easy access via SH-130, IH-35, and SH-45, and it is close to Austin Bergstrom International Airport and the Austin Executive Airport.
- Pflugerville has secured water rights for the foreseeable future and has a long-term infrastructure plan that will ensure a reliable and affordable supply of water to businesses. Pflugerville also offers deregulated electricity at rates below the regional average.
- Pflugerville has greenfield properties at a much more affordable price than many communities throughout the Austin region. PCDC and local partners can act quickly to make sites shovel-ready. Current zoning allows for certain light industrial uses, but may limit the types of Advanced Manufacturing users that can locate in Pflugerville.
- The Dell Medical School is currently under construction down the highway from Pflugerville and, when tied with ongoing research activities at the University of Texas, will present numerous opportunities to advance the region's already large medical device manufacturing sector.
- The Department of Defense announced plans to establish a Defense Innovation Unit Experimental (DIUx) office in Austin that will focus on identifying innovative manufacturing and technology solutions to the nation's defense challenges.
- Pflugerville has a high concentration of working age veterans and residents with associate degrees –revealing a workforce that is attractive to many manufacturing employers with a balanced mix of both skilled trade workers and advanced degree holders.
- Pflugerville benefits from dozens of educational institutions in the region that provide training and degrees to support manufacturing operations – including technical training at ACC and EWCHEC and advanced engineering degrees at UT and Texas State University.
- The State of Texas, Team Texas, and Opportunity Austin all actively support manufacturing expansion, innovation, and recruitment.

PROFESSIONAL TECHNOLOGY SERVICES

NICHE SECTORS

Gaming & Mobile Applications

Healthcare Information Technology

Research & Development

Software/IT



PROFESSIONAL TECHNOLOGY SERVICES

NICHE SECTORS

Gaming & Mobile Applications

Healthcare Information Technology

Research & Development

Software/IT

PROFESSIONAL TECHNOLOGY SERVICES EMPLOYMENT GROWTH, 2011-2016

Pflugerville 107.6%

Austin Metro 77.0%

0% 50% 100% 150%

Cluster Overview

Professional Technology Services includes software production, mobile game and application development, computer systems research and development, computer systems design, data security, and technology consulting services. Fueled by growth in a variety of niche clusters, Professional Services Technology employment increased three times faster than the overall job market between 2011 and 2016.

Professional Technology Services firms require minimal infrastructure support. Instead, talent availability and financing are paramount. In many parts of the US, the Professional Technology Services workforce is insufficient to meet the demand for skilled positions. As a result, Professional Technology Services often cluster in regions boasting a major university that can provide a continuous supply of new workers with the latest computer programming skills. Locations with smaller, more specialized schools with celebrated computer science programs are also attractive to prospective Professional Technology Services firms.

Venture capital financing is also critical to supporting local Professional Technology firms. The most successful Professional Technology Services ultimately hope to establish a dominant presence in their field. Doing so, however, often requires years of forgone profitability. Venture capital is vital in sustaining operations during this period. Although venture capital is highly concentrated in San Francisco and San Jose, smaller tech hubs such as Austin are developing local venture capital networks.

Global Forces

Many companies are adopting a “mobile first” strategy that prioritizes Mobile Applications above desktop-based experiences. The trend reflect changing consumer behavior. **October 2016 marked the first time mobile and tablet devices accounted for more web traffic than desktop and laptop computers.** The rise of non-traditional computing devices also includes the **Internet of Things**, consumer objects such as watches and thermostats that are connected to digital networks. **The growing ubiquity of devices with access to highly personal information also creates new cyber security risks;** in 2016, maliciously hacked webcams caused one of the largest cyber-attacks in history. The incident underscores **the need for advanced cyber security capabilities in so-called smart objects.**

PROFESSIONAL TECHNOLOGY SERVICES

NICHE SECTORS

Gaming & Mobile Applications

Healthcare Information Technology

Research & Development

Software/IT

ESTIMATED AVERAGE PROFESSIONAL TECHNOLOGY SERVICES SALARY, 2016

○ AVERAGE SALARY OF ALL JOBS



Niche Sectors

Gaming & Mobile Applications – Mobile Applications are so central to the smartphone ecosystem it seems hard to believe that Apple launched the original iPhone in the absence of any third-party applications. Since then, more than 3 million Mobile Applications have been developed for Apple's App Store and Google Play Stores. Today, Mobile Applications represent a \$120 billion market. The growth of Mobile Applications has also helped bolster the market for Gaming Applications; games represent approximately 25% of apps available from Apple's App Store. The Gaming industry continues to thrive thanks to an increasingly broad demographic appeal and a multi-channel strategy that provides consumers with multiple opportunities for play. The market for games continues to expand beyond the traditional base of young males – today adult women are the largest consumers of digital games. The gaming industry has also benefitted from exposure across multiple platforms, including mobile phones, traditional computers, and dedicated consoles. Looking ahead, future growth in Gaming & Mobile Applications is likely to come from areas such as mobile payment services, Health IT apps, and new virtual reality devices.

Healthcare Information Technology – The US healthcare industry is largely immune to broader macroeconomics trends – driven instead by demographics and technological innovation. Regardless of the state of the overall economy, healthcare spending continues to increase. With an estimated 10,000 Baby Boomers becoming eligible for Medicare every day for the next 15 years, demographic dynamics are all but certain to drive further increases in domestic health care spending in the years ahead. According to federal government projections, within a decade healthcare will capture \$1 of every \$5 spent in the US. Healthcare Information Technology provides a range of software and services to support the expand provision of medical care.

As an emerging cluster, Healthcare Information Technology has no formal definition. In general, however, Healthcare Information Technology encompasses services such as patient record and insurance document management, data storage and predictive analytics of medical care and clinical trial results, medical hardware such as wearable devices, and specialized software to facilitate treatment, monitor activity, and improve patient outcomes. While delivering on the full promise of Healthcare Information Technology is likely to take many years, investors are already signaling the cluster's potential. According to the *Wall Street Journal*, for example, medical venture capital funding in the US hit a record \$3.9 billion in the first quarter of 2015. The resulting greater availability of health-oriented venture capital is helping fuel growth in new Healthcare Information Technology companies.

PROFESSIONAL TECHNOLOGY SERVICES

NICHE SECTORS

Gaming & Mobile Applications

Healthcare Information Technology

Research & Development

Software/IT

BUSINESS RESEARCH & DEVELOPMENT SPENDING PER \$1 MILLION GROSS REGIONAL PRODUCT, 2013



Niche Sectors

Research & Development – Research & Development involves the process of scientific discovery in attempt to develop new products and services. As the US economy has become increasingly knowledge based, the number of R&D jobs has continued to increase; during the past 15 years, private R&D employment has increased three times faster than the US average for all industries. R&D expenditures by US businesses currently exceeded \$340 billion annually. Such spending is disproportionately concentrated in a handful of industries and locations. Just two clusters – Manufacturing and Software/IT – account for nearly 80% domestic R&D expenditures. Additionally, half of all R&D spending in the US is absorbed by five states, including Texas. As a percentage of regional gross domestic product, the Austin metropolitan area has the highest level of corporate R&D expenditures within the Lone Star State. Unsurprisingly, the Austin metro also produces more patents on a per capita basis than any other region in Texas. The Austin metro also outperforms most metropolitan areas in the US on patent productivity, and Pflugerville has a uniquely high share of patent inventors within the region.

Software/IT – In recent years, global sales of personal computers have slowed as more consumers utilize tablets and mobile phones for personal and business computing. As a result, the enterprise market has assumed an ever-larger role for Software/IT products and services. Big data and cloud computing are especially notable drivers of growth. The ubiquity of computer technology has propelled an exponential increase in data production. By providing companies with the power to analyze vast volumes of data, Big data can help identify patterns and leverage predictive analytics to identify future outcomes. Market opportunities in areas such as Finance, Health Care, and Government are likely to drive additional demand for Big Data in the years ahead. The increased production of information has also contributed to growth in cloud computing, which allows users to outsource the management, processing, and storage of data to off-site third-party vendors. Cloud computing helps companies quickly scale their operations based on real-time demand. Amazon's web services division, for example, is responsible for delivering content for both Netflix and Instagram. As more and more sensitive information is moved to the cloud, the demand for ever more sophisticated cyber security software also increases. In the past year alone, hackers gained access to 500 million Yahoo email accounts, up to 80 million personal records from the second-largest health insurance firm in the US, and 25 million personnel files from the federal Office of Personal Management. Hackers even gained access to the personal email account of the FBI Director, further underscoring the country's need for improved cybersecurity capabilities.

PROFESSIONAL TECHNOLOGY SERVICES

NICHE SECTORS

Gaming & Mobile Applications

Healthcare Information Technology

Research & Development

Software/IT

Local Sales Messages

- Professional Technology Services are primarily dependent on hiring and retaining a highly educated and skilled workforce, and Pflugerville benefits from a large, well-educated workforce that lives in the city in addition to a labor pool of 800,000 skilled workers spread across the Austin region.
- Pflugerville is central in the Austin region, one of the nation's largest and fastest growing technology centers – attracting thousands of new professional workers every week and supporting the operations of a diverse base of homegrown and international technology companies from Facebook to Google to Apple.
- The Austin region is one of the most innovative in the country, with research and new product development occurring across public and private organizations, including the University of Texas, one of the nation's largest research universities.
- Residents of Pflugerville are some of the most innovative in America. Pflugerville has a remarkably high concentration of these patent holders with 134 applicants per 10,000 jobs, compared to 7 per 10,000 jobs in Austin.
- Pflugerville residents are highly entrepreneurial – with an above average concentration of small businesses and self-employed individuals.
- Within the Austin, Pflugerville offers some of the most affordable, centrally located land for office development – with the potential to support startups through construction of smaller, co-working and shared office space and also attract large technology companies seeking to build campus environments.
- Pflugerville offers a family-friendly, high quality of life with numerous outdoor recreation opportunities and excellent schools, which makes the city an attractive location for many technology workers to live, work, and play.
- The Austin region has numerous incubators and organizations such as Austin Tech Incubator that encourage and support the development of new software and technology companies throughout the region.
- The development of the Austin Innovation District along IH-35 near the Dell Medical School will bring further technological innovation to the region, and with close proximity, Pflugerville has an opportunity to build physical and business connectivity to the district.

SUPPLY CHAIN BUSINESSES

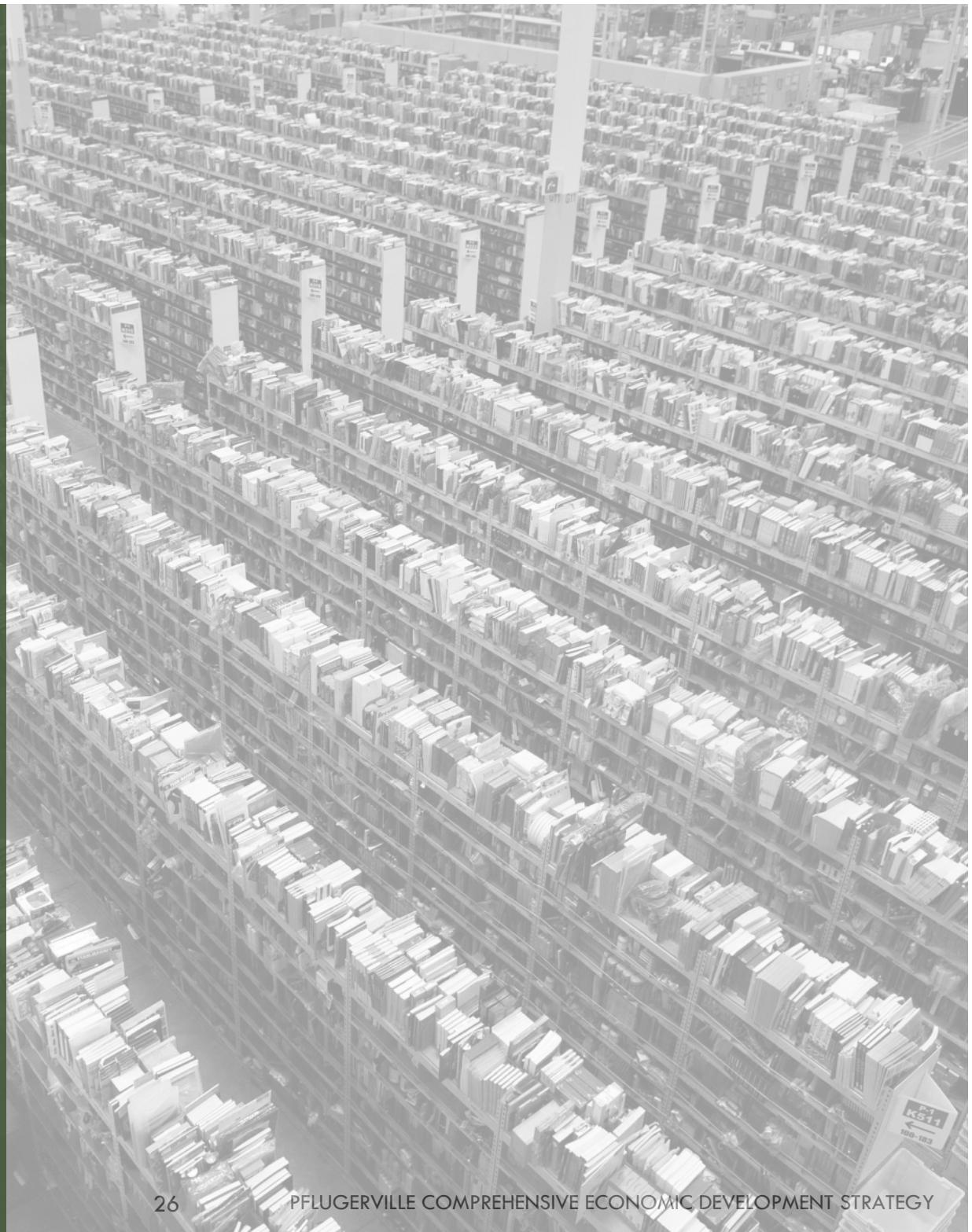
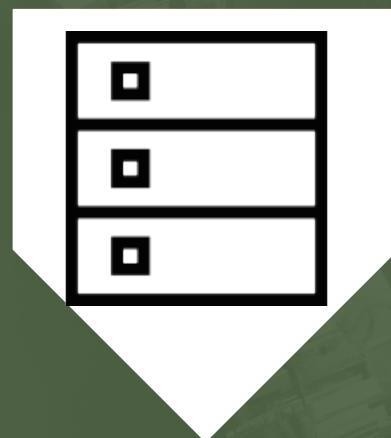
NICHE SECTORS

Data Management

Financial Services

Office Support Services

Warehousing & Distribution



SUPPLY CHAIN BUSINESSES

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SUPPLY CHAIN BUSINESSES EMPLOYMENT GROWTH, 2011-2016

Pflugerville 20.4%

Austin Metro 24.3%

18% 20% 22% 24% 26%

Cluster Overview

Supply Chain Businesses include an array operations that are central to a major metropolitan economy. Specifically, the cluster includes Data Management, Financial Services, Office Support Services, and Warehousing & Distribution. Growth in Supply Chain Businesses typically relates to broader economic trends within a region. Supply Chain Businesses in Central Texas, for example, benefit from regional and statewide gains in population and economic activity. Corporate expansion throughout Texas fuels demand for Data Management Services. Strong population and job growth requires additional Warehousing & Distribution capacity. A greater Financial Services presence helps facilitate increased commercial and consumer monetary needs.

Over the past five years Supply Chain Business employment in Pflugerville and the Austin metro have increased by 20% and 24% respectively. Increased real estate development within the Austin metro's urban core, which has fueled substantial increases in land costs while reducing available inventory, may increasingly favor outlying communities. As Supply Chain Businesses increasingly search for Central Texas locations featuring lower labor and real estate costs, large pools of skilled workers, and less congested road networks, locales such as Pflugerville are well-positioned to capture additional growth.

Global Forces

The rise of cloud computing, combined with a continued increase in the number of devices capable of producing data, has propelled an explosion in information worldwide; according to an estimate from IBM, **90% of all information ever created has been produced in just the past two years**. In an attempt to broaden their digital ecosystems into new areas, the dominant information technology firms are beginning to enter the Financial Services market. The entrance of new players such as Square, Apple, Samsung, and Google into payment services only underscore growing competition from non-banks and an increased emphasis on technological innovation within Financial Services. Younger consumers are especially wary of existing Financial Services offerings—**one third of Millennials don't think they will need a bank in five years. A growing number of Americans are also increasingly wary of free trade**. Already, the globalization trends of the past two decades are showing signs of strain; despite a growing economy, US international trade declined in 2015. The recent completion of the **Panama Canal** expansion may provide a boost to the Warehousing & Distribution cluster. Regardless of global trends in trade, regions with strong population and employment growth will enjoy continued Warehousing & Distribution growth.

SUPPLY CHAIN BUSINESSES

NICHE SECTORS

Data Management

Financial Services

Office Support Services

Warehousing & Distribution

AVERAGE SUPPLY CHAIN BUSINESSES SALARY, 2016

○ AVERAGE SALARY OF ALL JOBS

Pflugerville

○ \$54,009

Austin Metro

○ \$68,865

\$0 \$20,000 \$40,000 \$60,000 \$80,000

Niche Sectors

Data Management & Analytics – Data Management includes storage, distribution, and analysis of vast volumes of information. The explosion of global data production has fueled substantial growth in the demand for Data Management facilities. During the past year, Google announced plans for 10 new data centers. In an effort to lessen its reliance on Amazon, Apple has embarked on a multi-billion dollar data center building campaign. Next year, Microsoft will open two new data centers, including one in San Antonio. With a growing number of companies and consumers adopting cloud computing, the need for new and expanded Data Management facilities is expected to only further increase in the years ahead. According to an analysis by real estate firm JJL, the Data Management market is expected to double by 2021. The Austin region continues to offer Data Management firms with a very attractive operating environment. Central Texas features very competitive interest rates, extensive telecommunications infrastructure, relative safety from natural disasters, and a large existing technology cluster. Within the region, Pflugerville offers deregulated and relatively affordable electricity.

Financial Services – Financial Services includes products and services related to the management of money and aligned activities such as insurance, investment, and asset management. The Financial Services cluster also includes support services such as data and management and customer service centers. Since the turmoil of the economic downturn, the Financial Services sector has stabilized. A changing regulatory and competitive landscape, however, present both new opportunities and challenges. Legislation passed in the wake of the Great Recession has increased both the complexity and cost of regulatory compliance, while also limiting specific financial activities such as speculative investments. Such changes, however, have helped support growth in areas such as compliance and risk management. Low interest rates—long seen as a drag on revenue—haven't precluded profits; in 2016, US banks reported their most profitable quarter ever. With the Federal Reserve looking to soon raise interest rates for only the second time in the past decade, 2017 may usher in a period of even greater Financial Services revenues. Already, sustained economic growth has also contributed expanded consumer lending (though commercial lending remains largely flat). In the longer-term, technology will create new markets. With cybersecurity threats increasingly in both severity and frequency, cyber insurance will be a growing market. 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 sharing economy may lead to new products for home and automobile insurance. The integration of Financial Services and Information, dubbed Fintech, promises to disrupt traditional banking by introducing new payment platforms, leveraging data analytics to reduce cost and more accurately assess risk, and revolutionizing the manner in which financial transactions are facilitated.

SUPPLY CHAIN BUSINESSES

NICHE SECTORS

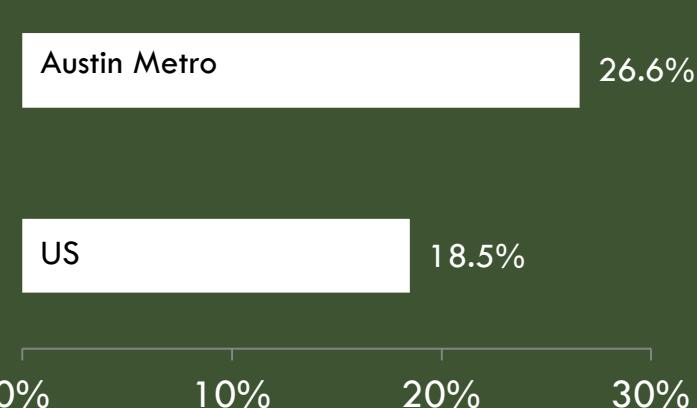
Data Management

Financial Services

Office Support Services

Warehousing & Distribution

CHANGE IN VALUE OF COMMODITY FREIGHT SHIPMENTS (ALL MODES), 2007-2012



Niche Sectors

Office Support Services – Office Support Services provide administrative, accounting, and information technology support to larger organizations in a variety of industries. Office Support Services firms may be separate, third-party entities that handle specific operations on behalf of external clients or internal departments within larger corporations. For example, while the trading desk of the largest financial services firms are typically located in New York City, the billing and sales operations are often situated elsewhere. In addition to banking and insurance, demand for Office Support Services is also fueled by the healthcare industry. The continued growth and complexity of US healthcare system supports a sustained need for services such as medical record management and regulatory compliance. Office support services are typically attracted to locations with competitive labor and real estate costs, a pro-business tax and regulatory environment, and a moderately-skilled workforce.

Warehousing & Distribution – Over the past quarter century, the Warehousing & Distribution cluster has enjoyed robust growth thanks a dramatic rise in global trade, a revitalized domestic manufacturing sector, and evolving consumer preferences. The North American Free Trade Agreement (NAFTA), signed in 1994, helped usher in a era of new trade agreements between the US and foreign countries. The US currently has free trade agreements with 20 countries collectively representing 35% of the global economy, a figure that could rise to 75% if recently negotiated agreements are ratified by the US. In recent years, the resurgence of domestic manufacturing has also contributed Warehousing & Distribution growth. After decade of decline, US manufacturing is once again expanding; since 2009, the value of US exports has soared 44%. Finally, Warehousing & Distribution has also benefited from the growth of online commerce. In 2007, after more than a decade of operations, Amazon had less than 4 million square feet of distribution space. In 2016 alone, Amazon added 15 million square feet to its fulfillment center network. These three trends—global trade, manufacturing production, and e-commerce—have supported significant employment growth. During the past decade Warehousing & Distribution employment has increased 60% more than the overall US employment during the past decade. Communities in Texas, which features one of the county's fastest growing economies and populations, remain well-positioned to capture additional Warehousing & Distribution jobs.

SUPPLY CHAIN BUSINESSES

NICHE SECTORS

Data Management

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Warehousing & Distribution

Local Sales Messages

- Pflugerville is one of the fastest growing cities in America located in one of the fastest growing metropolitan regions. The rapid growth of residents and businesses creates continuous demand for a range of business services to maintain supply chains that fuel this growth. Services in demand include data management, accounting and finance, warehousing and distribution, and much more.
- As the urban core and larger existing office centers in the Austin region grow increasingly crowded and expensive, supply chain businesses must seek more affordable and logically connected locations in the region.
- Pflugerville presents a range of assets to support supply chain businesses in the Austin region:
 - Geographic proximity to the urban core and employment centers across the metro.
 - Convenient transportation access to all parts of the Austin region and the rest of Texas via SH-130, IH-35, SH-45, and other highways.
 - Proximity and quick access to the Austin Executive Airport and Austin Bergstrom International Airport
 - Relatively affordable appropriately zoned land for office and distribution activities along the SH-130 corridor and elsewhere
 - Pflugerville offers deregulated electricity at rates below the regional average – making it one of the most cost competitive communities in the region.
- Well established and flexible supportive educational programs at ACC, EWCHEC, UT, Texas State, and other regional colleges and universities support all sectors.
- Supply Chain Businesses present well-paying employment opportunities for a range of skillsets – from certificates and associate degrees to bachelor's and master's – allowing all Pflugerville residents to find opportunities for career development.
- Pflugerville has developed a long-term plan to supply water for businesses and residents. Combined with reliable power and telecommunications infrastructure, the city is a competitive location for data centers and other utility dependent operations.

HEADQUARTERS



HEADQUARTERS

Overview

Headquarters include both corporate and public sector facilities. Headquarters are typically located in communities with a large workforce, extensive transportation infrastructure, plentiful and affordable real estate, and high-speed broadband availability. With a labor force characterized by moderate- and high-skill positions, headquarters require locations with ample talent. Close proximity to major thoroughfares and highways helps headquarters draw from an even larger pool of workers. The presence of a major airport with direct connections to facilities in other parts of the country may also be desirable. Physically, headquarters are often built in Class A office structures and utilize a campus design, which requires large tracts of land for development development. Given the modern economy's reliance on digital communication, high-speed internet connections with abundant bandwidth are an absolute requirement.

Global Forces

During the past decade, corporations have become increasingly sophisticated in their site selection strategies. Traditionally, the largest US companies largely remained rooted in their original hometown. With companies becoming more globally oriented and communities adopting more aggressive tax incentive policies, corporate relocations have become more common. In 2016, for example, General Electric was offered more than \$150 million dollars in incentives to relocate its corporate headquarters to Boston. For smaller companies, relocations are less often driven by specific tax incentives and instead a community's business operating environment. States in the Sunbelt, including Texas, have been especially effective in attracting corporate headquarters. Similarly, the locations of regional offices are typically motivated less by incentives but rather a competitive cost of doing business. Regional offices are also more likely to be located in relative proximity to a company's customer base. Other company specific requirements, such as the availability of a multi-lingual workforce, may also play a role in the site selection process.

Many local and state government offices were built in locations central to the urban core when land costs were lower and transportation access was easier. In recent years, many cities and states have relocated large office operations and specific departments outside of urban cores. The trend has been fueled by the prospect of expensive renovations to aging buildings, the outward migration of workers to the suburbs, and potential financial windfalls from the sale of increasingly expensive land within the city center.

HEADQUARTERS

Local Sales Messages

- Pflugerville is a highly attractive destination for corporate headquarters, regional offices, and government department centers – offering a high quality of life, competitive business environment, and supportive infrastructure.
- Texas is consistently ranked one of the best states for business in the nation – with no personal or corporate income tax and a competitive regulatory environment that makes it an attractive place to operate large corporate businesses.
- Pflugerville is a physically attractive community that offers an increasingly diverse housing stock that is attractive to the range of workers that operate headquarters – including business leaders, managers, and professional workers.
- The retail options for dining and shopping continue grow and diversity in the city, making it a more attractive location for attracting employees, entertaining clients, and lunchtime dining options for a large, headquarters employment center.
- Within the Austin region, Pflugerville offers a unique combination of proximity to the urban core, affordable greenfield land, and infrastructure ready for development. This attributes make the city a rare location in the Austin region for a company or government office to establish a large campus or other office facility.
- The presence of the Austin Executive Airport on the end of town can provide easy access for executives and clients visiting a headquarters located in Pflugerville. Austin Bergstrom International Airport is also in close proximity with an increasing number of international flights to markets in Europe and Asia.