

Bigger. Better. **Texas.**

*Blueprint to build a stronger
Texas of tomorrow*

Statewide Economic Development
Strategic Plan: 2025 – 2029



Texas Economic Development & Tourism Office
Office of the Governor



TABLE OF CONTENTS

- EXECUTIVE SUMMARY** 6
- TEXAS TODAY**
 - Texas Economic Overview 11
- BETTER TOGETHER**
 - Texas Economic Development Ecosystem 25
- BLUEPRINT FOR A STRONGER TEXAS OF TOMORROW** 33
 - BUSINESS AND INDUSTRY**
 - Objectives and Action Items 36
 - INNOVATION AND ENTREPRENEURSHIP**
 - Objectives and Action Items 43
 - WORKFORCE**
 - Objectives and Action Items 49
 - INFRASTRUCTURE**
 - Objectives and Action Items 55
- CONCLUSION** 58
- REFERENCE: TEXAS BY THE NUMBERS** 59
- ACKNOWLEDGMENTS** 61
- APPENDIX A: REGIONAL PROFILES** 64
- APPENDIX B: TARGET SECTOR PROFILES** 86
- APPENDIX C: PROCESS AND METHODOLOGY** 138
- APPENDIX D: DEFINITION OF KEY TERMS**
 - Texas Counties by Regions; Industries with Clusters 146
- APPENDIX E: REFERENCES** 153

Quantitative and qualitative research, including stakeholder interviews, performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.



GOVERNOR GREG ABBOTT

January 2025

My Fellow Texans,

We are blessed to live in Texas. Our state has risen to historic heights as a national leader in population growth, employment, business, industry, and overall economic expansion. We have also firmly established ourselves as a leader in the global economy, competing at the highest level and driving the conversation in critical industries such as advanced manufacturing, aerospace and aviation, energy, technology, and more. Now the eighth-largest economy in the world, we proudly compete on the international stage with a clear message: Texas is and will remain a global economic powerhouse.

Texas is one of the best places in the world to do business thanks to our business-friendly environment, our young, skilled, diverse, and growing workforce, and our robust infrastructure and transportation systems. It is easy to understand why more people and businesses are choosing to make Texas their home. We are outpacing the nation in job growth, with more Texans employed than at any other point in our great state's history. Our rich blending of cultures, friendly people, thriving industries, and unique geographical location ensures our state offers something for everyone seeking the opportunity to aspire and thrive.

Texas has a strong, diversified economy, with a variety of industry hubs represented across all regions of our state. We are globally recognized as a leading producer of oil and gas and are the largest exporter of semiconductors and other electric components in the United States. Our state is also home to other important sectors, including cutting-edge biotechnology and medical research, a thriving hospitality and tourism industry, an emerging supply of critical minerals and rare earths, and a robust network of corporate operations.

While we are already experiencing great success in our established industries and realizing a wealth of emerging opportunities across our regions, there is more work to be done to ensure we expand the path to prosperity for more Texas families and further secure Texas' position as a global economic leader. This statewide economic development strategic plan establishes a blueprint to help our state, our businesses, and our residents capture the promise of our future economy. As always, we will work collaboratively to build on our momentum, capitalize on opportunities, and invest in our future. Together, we can ensure Texas remains a beacon of innovation and opportunity as we build an even stronger Texas of tomorrow.

Sincerely,

A handwritten signature in black ink that reads "Greg Abbott".

Greg Abbott
Governor



GOVERNOR GREG ABBOTT
TEXAS ECONOMIC DEVELOPMENT & TOURISM OFFICE

Dear Texas Economic Development Partners and Friends,

Texas has enjoyed record-breaking economic success over the last decade. We've seen extraordinary growth in a variety of industries, maintained a healthy employment market, and created more jobs than at any other point in our state's history. And word is getting out — we've seen the mighty Texas economy become increasingly attractive to national and international businesses alike. We can proudly claim the Lone Star State plays an important and distinctive role within our national and increasingly interconnected global economy.

To build on this momentum and capitalize on the opportunities before us, we will continue evolving our approach to economic development and work together to ensure we can create an even better future for the Texans of tomorrow. From the community college educator to the oil rig worker and from the small business owner to our local government and state agency partners, everyone has a role to play. Economic development is a team sport that works best when we collaborate and bring our unique perspectives and respective pieces of the puzzle together.

That's exactly why we have developed this statewide economic development strategic plan — "**Bigger. Better. Texas.**" — with the broader economic development ecosystem in mind. Throughout our year-long strategic plan development process, we've heard directly from Texans representing all regions of the state to better understand the challenges and opportunities facing our economy and our diverse communities. Rigorous analysis and a robust stakeholder engagement effort informed the four pillars of economic development outlined in our plan and the goals that support them. In this plan, we explore opportunities to expand our success in the following core areas:

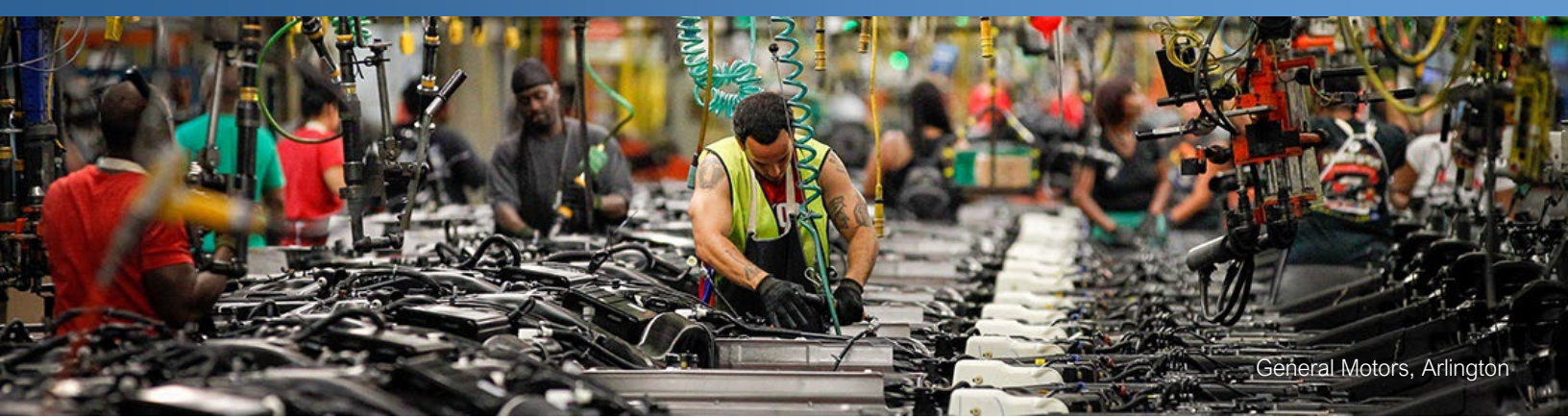
- **Business and Industry:** Texas' businesses and industries are the foundation of our economy and create jobs for Texans. The plan will help us to strengthen and accelerate our economic growth through targeted business support, expansion, attraction, and retention efforts.
- **Innovation and Entrepreneurship:** A robust innovation and entrepreneurship landscape is an essential component of building the Texas of the future. The plan will encourage identification and promotion of assets that foster innovation and support entrepreneurs to ensure we remain a global leader.
- **Workforce:** Texas' young, skilled, diverse, and growing workforce is the power behind our economic growth. This strategic plan will help inform resources that prepare our workforce to meet industry needs and drive business growth.
- **Infrastructure:** Reliable, extensive infrastructure is critical to supporting continued population and industry growth. This plan will signal support for the development of infrastructure that is resilient and equipped to meet community and industry needs.

Under Governor Abbott's leadership, our office is more motivated than ever to continue our ongoing work to ensure Texas is home to thriving regions and industries, but we recognize that we can't do it on our own. This is the Texas way — we work collaboratively to create and maintain an environment that is business friendly, internationally competitive, and rich in opportunity. I invite you to join us in our mission to further cement Texas' position as a global economic powerhouse and ensure our state remains the very best place to live, work, and visit.

Sincerely,

A handwritten signature in blue ink, appearing to read "Adriana Cruz".

Adriana Cruz
Executive Director, Texas Economic Development & Tourism Office



ABOUT THIS DOCUMENT

“Bigger. Better. Texas.” is our five-year economic development strategic plan for the state of Texas and our blueprint for continued economic prosperity. The plan establishes a unifying vision for the future of our economy, identifies target industry sectors and clusters that are expected to drive strategic economic growth and job creation, outlines objectives and initiatives to advance the state’s international competitiveness, and provides data and recommendations to inform economic development decisions across the state.

Why did we develop this strategic plan?

Texas has enjoyed extraordinary economic success in the past decade. Our gross domestic product (GDP) and workforce growth has outpaced that of the United States, and Texas continues to reach new heights in all-time records for total jobs. We have an internationally recognized business climate and are regularly ranked as a top state to start, relocate, and expand a business. If Texas were a country, we would have the eighth-largest economy in the world — larger than Russia, Canada, Italy, and many others.

However, this outstanding growth has come with challenges to overcome, such as ensuring infrastructure capacity, maintaining cost-of-living affordability, and promoting job growth and economic opportunities across all regions. To maintain our competitive edge in the years ahead, Texas needs a forward-looking economic development strategic plan that guides the actions of the Texas Economic Development & Tourism Office (EDT) and offers a vision that economic development partners and organizations across our state can rally around. The plan reflects Texas’ unique approach to economic development — not dictating priorities to communities or unduly influencing the free market, but rather, creating an environment in which communities, industries, and businesses can lead the way to growth and prosperity.

How did we develop the plan?

“Bigger. Better. Texas.” began with a months-long study that incorporated thorough reviews of local and regional economic development plans from across the state, in-depth economic analysis, rigorous evaluation of strong and emerging industry sectors and clusters, and extensive stakeholder engagement. EDT spearheaded this effort with the support and collaboration of state agencies, business and community leaders, regional representatives, and statewide associations. The following key inputs informed development of the plan:

- **Strategic Plans Related to Economic Development:** To better understand the priorities and needs of Texas’ diverse communities, the team compiled and reviewed over 40 plans related to economic development created by organizations at the state, regional, and local level. In our review,

we identified themes, priorities, and focus industries included in the plans to ensure that this statewide economic development strategic plan integrates the perspectives of each of our unique regions.

- **Quantitative Analysis:** The team gathered and analyzed a wide variety of information to understand the current state and future trajectory of our economy and workforce, including data on demographic trends, peer states and countries, industry performance, workforce needs, and the innovation and entrepreneurship landscape in Texas. After establishing an in-depth understanding of the current state of our economy, the project team executed a close analysis and refresh of our state's target sectors and clusters that are expected to drive strategic growth.
- **Stakeholder Engagement:** Throughout every step of the year-long process, the team complemented economic and industry analysis with stakeholder engagement. A combination of regular Steering Committee and Advisory Board meetings, one-on-one interviews, and focus groups with individuals and organizations reflecting the breadth and diversity of Texas allowed the project team to solicit qualitative feedback and inputs around economic analyses in real time.

These quantitative and qualitative inputs came together to guide the development of the vision, objectives, and initiatives outlined in the plan. (Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.)

What does the strategic plan contain?

The plan includes the following three main sections, which provide a summary of findings from our analyses and stakeholder engagement, illustrate the broad ecosystem driving economic development in Texas, introduce the unifying vision for the future of our economy, and detail the objectives and initiatives that will enable us to realize our vision:

- **Texas Today:** A good economic development strategic plan must first establish where we are and where we've been before charting a path forward. This section provides a foundational snapshot of our state's economy through the lens of our four economic development pillars: businesses and industry, innovation and entrepreneurship, workforce, and infrastructure.
- **Better Together:** Economic development is a team sport in Texas, and everyone has a role to play in building our future economy. This section illustrates the interconnectedness of our broad economic development ecosystem and demonstrates how each section of the ecosystem is involved in contributing to Texas' economic prosperity.
- **Blueprint for a Stronger Texas of Tomorrow:** A strategic plan is not a plan without a vision and actionable next steps. This section provides a unifying vision for the future of our economy and outlines detailed objectives and initiatives that will help EDT further cement Texas' position as a global leader and ensure our state remains the very best place to live, work, and visit.

The plan is also supported by the following appendices and tools, which provide data and insights that will help inform economic development efforts across the state:

- **Regional Profiles:** The included Regional Profiles provide an economic overview of 10 economic regions identified by EDT, including data on population, industries, exports, and workforce as well as strengths and emerging opportunities in the regions.

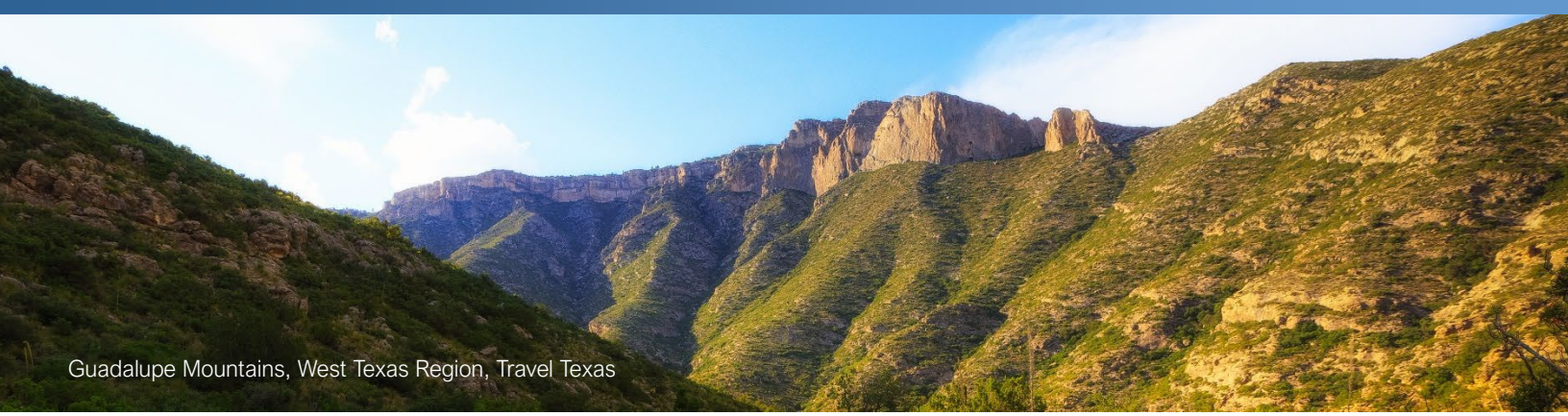
- **Target Sector Profiles:** The included Target Sector Profiles provide data and insights on the target sectors and industry clusters identified in this plan, including information and analysis on geographic distribution, gross domestic product (GDP) contribution, exports, occupations, and key skills.
- **Innovation & Entrepreneurship Catalog:** The separate Innovation and Entrepreneurship Catalog lists hundreds of innovation and entrepreneurship assets throughout the state, including incubators, accelerators, venture capital firms, angel investor networks, and higher education resources.

Where do you fit in?

It will take all of us to ensure Texas' regions, industries, and residents continue to thrive for years to come. We will work together to build and maintain a state where hardworking Texans can find their place and prosper. This spirit of collaboration is seen in our state motto of "Friendship" that was established in 1930 likely as a tribute to the origin of our state's name. The word *tejas* is the Spanish pronunciation of a word that was widely used as a term for "friends" by native people in the region for hundreds of years. Though our state has a long history of freedom, independence, and innovation, we are also rooted in community and collaboration. It took generations of leaders before us to create the Texas of today, and it will take all of us to usher in the bigger, better Texas of tomorrow.

While the strategic plan is intended to guide the activities and priorities of the Texas Economic Development & Tourism Office, we welcome and encourage the multitude of individuals and organizations who are driving growth in the state to join us in this effort. Whether by sharing ideas, collaborating on initiatives, or simply getting the word out, we all have a part to play in creating an even more prosperous future for all who are blessed to call Texas home.





Guadalupe Mountains, West Texas Region, Travel Texas

EXECUTIVE SUMMARY

“Texas is still the big, new frontier, a place where opportunity is abundant, where free enterprise flourishes, and where dreams, and families, and jobs grow.... Our past is but prologue; the greatest chapters have yet to be written. And the Lone Star State is brimming with promise!” – Governor Greg Abbott

Texas of today. Texas is a national economic leader and operates on the larger world stage as an essential player in the global economy. Fueled by steady population growth, regional diversity, and internationally recognized industries, we are an economic force to be reckoned with.

Texas has outperformed the U.S. and most states by a variety of metrics, including GDP expansion, foreign exports, and workforce growth. We are in league with some of the largest economies in the world, competing at the highest level with countries across the globe — and winning.

Texas has the eighth-largest economy in the world, surpassing countries like Canada, South Korea, and Brazil.

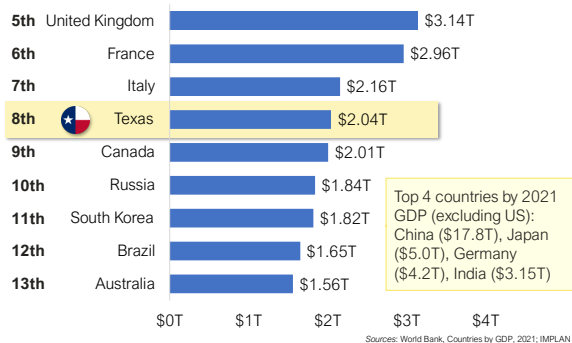
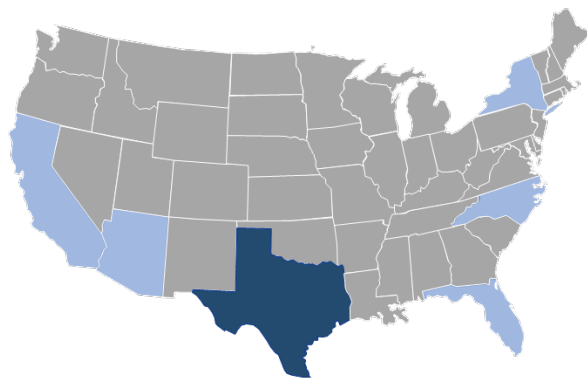


Figure 1. Selected Peer Countries by 2021 GDP, US Dollars¹

Texas’ economic strength attracts the attention of domestic and international businesses alike and enables us to expand our global presence. We have established trade partnerships with some of the most powerful nations in the world, including the signing of economic development agreements with Finland,² France,³ the Tokyo Metropolitan Government,⁴ the United Kingdom,⁵ and more. With international offices in Mexico and now Taiwan, our globally recognized brand is only getting stronger.

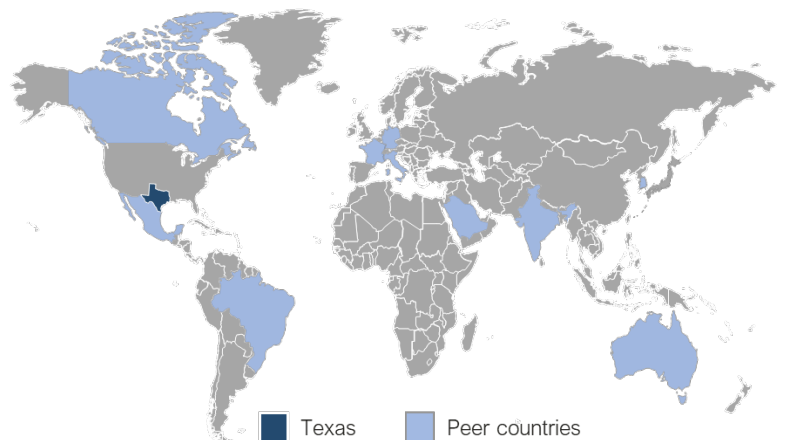
Texas is a national and global economic powerhouse. Our state’s strong and continuing economic growth is driven by Texas’ increasing connections to international markets and growing competitiveness in globally traded industries (e.g., energy, advanced manufacturing, and technology). The world’s economies are increasingly interlinked, and Texas is a key part of the international supply chain. The growth of our high-value, high-export sectors is outpacing the growth of other sectors that primarily serve our local economy. Driven by rapid growth in foreign exports, this shift indicates that we are increasingly competitive in the global marketplace. To maintain and grow our position, Texas will proactively identify and capitalize on opportunities to grow key industries and to expand into new markets at home and abroad.

Texas as a National Leader



■ Texas ■ Peer states

Texas as a Global Economy



■ Texas ■ Peer countries

Our rich diversity makes us stronger. Texas' diversity is the foundation of our competitiveness around the world. Our wide array of geographies and landscapes, diverse populations and cultures, wealth of natural resources, and broad range of industries uniquely position our state to pursue diversified economic growth and respond to evolving global market demands. Texas also boasts a diversified base of significant industries: advanced manufacturing; aerospace, aviation, and defense; biotechnology and life sciences; corporate services; energy; information technology; and semiconductor design and manufacturing. These industries offer a wide range of employment opportunities, from middle-skill production jobs to corporate executive roles. Additionally, every region of this great state offers a unique mix of economic, demographic, and geographic strengths. Whether a rewarding job opportunity, a welcoming place to grow a business, or a friendly community to start a family, Texas offers something for those seeking the opportunity to aspire and thrive.

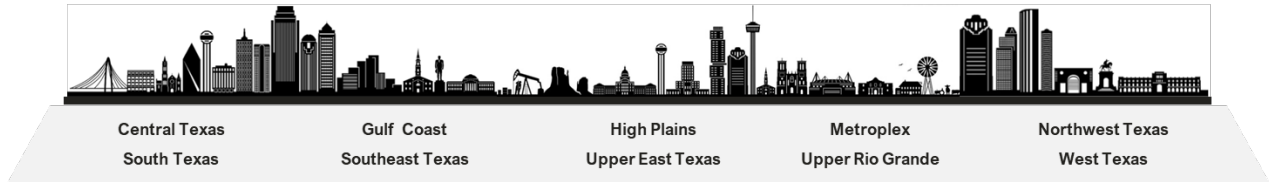
Our strategic plan helps position Texas to capitalize on our success and capture the promise of our future economy. While Texas has experienced historic economic success, we recognize the need to be forward-thinking and intentional in our efforts to pave the way for future generations. This plan establishes a unifying vision for continuing economic expansion and outlines objectives and initiatives to advance the state's international competitiveness. A summary of our vision, focus areas, and priorities is outlined in the strategic framework in Figure 2 on the following page. Our vision is simple: ensure Texas remains the premier place to visit, live, work, and grow a business. To accomplish this, we will focus on promoting thriving regions across all corners of the state and on expanding target sectors that will drive growth and create jobs for hardworking Texans.

Figure 2. “Bigger. Better. Texas.” Strategic Framework

Vision Statement

Texas is a **global economic powerhouse**. Our rich culture, diverse workforce, and entrepreneurial spirit make Texas the **premier place** to live, work, and visit.

Texas Regions



Target Industry Sectors and Clusters

| | | | | |
|---|--|--|--|---|
| Advanced Manufacturing <ul style="list-style-type: none"> Aerospace Vehicles, Aircraft & Defense Automotive Computers, Electronics & Semiconductor Manufacturing Production Technology & Heavy Machinery | Energy Evolution <ul style="list-style-type: none"> Electric Power Generation and Transmission Oil and Gas Extraction, Production, and Transportation Renewables | Food & Livestock Products <ul style="list-style-type: none"> Food Processing Livestock Processing | Hospitality, Tourism & Culture <ul style="list-style-type: none"> Film, Music and Culture Hospitality and Tourism | Information Technology <ul style="list-style-type: none"> Information Technology & Artificial Intelligence |
| Life Sciences & Biotechnology <ul style="list-style-type: none"> Biotechnology, Pharmaceuticals and Medical Devices Agricultural Science & Technology | Petroleum Refining & Chemicals <ul style="list-style-type: none"> Industrial Chemical Products Petroleum Refining Plastics | Professional Services & Corporate Operations <ul style="list-style-type: none"> Business Services & Corporate Headquarters Financial Services | Rare Earth Elements & Mineral Mining <ul style="list-style-type: none"> Metal Mining Nonmetal Mining | Transportation & Logistics <ul style="list-style-type: none"> Distribution and E-Commerce Transportation and Aviation Services |

Economic Development Pillars



We take a holistic approach to economic development.

Our strategic plan focuses on advancing the growth of Texas' businesses and industries, investing in our people and workforce, catalyzing innovation and entrepreneurship, and building an even more resilient infrastructure network.

We have established four key priority areas for our plan that represent important pillars of holistic economic development:

- **Business and Industry:** We will strengthen Texas' businesses and industries and cultivate diversified economic growth.
- **Innovation and Entrepreneurship:** We will foster innovation and entrepreneurship to ensure Texas remains the premier destination for leaders, creators, and trailblazers.

- **Workforce:** We will inform and advocate for the resources necessary to support a nimble workforce system.
- **Infrastructure:** We will support the critical infrastructure development and maintenance that enables flourishing industries and regions.

It takes all of us. Texas' decentralized approach to economic development sets us apart. Texas thrives because of the community of doers, makers, and entrepreneurs who form the lifeblood of our economy. Therefore, we have designed this plan as a flexible document that can be adapted to reflect the unique needs and characteristics of Texas' regions. We commit to working collaboratively to meet our mutual goals and to championing the local leaders who know our communities and industries best. **This is the Texas Way.**



TEXAS



ITD Precision, Harlingen

TEXAS TODAY

“As the eighth-largest economy among the nations of the world, Texas is an economic and innovation powerhouse, offering unmatched opportunities for families and businesses to grow and succeed.” – Governor Greg Abbott

Texas has long been known for its pioneering spirit, which has guided our state from a sparsely populated territory rich in resources to a large, diverse, and vibrant economy on par with some of the largest nations in the world. Today, we are well-positioned to harness the momentum of recent years and continue to grow our economy. However, to determine where we are going, we must first understand where we are. *Texas Today* paints a picture of our state’s current economy, identifying our economic strengths and areas of opportunity.

The current state of our economy is strong due to our diverse network of businesses, skilled and nimble workforce, robust innovation and entrepreneurship landscape, and connected infrastructure. The following section explores the current state of Texas’ economy through the following four lenses:

1. **Business and Industry**
2. **Innovation and Entrepreneurship**
3. **Workforce**
4. **Infrastructure**

BUSINESS AND INDUSTRY

From small startups to multinational corporate headquarters, our growing network of businesses and industries form the foundation of our economy, creating jobs for hardworking Texans, providing essential goods and services, and bringing investment into our state.

There is a reason so many people choose to live and do business here: Texas is one of the most business-friendly climates in the world due to our predictable regulatory environment, diverse workforce, access to global markets, and entrepreneurial spirit. Texas’ network of companies represents all stages of the supply chain, from raw materials to advanced electronics, technical services, and corporate operations. Business and industry growth has fueled Texas’ position on the international stage, and we are ready to forge onward.

You can find everything in Texas.

Businesses and industries in Texas are highly diversified — producing a wide range of goods and services that are critical to both domestic and international markets.

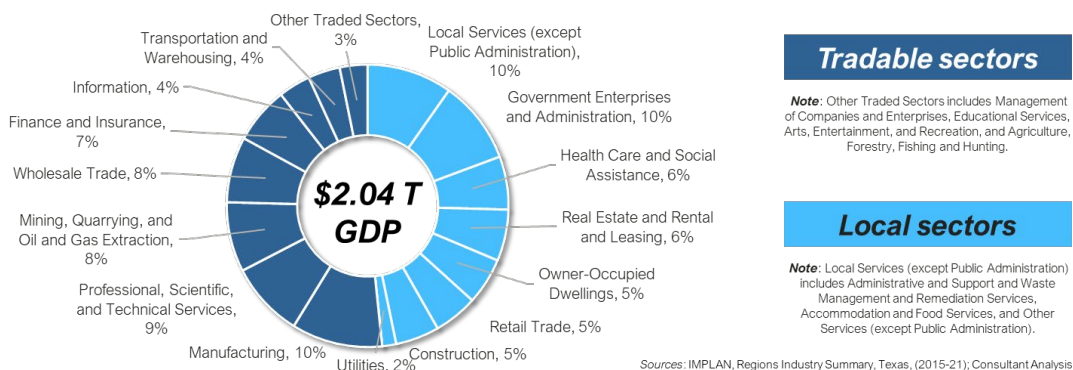
Our state has long been a land of bounty. During early statehood, Texas’ economy was driven by abundant natural resources, including agricultural and livestock products and raw materials like timber. Oil discoveries during the late 19th and early 20th centuries transformed the economic landscape of Texas. As a result, our state is known around the globe as a major energy producer.

But that’s not where our story ends. The 20th century brought major changes to our industrial base, including advancement of our production and technology capabilities and the development of transportation hubs connecting our nation’s roadways, railways, waterways, and airways. Over the last one hundred years, Texas has transformed

from a relatively specialized economy producing mainly primary goods to an advanced economy with diversified strengths across a wide variety of industries.

As shown in Figure 3 below, no single industry sector in our economy currently generates more than 10 percent of total Gross Domestic Product (GDP). We have a strong base of tradable sectors (i.e., sectors that produce goods and services sold and consumed outside of Texas), which drive international competitiveness, and local sectors, which offer services that serve our regional economies. Our tradable sectors encompass a variety of industries, including manufacturing, professional services, energy and mining, and information technology. Our local sectors are primarily service-based and include healthcare, real estate, construction, and more. Texas is home to a diverse economy that produces a wide range of both tradable and local products and services.

Figure 3. Industry Contribution to GDP, 2021⁶



Texas' industries are globally significant.

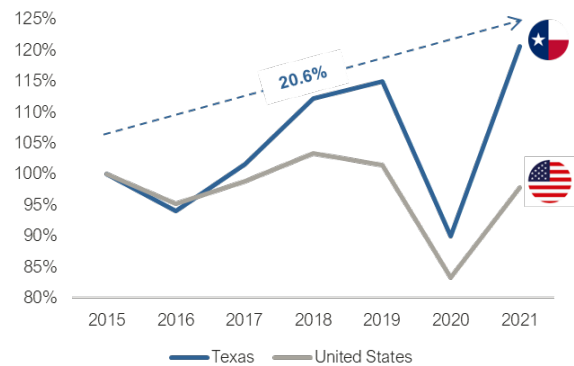
Over the past two decades, Texas' businesses and industries have emerged as a competitive force in the global economy.

The expansion and evolution of Texas' economy has continued through the 21st century. Our state has experienced impressive growth in foreign exports, earning us the title of top exporting state in the nation every year since 2002.⁷ The last two decades of economic progress and international trade have propelled Texas onto the global stage.

Our economy is becoming increasingly driven by growth in high-export sectors, which are industry sectors that bring money into the Texas economy from outside the state through domestic and international trade. These sectors are critical to achieving high levels of economic performance, as they bring jobs and investment into the state.

As shown in Figure 4 at right, Texas' foreign export growth has outpaced that of the U.S. from 2015 to 2021. Our high-export sectors generated over \$240 billion in foreign exports in 2021, which represents a 20.6 percent increase from 2015.⁸ This accelerated growth indicates that Texas is an even stronger global player, competing with other economies at the highest level.

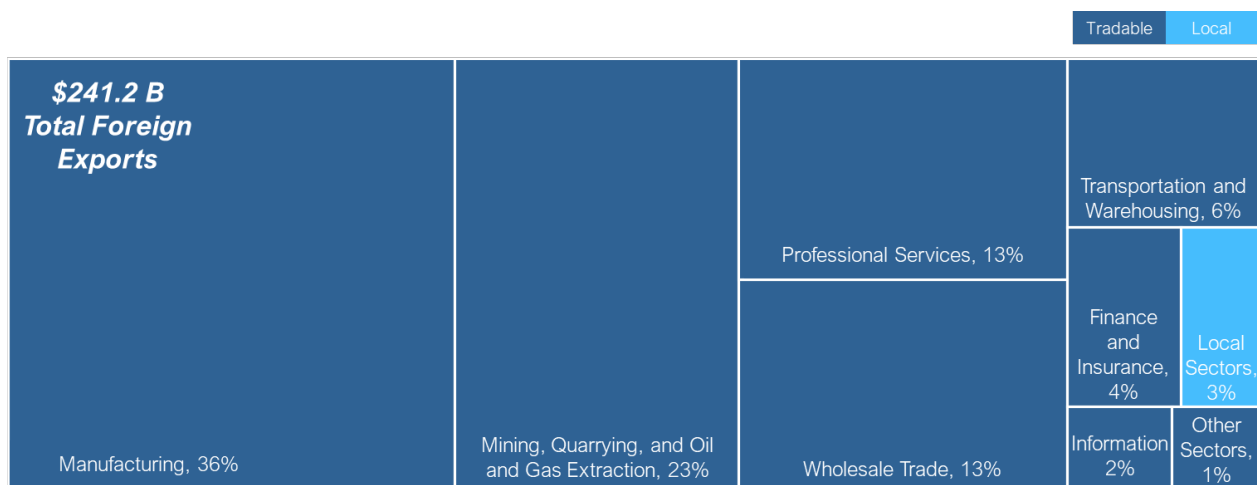
Figure 4. Foreign Exports Relative to 2015⁹



Sources: IMPLAN, Regions Industry Data, Texas and US, (2015-21); Consultant Analysis

Texas is a critical player in the global economy, providing essential commodities like semiconductors, petroleum products, chemicals, aerospace parts, heavy machinery, computer equipment, and more to both domestic and foreign markets. Figure 5 shows our state's top sectors by foreign exports, including manufacturing, oil and gas, professional services, and wholesale trade. These high-export sectors are a major driver of economic growth and competitiveness for Texas. Our local sectors also contribute to our foreign exports, through the provision of services such as transportation. The transformation from a primarily agricultural economy to an advanced, diversified economy over the last century has resulted in Texas becoming a key player in a wide variety of multinational industries.

Figure 5. Foreign Exports, 2021¹⁰



Sources: IMPLAN, Regions Industry Institution Demand, Texas, (2015-21); Consultant Analysis



Port Houston

Texas is well-positioned for strong and continued economic growth.

Our state has transformed into a global economic powerhouse in the last few decades. This evolution is driven by our state’s unique traits, which will continue to propel the growth of our businesses and industries for years to come.

Texas has long led the nation in population growth and foreign exports. The notable expansion and transformation of Texas’ businesses and industries in recent years is a direct result of our state’s unmatched advantages.

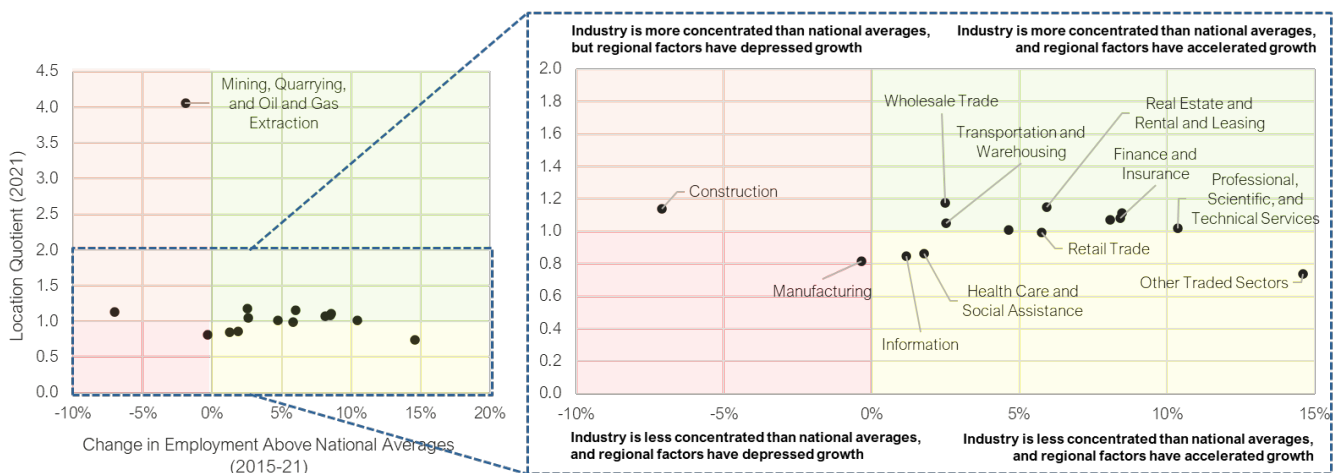
Figure 6 below features a chart depicting the regional competitive effect for Texas, or what percent of industry employment growth can be attributed to unique regional characteristics such as policy, geography, demographics, and natural resources versus national industry trends. Texas’ regional competitive advantages drive growth in over two-thirds of major industry sectors, showing

that our state’s growth is attributable not just to national trends, but also because of our state’s distinctive economic climate, workforce, regulatory landscape, and infrastructure.

Texas has a unique opportunity to accelerate growth across a wide variety of industries, including advanced manufacturing, semiconductor design and manufacturing, artificial intelligence (AI) and information technology, energy, biotechnology and life sciences, professional services, and even space. Our diversity is unmatched, with strengths spanning a spectrum of economic activity.

We must continue to support businesses of all sizes operating in Texas’ historically strong industries and foster our new and emerging industries. Texas’ network of entrepreneurs, small and mid-sized businesses, global Fortune 500 companies, and corporate headquarters create the foundation for our continuing economic success and drive Texas’ impressive regional, statewide, and international growth.

Figure 6. Sectors by Location Quotient and Regional Competitive Effect, 2015-21¹¹



Sources: IMPLAN, Regions Industry Data, Texas and US, (2015-21); Consultant Analysis

INNOVATION AND ENTREPRENEURSHIP

Texas' innovators and entrepreneurs are essential to our economic growth and keep our state on the cutting edge.

Our state is a premier destination for innovation and entrepreneurship. Texas is outpacing the national average for new business application growth and is home to some of the nation's top higher education and research institutions. Our state's strong entrepreneurial spirit and leading research institutions place Texas at the forefront of innovation in a wide variety of globally significant industries. Our innovation and entrepreneurship resources, business-friendly environment, and commitment to research and development will ensure the pioneering spirit of Texas lives on for generations to come.

Texas' trailblazers shape the world.

Our state is known for doing things our own way, thinking outside the box, and driving innovation. Throughout our history, Texans have developed countless inventions and solutions that have applications across the globe.

Texas' pioneering legacy laid the foundation for our economic success over the last century, and Texas innovations have shaped the course of history. In 1866, Charles Goodnight developed the chuck wagon, an invention that accelerated settlement of the American West. In 1933, the Hughes Tool Company invented the rotary rock drill bit, spurring our nation's production of oil and gas. In 1958, Texas Instruments engineer Jack Kilby built the first microchip, which powered the computers that took astronauts to the moon and is still used in modern electronic devices.¹²

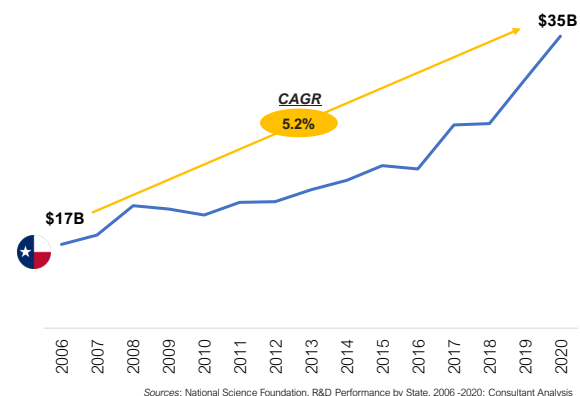
The trailblazing spirit that brought these Texas creations to life is carried on today through our vibrant communities, businesses, and industries. In a National Science Foundation survey, Texas ranks seventh among all states in share of companies reporting business or product innovations.¹³ Our state is among the nation's leaders in patents, with over 13,000 patents granted in 2020 — the second most of any state in the U.S.¹⁴

Texas' public and private sector entities are committed to research and development (R&D). Our state's R&D performance, which includes R&D activities conducted in Texas by federal and state agencies, businesses, universities, and non-profit

organizations, grew at an annual average rate of 5.2 percent per year from 2016 to 2020. Annual growth has been accelerating in recent years, as shown in Figure 7. Notably, Texas' R&D performance growth significantly outpaced that of the U.S. from 2019–2020, increasing by 11.9 percent compared to the nation's growth of 7.5 percent. Our R&D activity totaled roughly \$35 billion in 2020, placing us fifth among all states.¹⁵

The State of Texas is also dedicated to promoting innovation through research and development. For example, the state's R&D tax credit rewards companies investing in product development, the Governor's University Research Initiative provides matching grants to attract even more distinguished researchers to our leading universities, and the Texas University Fund allocates \$3.9 billion to novel research in Texas' universities.¹⁶ Continuing to support R&D will allow Texas to innovate and compete on a global scale.

Figure 7. Texas Total R&D Performance, 2006-20¹⁷



Texas' strong entrepreneurial spirit drives our economic leadership.

The Lone Star State is renowned for its business-friendly environment and deep commitment to free enterprise, which inspire Texans to solve problems and start businesses.

Texas has earned the “Best State for Business” ranking every year for nearly two decades.¹⁸ Our state’s long legacy of freedom and independence, combined with our welcoming business climate, robust infrastructure, and diverse workforce make Texas a magnet for entrepreneurs across the globe.

Our economy is fueled by entrepreneurship. Over 99 percent of all Texas businesses, including 93 percent of exporters, are small businesses.^{19,20} Without our entrepreneurs, we would not be the economic powerhouse we are today.

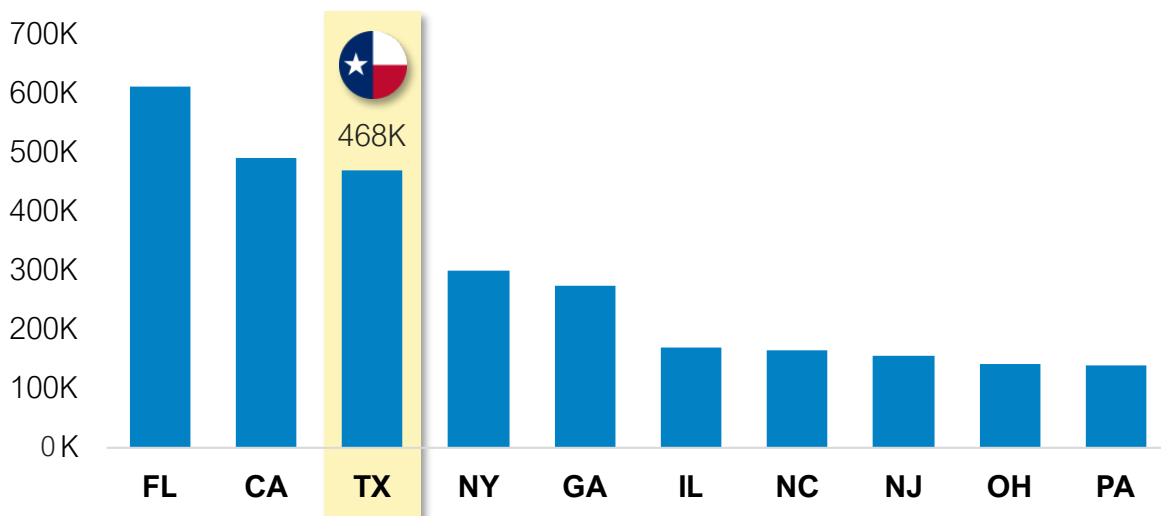
Texas is one of the top states in the nation for new business applications. As shown in Figure 8 below, our state accounted for over 467,000 applications

in 2022 alone.²¹ This figure is supported by years of momentum — new business applications in Texas grew by an annual average of 10 percent every year from 2015 to 2022.²² This growth can be attributed in part to Texans’ enterprising spirit, but also to the entrepreneurs from around the world who are drawn to Texas.

Entrepreneurs choose Texas because our state provides businesses with the key ingredients they need to succeed: a diverse workforce, a business-friendly regulatory environment, access to global markets, a wealth of natural resources, and the freedom to grow.

Whether it is a manufacturing business looking for raw materials to build and distribute their product, an innovative software startup looking for highly skilled employees, or a new life sciences company seeking space to build a lab to exact specifications, Texas is uniquely positioned to offer entrepreneurs the tools and resources needed to succeed.

Figure 8. New Business Applications, 2022²³



Source: US Chamber of Commerce state business formation statistics, 2022

Texas’ innovation and entrepreneurship environment puts us at the forefront of the future.

Our ability to solve problems and bring solutions to industries will continue driving our economic leadership as Texas gains even more prominence on the international stage. It is important that we continue supporting the pioneers who forge our state’s future.

Innovation and entrepreneurship in Texas have led our state to new heights. As we look to the future, we know that our success will depend not only on our existing businesses and industries, but also on novel research, young companies, and industries that do not yet exist.

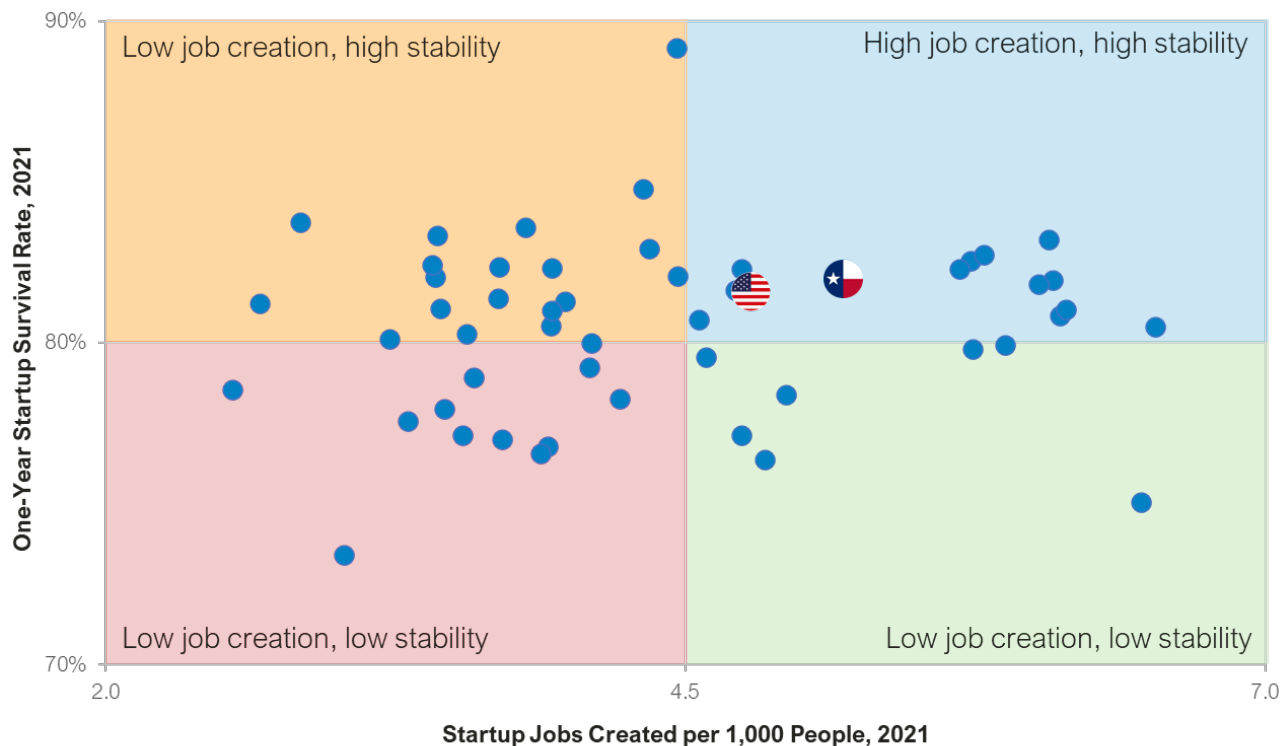
Innovation and entrepreneurship are supported by a broad range of resources in Texas. Our growing innovation and entrepreneurship ecosystem today includes hundreds of research institutions, funding

opportunities, incubators, mentorship programs, and other assets in every part of the state, with more assets being built every day.

This network of resources and programming helps startups in Texas not only survive but thrive. Figure 9 demonstrates how our supporting environment has bred economic success in Texas compared to other states (depicted in Figure 9 as blue dots) and the nation as a whole — we have outpaced the U.S. in both startup survival rate and per capita jobs created, indicating Texas startups are built to last.

By increasing awareness and access to the network of resources, we can ensure entrepreneurs and innovators have what they need to successfully turn an idea into a business. These risk-takers make up the backbone of our economy, and by supporting them, we support our state’s’ continued economic growth and success.

Figure 9. Startup Survival Rate vs. Job Creation by State, 2021²⁴



Sources: Kauffman State Report on Early-Stage Entrepreneurship, 2021, Table 1

WORKFORCE

The hardworking people of Texas are the lifeblood of our economy. Our young, skilled, diverse, and growing workforce finds opportunity of all types in Texas and brings the skills needed for businesses to thrive.

People born in Texas tend to stay in Texas. We have the lowest rate of native-born people leaving our state, making us the “stickiest” state in the nation. We are also a top state for in-migration. This population growth and retention supports and catalyzes our economic growth. Our state boasts a wide variety of opportunities for all Texans, who are supported by a robust workforce and education system working to meet the needs of Texas’ job creation efforts. This means that our workforce is poised to take on the jobs of our future and continue the Texas legacy for years to come.

People are choosing Texas.

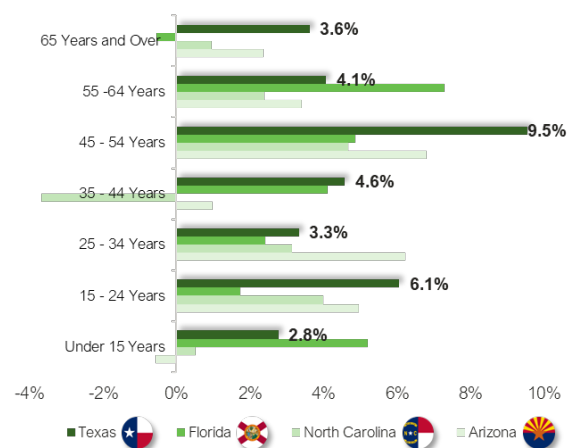
Our great state is an undeniable leader in talent attraction and retention. Residents are choosing to stay in Texas more than any other state.

Texas leads the nation in population growth.²⁵ Our population growth rate outpaced the nation from 2015–2021, indicating Texas is the top choice for people to live and work. This population expansion is the combined result of residents from other states and nations choosing to become Texans and native residents overwhelmingly choosing to stay here.

The influx of people to our state is concentrated in working age individuals, meaning our workforce is growing rapidly to support the growth of our businesses. As shown in Figure 10 to the right, the growth in Texas’ working age population outpaced that of the U.S. and peer states between 2015 and 2021. A young, growing, and diverse population provides a strong foundation for a healthy future workforce, and businesses looking to expand in our state know that they can depend on our labor force pipeline to support long-term growth.

People from across the United States are choosing to live and work in Texas. Between 2000 and 2022, domestic migration accounted for 29 percent of Texas’ population growth.²⁶ Texans saw an influx of over 100,000 Californians in 2022, the highest in-migration from any individual state.²⁷

Figure 10. Population Growth Above U.S. Average by Age Group, 2015-21²⁸



Source: US Census Bureau American Community Survey, Age and Sex Data, (2015-2022); Consultant Analysis

Not only do people choose to live in Texas — they also choose to stay. Texas is by far the “stickiest state” in the nation with 82 percent of native-born Texans in 2021 choosing to remain in Texas.²⁹ Texas also had the lowest rate of people leaving the state in 2021, with a 15 percent outmigration rate (among those who moved residences that year) for both native and non-native Texans.³⁰

Our ability to continue to attract and retain talent is critical to supporting our thriving regions and growing industries.

Texas provides opportunities for all.

There is something for everyone in Texas as our state offers diverse employment opportunities, spanning a wide array of jobs accessible with varying levels of educational attainment.

Employers across industries in Texas create a variety of job opportunities for Texans, and our diverse workforce lends their skills and expertise to businesses. Texas provides opportunities for all, spanning from healthcare practitioners to production workers and hospitality professionals. People with a wide array of educational backgrounds can take advantage of jobs in our state. Over 50 percent of occupations in the state today are typically held by individuals with a high school diploma or less, indicating that everyone has an opportunity to find a place in our workforce.³¹

Figure 11 below shows the distribution of wage and salary employment in Texas and maps each occupation to its typical educational attainment level. Wage and salary employment represents a subset of total employment that includes wage-earning or salaried employees and excludes proprietors (i.e., business owners and people who are self-employed). The typical level of educational attainment is mapped according to the type of

degree or certification held by the majority of individuals filling roles within that occupation in Texas. However, educational attainment levels held by individuals within an occupation may vary.

The critical importance of middle-skill jobs across industries has made them a crucial and growing portion of our labor market. Middle-skill jobs offer relatively high wages and opportunities for career progression without requiring a four-year degree, making these jobs attainable for a broader number of workers in Texas. In 2020, middle-skill jobs accounted for 56 percent of Texas' labor market, but only 42 percent of our workforce had middle-skill levels of training.³² Additionally, middle-skill jobs in science, technology, engineering, and math (STEM) fields are projected to increase by 24 percent to nearly 1.5 million workers in the next decade.³³ The growth of middle-skill jobs in Texas will create quality employment opportunities for Texans from a variety of backgrounds.

As Texas' economy grows, our businesses and industries will require more workers with a diverse and — evolving — set of skills. Texas is the land of opportunity, and continuing to create employment opportunities and help Texans prepare for and access the jobs of the future will be fundamental to our continuing economic success.

Figure 11. Texas Wage and Salary Employment by Occupation, 2021³⁴

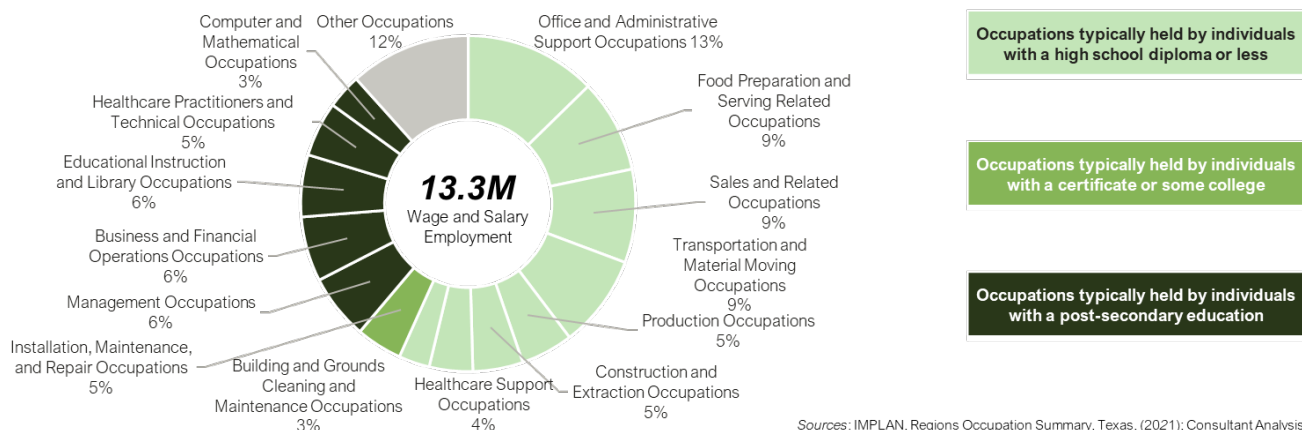
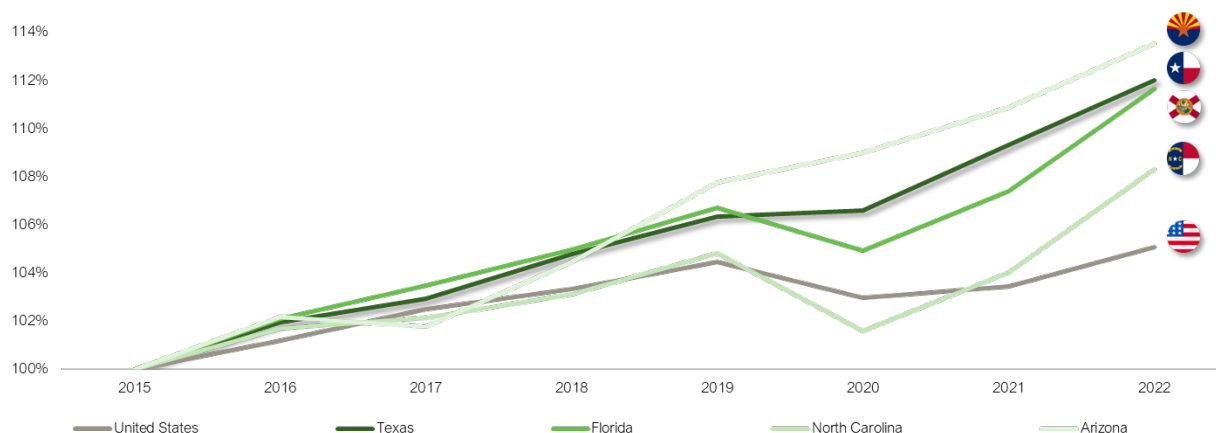


Figure 12. Labor Force Relative to 2015, 2015-22³⁵



Source: US Bureau of Labor Statistics, Annual Average Labor Force by County (2015-2022); Consultant Analysis

Texas’ workforce development system is dedicated to helping our people thrive.

Our diverse educational and workforce institutions work together to support the development of all Texans for today and tomorrow.

Whether you are a high school senior navigating your post-secondary options or an older adult re-entering the workforce, Texas’ workforce system aims to meet you where you are to help improve career outcomes. Our approach to continuing workforce development amplifies the strength and competitiveness of our growing talent pool and helps businesses find the workforce they need to succeed.

Texas’ workforce development efforts are guided by the Texas Workforce Investment Council (TWIC), within the Texas Economic Development & Tourism Office, which produces the statewide workforce system strategic plan that facilitates alignment across all workforce system partners at the state and local levels.

TWIC partners with eight state agencies — the Texas Workforce Commission, Texas Higher Education Coordinating Board, Texas Education

Agency, Texas Department of Criminal Justice, Texas Juvenile Justice Department, Texas Veterans Commission, Texas Health and Human Services Commission, and Texas Economic Development & Tourism Office, as well as with the Texas Association of Workforce Boards — to promote and enable state-level coordination and collaboration among workforce programs across the state and at local levels.

In addition, the Tri-Agency Workforce Initiative — a collaborative effort of the Texas Higher Education Coordinating Board, Texas Education Agency, and Texas Workforce Commission established in 2016 by Governor Abbott — is charged with developing stronger links between education and industry in Texas, as well as implementing new legislation, with the goal of helping Texas continue to grow in economic prosperity.

Texas’ workforce is among the strongest in the nation and will continue to be pivotal to our growth. Figure 12 above shows that the state’s labor force, which includes employed and unemployed people, grew by 12 percent between 2015 and 2022. Texas’ labor force is growing at a faster rate than many

other states and the national average. Our labor force is also growing at a faster rate than our overall population, indicating that more people are joining the labor force or moving to Texas to work.

As more people call our state home, we must continue to provide the resources needed today to advance our workforce and support the jobs to come tomorrow.

Many forward-looking workforce development efforts are already underway. For example, the passage of House Bill 8 in the 88th Legislative Session in Texas will help ensure our community colleges remain competitive through merit-based funding.

Having a nimble talent pool is more critical than ever as industries evolve rapidly. We must continue to evaluate how we can maintain our global competitive edge as shifting market landscapes change the demand for skills.

The continued development of Texas' workforce is a collaborative effort, requiring the involvement of our diverse educational and workforce ecosystem partners.

To build an even bigger, better Texas, we will continue to work together to anticipate business needs, evaluate workforce trends, and identify the programming and initiatives that will enable Texans to develop the skills and training they need to succeed in regions across the state.



INFRASTRUCTURE

Texas relies on a vast and connected network of infrastructure and transportation systems to link our communities, support international trade, and make our state a top destination for businesses and tourists alike.

Texas truly is the gateway to global trade for the nation. By land, air, and sea, robust infrastructure and transportation systems connect Texas communities with each other, neighboring states, and the world. Rapid population and industry growth in Texas is increasing the demand for water, power, roadways, broadband, and other key infrastructure components. As Texas' communities and businesses boom, capacity must be prepared to accommodate growth and ensure we continue to lead the nation for years to come.

Texas is the nation's gateway for global trade and travel.

Our state is centrally located and equipped with one of the most robust infrastructure networks in the nation. We connect industries and people to markets and destinations across the U.S. and throughout the world.

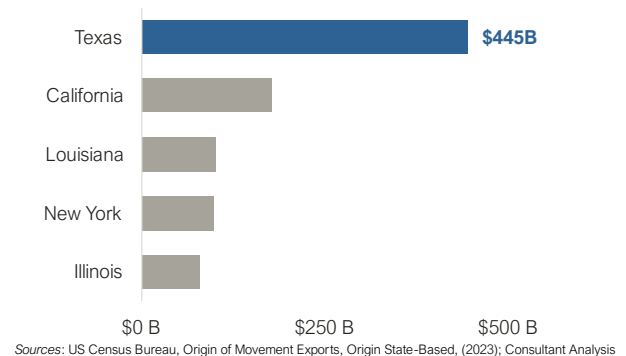
Texas' infrastructure enables our businesses and people to work, play, and make connections across the globe. Our extensive network of infrastructure and transportation systems includes 314,600 miles of public roads, 10,500 miles of freight rail, 380 airports (including 26 commercial airports), 19 seaports (including 11 deepwater ports), 32 ports of entry, and now 35 Foreign Trade Zones.³⁶ Texas airports provide direct domestic flights to 47 states and territories and international flights to 44 countries.³⁷ Millions rely on our transportation infrastructure to visit Texas every year, generating over \$91 billion in travel spending in 2022 alone.³⁸ With this robust collection of rail, road, air, and sea infrastructure, Texas serves as a critical connector between the United States and the rest of the world.

Figure 13. Texas Highway and Road Miles



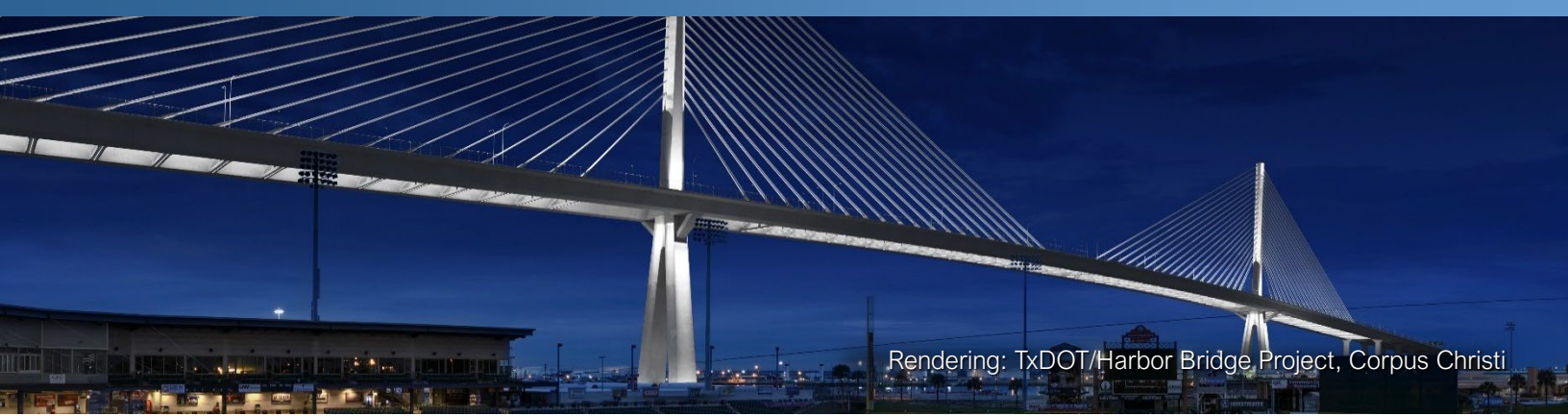
Texas moves more exports than any other state in the nation. As shown in Figure 14 below, around \$445 billion of international exports originated in Texas in 2023, more than double the value of goods exported from California in the same year. Our network of transportation infrastructure enables businesses to easily connect with global markets.

Figure 14. Top 5 States by Movement of Exports, 2023³⁹



Our infrastructure is also a key enabler of travel and tourism. Port Galveston is the fourth-busiest port in North America, serving over 1.7 million cruise passengers per year.⁴⁰ Texas is also home to six of the busiest airports in the nation, which create opportunities for tourists to visit and for Texans to travel across the globe.

The worldwide connectivity created by Texas' robust network of transportation infrastructure is critical for our continued economic success — the movement of both goods and people builds the foundation for our state's presence on the international stage.



Rendering: TxDOT/Harbor Bridge Project, Corpus Christi

Texas' robust infrastructure has enabled our state's historic economic growth.

Texas understands infrastructure's importance to the economic vibrancy of the state and promotes investment focused on resiliency.

Texas' utilities like water, power, and broadband contribute to a high quality of life, and our airways, railways, roadways, and waterways enable the movement of goods and people. Without this high-functioning infrastructure system connecting our businesses and population with utilities and transportation resources, Texas would not be home to such a robust economy.

Texas has experienced remarkable growth in recent years. We gained over 9 million new Texas residents over the last two decades, meaning our population grew by approximately 43 percent.⁴¹ From 2001 to 2021, Texas' GDP grew by over 68 percent.⁴² This rapid growth has been supported by robust critical infrastructure and affordable utilities.

Continuing strategic investments in our critical infrastructure will help ensure our state can further grow and flourish.

To foster strong and ongoing growth, Texas must continue advancing and adapting our infrastructure.

Texas' foundation is strong, but population and economic growth in the coming years may strain existing resources. We should continue to improve critical infrastructure to meet increasing consumer and commercial demand and foster growth.

Rapid growth in Texas is increasing the demand for resources. As Texas' businesses, industries, and communities continue to advance and expand, our infrastructure systems must meet increasing demand.

If current migration patterns remain unchanged, the Texas Demographic Center projects that our state's population will grow by more than 12 percent over the next 10 years.⁴³ This population growth is expected to be coupled with industry expansion resulting in the increased demand for industry activities like manufacturing, raw material processing, data services, and transportation and warehousing. To meet the rapidly increasing needs of communities and industries, we should continue advancing and adapting our infrastructure. Our capacity to provide water, power, broadband, and efficient transportation for people and businesses will be critical to supporting anticipated growth.

Our state will work together to usher in the next generation of infrastructure, invest in our future, and pave the way for a bigger, better Texas for decades to come.



Governor's Cup
State of Texas
Facilities Champion: Total New Projects
Presented by
Site Selection Magazine



Governor's Cup
State of Texas
Facilities Champion: Total New Projects
Presented by
Site Selection Magazine



Caterpillar, Seguin

BETTER TOGETHER

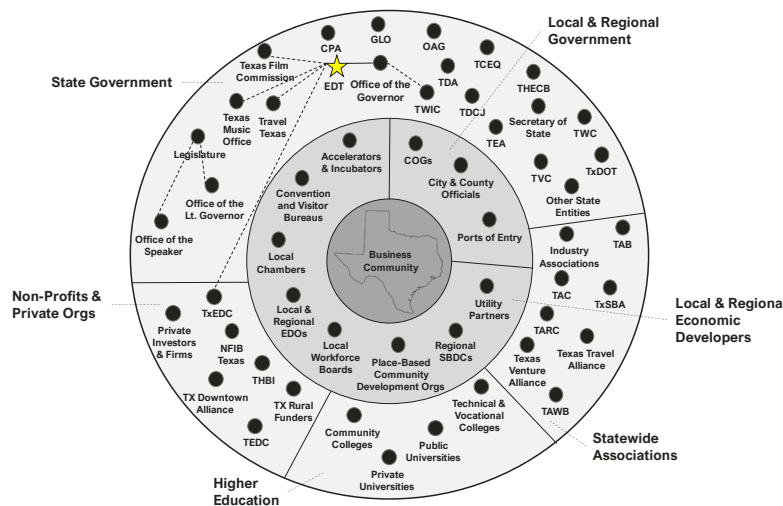
“Working together, we are building an even bolder, brighter Texas of tomorrow.”
– Governor Greg Abbott

The Texas dream is the result of generations of Texans before us and the businesses they built, the communities they created, and the legacy they left to us. We carry that dream forward today — when our businesses, communities, and governments work together, Texas is a force to be reckoned with. By working collaboratively, we amplify our efforts and create an environment where businesses and residents can thrive. *Better Together* provides an overview of the entities that contribute to economic prosperity in Texas and describes how they interact to grow our economy and enhance our quality of life. The section also defines the Texas Economic Development & Tourism Office’s role in our four economic development pillars.

It takes a team.

The Texas economic development ecosystem is comprised of thousands of local, regional, and statewide entities that reflect the diverse populations of our state and collectively build upon our business-friendly environment and top-notch communities. To illustrate the impact and interconnectedness of the entities that support economic development in Texas, we mapped the ecosystem in Figure 15 below and outlined how these players interact to advance business and industry, innovation and entrepreneurship, workforce, and infrastructure in Texas in the subsequent pages.

Figure 15. Texas Economic Development Ecosystem



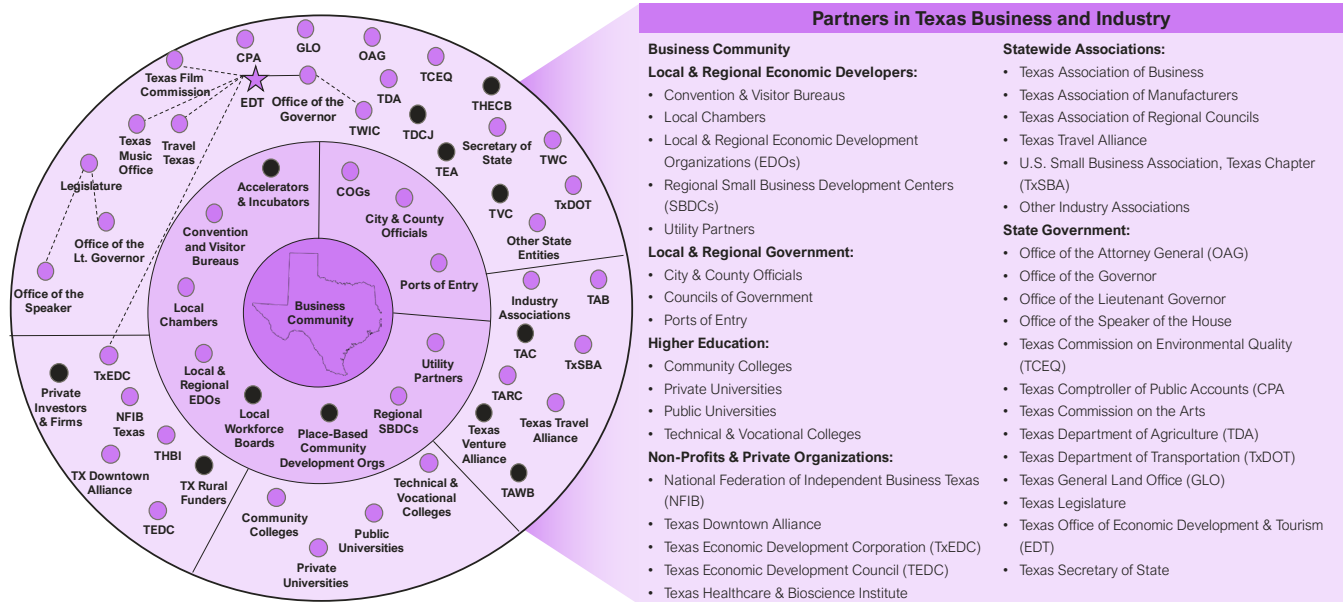
The ecosystem is divided into seven segments:

- **Business Community:** Texas' businesses and workers are at the heart of the economic development ecosystem, and the efforts of the other segments are intended to promote their success. This portion of ecosystem includes the hundreds of thousands of businesses in all industries and across all regions of our state.
- **Local and Regional Economic Developers:** Economic development efforts in Texas begin at the local level. Local and regional economic developers include chambers of commerce, convention and tourism boards, local workforce boards, utility partners, and local and regional economic development organizations. These entities are uniquely equipped to provide resources that best serve the needs of their local communities and help attract and grow businesses that reflect their communities' strengths and character.
- **Local and Regional Government:** Our local and regional government partners, including city officials, county officials, and councils of government, help shape policies to support the local business community and collaborate with other partners to promote business and industry growth in their regions.
- **Statewide Associations:** With an in-depth understanding of both industries and regional economies, statewide associations provide resources to help their members grow and succeed. These entities also conduct important advocacy work to promote business-friendly policies and bring awareness to issues that matter to their members. Examples of these statewide associations include the Texas Association of Business, Texas Association of Manufacturing, Texas Oil & Gas Association, Texas Association of Regional Councils, Texas Travel Alliance, Texas Economic Development Council, and other industry associations.
- **Higher Education:** Our institutions of higher education, including our community colleges, public and private universities, and career and technical schools, are a critical component of economic development efforts in Texas. These institutions prepare the next generations of our workforce to meet future industry demands and assist in upskilling and reskilling efforts of our current workforce to adapt to industry needs.
- **Non-Profit and Private Organizations:** Non-profit and private organizations provide private funding and resources to support economic development efforts across the state. Some entities have a narrower scope — Texas Rural Funders, for example, focuses their efforts on supporting rural areas of the state, while other organizations like the Texas Downtown Alliance focus on revitalizing our state's many downtown areas. Entities such as the Texas Economic Development Corporation and the Texas Economic Development Council provide statewide resources and help provide funding to support state economic development efforts.
- **State Government:** The state government segment includes the Office of the Governor, including EDT, the Texas Legislature, our state agencies, and other entities in the executive branch. The Texas Legislature is responsible for creating policy based on the needs and priorities of the state, and other branches of state government help implement these policies. EDT provides support for Texas businesses and works collaboratively with other ecosystem partners to promote Texas and attract new investments and prospective businesses to our state.

Business and Industry Ecosystem

Businesses and industries are the driving force of Texas' economic growth. The business and industry ecosystem in Texas creates a climate in which hardworking Texans can start, grow, and scale a business and helps to balance the interests of industries, residents, and communities. When Texas businesses and industries succeed, our communities thrive and our state succeeds.

Figure 16. Texas Business and Industry Ecosystem



Texas' business and industry ecosystem, depicted in Figure 16 shown above, helps retain our current businesses, attract and grow new industries, and catalyze overall economic growth. Our state's **Business Community** is the central component of the business and industry ecosystem, promoting economic growth by providing employment opportunities, contributing to our GDP, and adding value to our communities. **Local and Regional Government and Economic Developers** provide strategies and resources to promote local and regional economies, attract businesses, and ensure business owners and our Texas communities can thrive. **Statewide Associations, Non-Profits, and Private Organizations** advocate for businesses and industries across our state, provide economic development training, and help promote available resources. Our **Higher Education** institutions play a critical role in growing our businesses and industries by ensuring curriculum and training programs meet the skills demands of Texas industries.

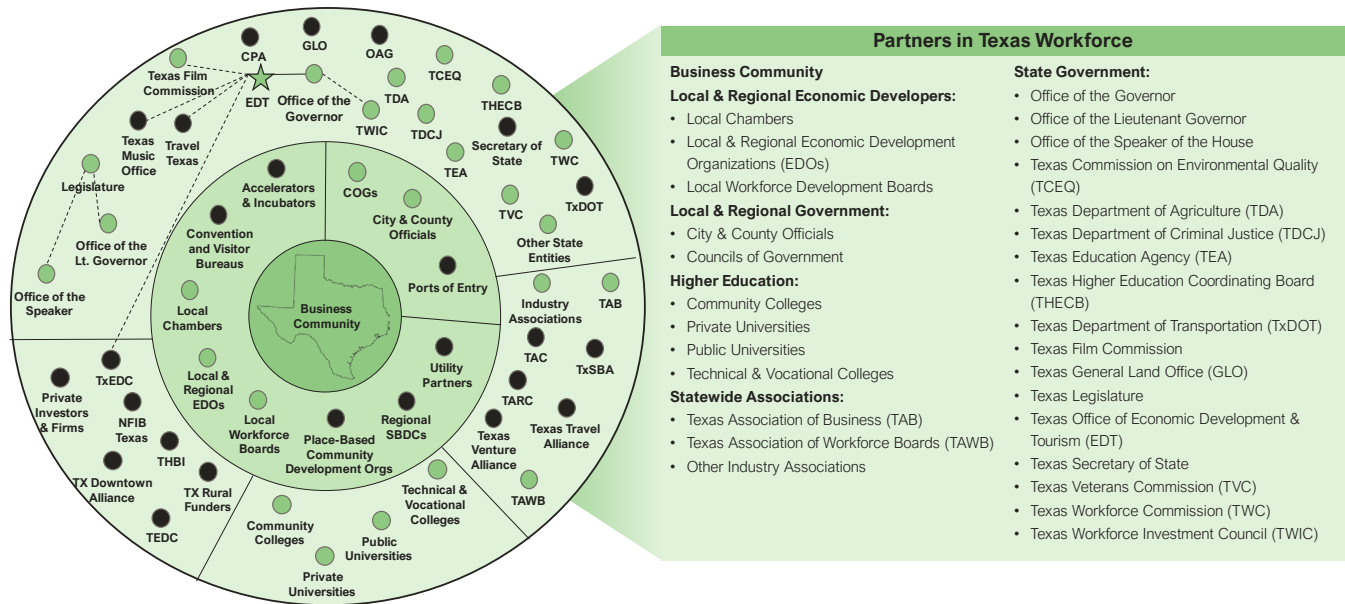
The **State Government** establishes a predictable regulatory framework in which businesses operate, provides business resources and assistance, and creates incentives to attract new businesses and industries to the state.

The **Texas Economic Development & Tourism Office** in the Office of the Governor is a hub of information and resources for the business and industry ecosystem. The office serves as a resource for businesses of all sizes navigating Texas' unique business permitting process and works to support small businesses by providing information and resources for starting or growing a business. EDT also maintains and awards a number of the state's economic incentive funds. EDT works to promote Texas and attract job-creating businesses and industries to our state from all over the world. The section titled *Blueprint for a Stronger Texas of Tomorrow* describes how EDT will continue to support Texas businesses, strategically positioning the state for growth in emerging industries.

Workforce Ecosystem

Our state is home to a young, skilled, diverse, and growing workforce, with Texas leading the nation in job creation. Texas' workforce powers our economy, and the supporting ecosystem is as diverse as our state. The culmination of efforts from partners across Texas will help support our current workforce and prepare our future workforce to take on evolving industry demands and meet the needs of our diverse communities.

Figure 18. Texas Workforce Ecosystem



The ecosystem supporting Texas' workforce — illustrated in Figure 18 above — is a key ingredient in our state's economic success. This workforce ecosystem encompasses all segments of the broader economic development ecosystem. The Texas **Business Community** employs our people, providing fulfilling job opportunities and the income that helps Texas families to prosper. **Local and Regional Government and Economic Developers** work collaboratively with our local workforce boards and educational institutions to help Texans find and maintain employment and ensure local businesses have the workforce they need to thrive. **Statewide Associations, Non-Profits, and Private Organizations** advocate for the workforce needs of Texas businesses and industries and provide resources to help local communities attract and retain a healthy, dynamic workforce. Our **Higher Education** institutions are instrumental in coordinating with business and

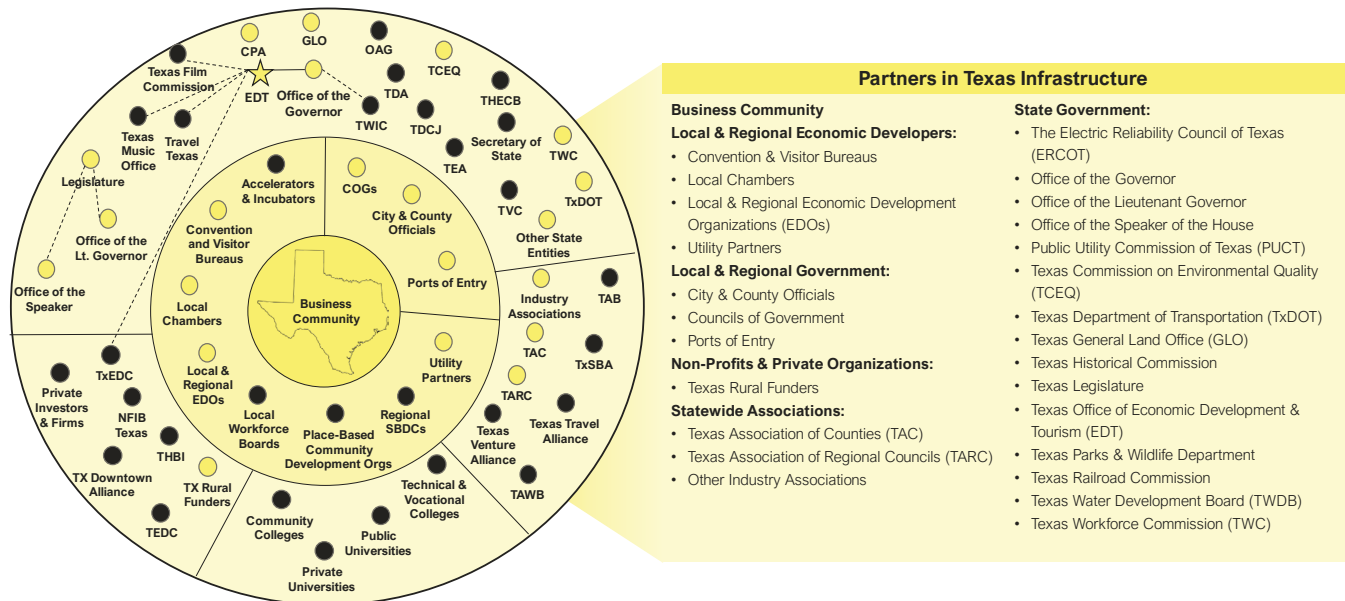
industry partners to help ensure our workforce is prepared to meet industry demands of today and tomorrow. Several current workforce development efforts at the **State Government** level are led by the Tri-Agency Workforce Initiative, a collaborative effort that includes the Texas Education Agency, Texas Higher Education Coordinating Board, and Texas Workforce Commission. Within the **Texas Economic Development & Tourism Office**, the **Texas Workforce Investment Council (TWIC)** serves as the state workforce development board (by federal law) that promotes the development of a highly skilled workforce and aligns the workforce development efforts of its state agency partners under a single workforce system strategic plan.

The *Blueprint for a Stronger Texas of Tomorrow* section describes how EDT, through its partnership with TWIC, will support workforce partners to ensure our workforce is equipped to lead us into the future.

Infrastructure Ecosystem

Infrastructure is a crucial component of economic development, laying the foundation of our communities and setting our industries up for success. Coordination across the infrastructure ecosystem is essential to ensure that Texas' residents, communities, regions, businesses, and industries have the reliable critical infrastructure they depend on.

Figure 19. Texas Infrastructure Ecosystem



Illustrated in Figure 19 above, the infrastructure ecosystem works collaboratively to ensure our state has the infrastructure needed to thrive. Our **Business Community** relies on the supporting ecosystem to provide the infrastructure required to conduct business in Texas. **Local and Regional Government and Economic Developers** oversee local infrastructure, provide the strategies and resources at the local and regional level, advocate for infrastructure development resources, and communicate the needs of their communities. Texas' **Statewide Associations, Non-Profits, and Private Organizations** advocate for the needs of Texas businesses and industries, provide economic development training, and promote available infrastructure resources. Our **Higher Education** institutions also play a critical role in ensuring training is available to help meet the

infrastructure workforce pipeline needs. The **State Government** is responsible for establishing the regulatory framework and ensuring our state's infrastructure is meeting the current and future demands of our growing population and expanding industries across Texas.

The **Texas Economic Development & Tourism Office** serves as a bridge between current and prospective businesses and industries and their anticipated infrastructure needs. The *Blueprint for a Stronger Texas of Tomorrow* section describes how we will support our ecosystem partners in identifying industry infrastructure needs to ensure Texas has the necessary infrastructure in place to meet industry needs, support our growing population, and realize our full economic potential.

Communities are the heart of Texas — and our strategic plan.

In the previous section, we identified the many different players involved in the Texas economic development ecosystem. We also recognize that each region of Texas has unique needs and priorities, and there are other existing strategies and initiatives created by communities, regions, and economic development organizations that are tailored to the unique populations they represent.

To ensure our plan reflected Texas' decentralized approach to economic development, we reviewed and analyzed over 40 local, county, and regional economic development plans at the outset of our plan development process and identified common themes and priorities. We also reviewed other statewide plans to ensure consistency across strategies. The reviewed plans cover all 254 of Texas' counties, as demonstrated in Figure 20. A full list of plans reviewed is included in Appendix C.

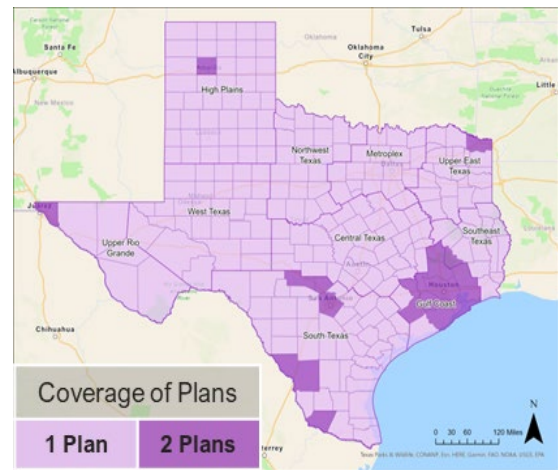
Through our analysis, we identified four key themes across the local, county, and regional economic development plans. The themes are ordered by frequency of appearance in those plans.

1. Business Attraction, Retention, and Growth:

The most common theme identified in local and regional plans was Business Attraction, Retention, and Growth. All Texas regions are prioritizing business recovery and economic diversification to help reduce exposure to any future economic downturns.

2. Workforce Development: Regions across Texas are prioritizing development and growth of their talent pipeline. However, there is some regional nuance in workforce goals. Regions with slowing population growth are investing in talent retention, while regions experiencing rapid growth are seeking to meet growing or changing industry demands.

Figure 20. Economic Development Plans Reviewed



3. Public Infrastructure: Increasing demand on infrastructure is prompting regions across the state to prioritize infrastructure investments to attract new businesses, boost trade, and improve quality of life for their communities.

4. Innovation and Entrepreneurship: Cultivating an environment where people feel empowered to innovate and create new businesses can spur productivity, increase efficiency, generate new jobs, and grow the economy.

To capture the priorities of economic development organizations across the state, these key themes informed the development of our strategic plan's core pillars: Business and Industry, Innovation and Entrepreneurship, Workforce, and Infrastructure. Additional information on the pillars is included in the *Blueprint for a Stronger Texas of Tomorrow* section.





BLUEPRINT FOR A STRONGER TEXAS OF TOMORROW

“We dare to dream, to innovate. We look to the possibilities — not for ourselves, but for our children and their children. Yet even as we continue to grow, we will keep Texas, Texas. And make it even bigger for the generations yet to come.” – Governor Greg Abbott

Texas has made headlines as a national leader in population growth, job creation, innovation, and business attraction for years. We won the Governor’s Cup a record-breaking 12 years in a row for attracting the most corporate relocation and expansion projects in the nation.⁴⁴ We lead in exports and produce nearly 10 percent of all goods manufactured in the U.S.⁴⁵ And we have been the dominant state for population growth over the last two decades.⁴⁶ Texas has excelled on the national stage, and we are now advancing to compete globally on the international stage.

The *Blueprint for a Stronger Texas of Tomorrow* section establishes a vision for our economic future and includes objectives and initiatives that position Texas to capitalize on our momentum and grow the prosperity of our state and our regions. The blueprint will act as a guide for the Texas Economic Development & Tourism Office as we work to ensure that Texas remains the top destination for businesses to locate and expand.

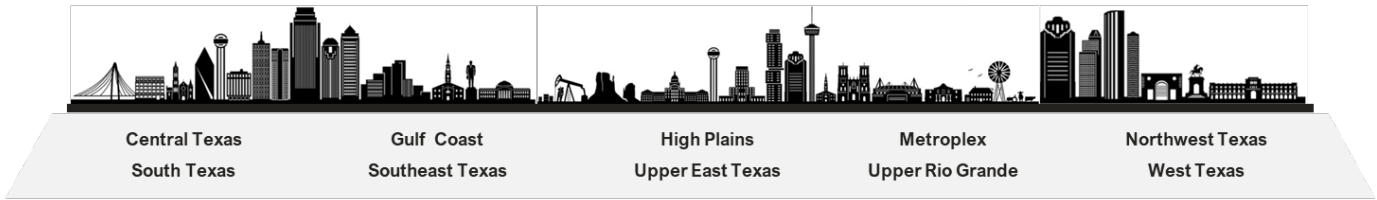
This section is guided by a strategic framework — depicted in Figure 21 shown on the following page — that encapsulates our vision and identifies focus areas and priorities that will help us achieve our goals.

Figure 21. “Bigger. Better. Texas.” Strategic Framework

Vision Statement

Texas is a **global economic powerhouse**. Our rich culture, diverse workforce, and entrepreneurial spirit make Texas the **premier place** to live, work, and visit.

Texas Regions



Target Industry Sectors and Clusters

| | | | | |
|---|--|--|--|---|
| Advanced Manufacturing <ul style="list-style-type: none"> Aerospace Vehicles, Aircraft & Defense Automotive Computers, Electronics & Semiconductor Manufacturing Production Technology & Heavy Machinery | Energy Evolution <ul style="list-style-type: none"> Electric Power Generation and Transmission Oil and Gas Extraction, Production, and Transportation Renewables | Food & Livestock Products <ul style="list-style-type: none"> Food Processing Livestock Processing | Hospitality, Tourism & Culture <ul style="list-style-type: none"> Film, Music and Culture Hospitality and Tourism | Information Technology <ul style="list-style-type: none"> Information Technology & Artificial Intelligence |
| Life Sciences & Biotechnology <ul style="list-style-type: none"> Biotechnology, Pharmaceuticals and Medical Devices Agricultural Science & Technology | Petroleum Refining & Chemicals <ul style="list-style-type: none"> Industrial Chemical Products Petroleum Refining Plastics | Professional Services & Corporate Operations <ul style="list-style-type: none"> Business Services & Corporate Headquarters Financial Services | Rare Earth Elements & Mineral Mining <ul style="list-style-type: none"> Metal Mining Nonmetal Mining | Transportation & Logistics <ul style="list-style-type: none"> Distribution and E-Commerce Transportation and Aviation Services |

Economic Development Pillars

| | | | |
|--|--|---|--|
| <p>Thriving Businesses & Industries</p> <p>Strengthen and accelerate economic growth through targeted business support, expansion, attraction, and retention efforts.</p> | <p>Robust Innovation & Entrepreneurship Ecosystem</p> <p>Identify and promote assets that foster innovation, incentivize entrepreneurship, and enable Texas to remain a global economic leader.</p> | <p>Nimble Workforce Training Environment</p> <p>Inform and advocate for resources that prepare the workforce to meet industry needs and drive business growth.</p> | <p>Resilient Infrastructure Network</p> <p>Support the development of infrastructure that is resilient and equipped to meet community and industry needs.</p> |
|--|--|---|--|

Lead: EDT will take an active role in leading and coordinating initiatives related to these pillars

Align and Signal: EDT will support other stakeholders and partners with initiatives related to these pillars.

How to read this framework: The strategic framework summarizes our vision for the future and establishes the focus areas and priorities that will help us realize this vision. The framework includes Texas’ 10 economic regions, our 10 target industry sectors and associated clusters, and the four pillars that serve as priority areas for EDT.

The framework includes four elements:

VISION: Our future is big and bright.

Positioned at the top of the strategic framework shown on the previous page, our vision statement establishes a shared understanding of the desired future economy in Texas. This vision statement emphasizes Texas' global leadership, diversity, and position as the top place to live, work, visit, and start a business. The first sentence — *Texas is a global economic powerhouse* — indicates our continued aspiration to lead in economic growth. This bold statement is balanced by the very next sentence shown in the strategic framework — *Our rich culture, diverse workforce, and entrepreneurial spirit make Texas the premier place to live, work, and visit* — indicating that we do not just want to grow, but also to maintain the unique character and communities that define our state.

REGIONS: Our thriving regions form the bedrock of Texas' economy.

For the purposes of this strategic plan, we have split the over 268,000 square miles of our state into 10 regions that highlight our rich cultural history and unique economic strengths. Texas succeeds if and only if each of our regions are thriving; therefore, our 10 regions are at the center of the framework, and we will focus our efforts on promoting their individual and collective success. Regardless of your ZIP code, this plan aims to support all of our residents and businesses that choose to call Texas home. This portion of the framework is supported by regional profiles in Appendix A that provide data on each of the 10 regions and identify strengths and opportunities.

TARGETS: Target industry sectors and clusters will drive growth and create jobs for Texans.

Our state and our regions need strong businesses and industries to flourish even more. Through data analysis and stakeholder engagement, we identified 10 industry sectors and 23 supporting industry clusters, shown in Figure 21 on the previous page, that are anticipated to be engines of both job and economic growth for our regions and across our state. These sectors build and expand on the success of the state's current Target Industries: Advanced Manufacturing; Aerospace, Aviation and Defense; Biotechnology and Life Sciences; Corporate Services; Creative; Energy; Information Technology; Petroleum Refining and Chemical Products. The expanded list of target sectors and underlying clusters and industries is included in Appendix D. While all industries and businesses in Texas are important, we will make intentional efforts to grow and expand these target sectors through tailored marketing and outreach efforts. This component of the framework is also backed up by industry sector profiles in Appendix B that provide data on the sectors and clusters and identify opportunities that the state, regions, and business community can use to advance growth.

PILLARS: Our efforts will advance regional priorities and target sector growth.

The four economic development pillars at the base of the framework — Business and Industry, Innovation and Entrepreneurship, Workforce, and Infrastructure — establish priority areas the state and partners can pursue to promote thriving regions and growing target sectors. The pillars were designed to reflect regional priorities and represent key ingredients required for sustainable economic growth. In the following pages, we outline the objectives and initiatives EDT will focus on to advance each of these areas.



Champion X, Odessa

BUSINESS AND INDUSTRY

“When attracting businesses and jobs from around the globe, one Texas advantage tops them all: We want businesses to succeed in Texas; when businesses succeed, all Texans succeed.” – Governor Greg Abbott

Businesses of all sizes and industries thrive in Texas, with more than 10 percent of the nation’s Fortune 500 headquarters and over 3 million small businesses calling our state home.⁴⁷ Our businesses and industries create jobs, provide important services like health care, and bring vibrancy and character to our communities. When our businesses and industries succeed, Texans benefit from plentiful and diverse job opportunities, and investment and opportunity flow into our state.

The opportunity to start and grow a business is open to all Texans; approximately 20 percent of the nation’s Hispanic business owners and 10 percent of the nation’s Black business owners are located in Texas, along with over 1.3 million women business owners.⁴⁸ Texas’ industries are also critical to our national and international economies. From supplying resources like energy and food to delivering aviation and aerospace components and creating technological solutions that revolutionize industries, Texas does it all.

To continue to create jobs and grow our business community, the Texas Economic Development & Tourism Office takes a leading role in bringing businesses of all types to Texas. The Business and Industry pillar of our strategy aims to build on Texas’ historic strengths while fostering the growth of new and emerging industries. Through targeted marketing efforts, technical assistance, and national and international outreach, we will pursue diversified economic growth and expanded global leadership. The following section outlines the objectives and initiatives we will undertake to accelerate the growth of our state’s businesses and industries and also highlights connected partner plans and initiatives across the state.

BUSINESS & INDUSTRY Objective 1: Accelerate target sector and cluster growth.

The target sectors and clusters identified in this plan (see Appendix D for full list) represent the marquee industries currently thriving in Texas, such as aerospace, aviation and defense, energy, and semiconductor manufacturing, as well as emerging industries like biotechnology, artificial intelligence (AI), and rare earth elements. Growing the identified target sectors and clusters offers the greatest potential for creating significantly more high-quality jobs, attracting record new investment, and exponentially expanding opportunities for more Texans across all regions. EDT will take the following actions to accelerate that growth.

ACTION ITEMS:

1.1 Identify policies and procedures at the state level that adversely affect industry and small business growth; recommend actions to remove roadblocks and increase efficiency.

EDT will work with state agency partners to identify policies and practices at the state level and across industries that unnecessarily hamper business formation, operation, and growth in Texas and develop recommendations to remove roadblocks and increase efficiency.

1.2 Expand promotion of existing incentives and financing programs.

EDT will expand our promotion of the portfolio of grants, financing, and tax rebate programs offered by EDT and state agency partners and proactively connect target sector businesses to local and regional governments that offer other incentives and financing programs to attract, retain, and accelerate growth of target sector companies in Texas.

1.3 Execute targeted sector and cluster-specific marketing strategies.

EDT and our partners at the Texas Economic Development Corporation (TxEDC) will execute sector and cluster-specific marketing strategies that promote our state's competitive advantages to businesses, decision-makers, and site selection

consultants around the world. Travel Texas in EDT will work with their partners in the tourism and hospitality industry on advertising and marketing programs and domestic and international trade shows and missions that will drive increasing travel and tourism spending to Texas.



1.4 Assign industry specialists within EDT for each target sector.

EDT provides premier business expansion and relocation support for companies of all sizes and across all industries: generating and identifying leads, providing permitting and licensing support, promoting international trade, and connecting companies to financial tools. To further accelerate industry growth, we will assign a designated point of contact within EDT for each of our 10 target sectors. That industry specialist will work with target sector businesses to connect them to regional and state supports, incentive programs, and export services.

1.5 Expand EDT industry outreach across targeted sectors.

To ensure continuing growth across regions, all divisions within EDT, including the Texas CHIPS Office, the Texas Film Commission, the Texas Music Office, and Travel Texas, will accelerate industry outreach in all targeted sectors to attract new business investments and production activity as well as destination travel and event hosting to spur local job creation and economic expansion and support a high quality of life in communities across Texas.

BUSINESS & INDUSTRY Objective 2: Aggressively advance Texas' global economic leadership.

Texas' businesses of all sizes are essential to the global economy. We are the nation's leader in exports, and nearly 93% of all Texas exporters are small businesses. Texas is also home to over 1,900 foreign corporations and the top destination for foreign direct investment (FDI) over the last two decades. As economies become increasingly interconnected, Texas has an opportunity to increase foreign direct investment and international trade through enhanced marketing, collaboration, and export efforts. EDT will take the following action to aggressively advance our global leadership.

ACTION ITEMS:

2.1 Identify red tape at the state level that impedes the expansion of Texas exports, recommend actions to increase efficiency, and assist Texas exporters.

Within EDT, the International Business and Trade team works with small and medium-sized Texas businesses to support expansion into international markets. EDT will work with our state agency partners to identify regulatory red tape at the state level that impedes expansion of exports, especially for small businesses, and recommend solutions to increase efficiency and speed to market. EDT will provide enhanced technical assistance for Texas

businesses to grow their foreign and domestic exports and promote similar efforts at the local and regional level.

2.2 Ensure Texas remains competitive in attracting new global business investment.

Because Texas operates on a global stage, EDT will evaluate incentives offered and develop recommendations to enhance Texas' ability to attract new global business investment. Through research and data-driven analysis, EDT will develop recommendations to accelerate growth in the target sectors.

2.3 Catalyze growth of essential supply chain materials and components from Texas-based manufacturers.

EDT will focus on catalyzing business growth in critical industries in Texas to help mitigate any future global supply chain interruptions, including through promotion of state incentive programs such as the Texas Enterprise Fund (TEF), the Texas Jobs, Energy, Technology, and Innovation (JETI) program, and the Texas Semiconductor Innovation Fund (TSIF).

2.4 Expand participation in international delegations to promote Texas exports and foreign direct investment.

EDT leads international trade missions and partners with TxEDC on foreign direct investment missions to deepen Texas' collaboration with countries across the world, attract job-creating business investments, and expand awareness of the Texas brand. Together, EDT and TxEDC, along with business and community partners, will aggressively promote the growth of exports and foreign direct investment by expanding participation in international delegations and trade missions to targeted, high-impact locations.

2.5 Leverage Texas' growing international presence to drive increased exports and investment.

The State of Texas Mexico Office and the new State of Texas Taiwan Office, recently opened with funds appropriated in the 88th Texas Legislature, bridge the business communities of Texas and our international partners. EDT will capitalize on this expanded global presence to accelerate the growth of Texas exports and investments. We will also partner in and promote local and regional governments' efforts to also establish additional international presence.

2.6 Promote cross-border collaboration and accelerate growth of industry clusters that span jurisdictional boundaries.

Connected through over 1,200 miles of common border stretching from the Gulf of Mexico to El Paso, Texas' partnership with Mexico is a key economic asset. To promote increased cross-border collaboration and accelerate our shared industry cluster growth, EDT will increase participation in international stakeholder groups, to include the International Bridges Steering Committee and the Border Trade Advisory Committee (BTAC).



World Trade Bridge, Port Laredo

BUSINESS & INDUSTRY Objective 3: Expand local and regional economic development capacity.

Local and regional economic development organizations across Texas are fundamental to our ongoing economic success, as they are best positioned to understand their communities' needs and to develop initiatives that align with their goals and unique advantages. They also provide tailored business assistance services that help companies find the locations, facilities, and workforce required to locate and expand within their region. However, not all local and regional economic development organizations in Texas have the capacity or tools required to effectively meet the needs of their communities. EDT will take the following actions to expand the effectiveness of Texas' local and regional economic development efforts.



Waco Skyline, Waco CVB

ACTION ITEMS:

3.1 Increase community outreach by EDT Regional Offices.

Community Relations representatives within EDT are located across the regions of Texas and support local and regional economic development efforts, providing economic development education and resources, representing EDT and the Office of the Governor at community events and industry conferences, and meeting with local business and government leaders. EDT and its regional team members will proactively expand outreach to local economic development partners to leverage the strategic planning, small business, and research and analysis expertise within EDT.

3.2 Amplify local and regional economic development efforts by expanding networking and knowledge sharing.

Economic development resources and tools along with best practices from other communities can amplify the impact of local and regional economic development efforts. With support from the Texas Economic Development Council (TEDC) and other statewide associations, EDT will raise awareness

of the portfolio of available tools and guides, such as TEDC’s economic development courses and EDT’s **Innovation & Entrepreneurship Catalog** introduced with this plan, which lists hundreds of innovation and entrepreneurship assets throughout Texas, including incubators, accelerators, venture capital firms, angel investor networks, and higher education resources.

3.3 Expand community participation in EDT force-multiplier programs.

To provide communities the tools and resources needed to attract new business investments in Hospitality, Tourism, and Culture, support local job growth, draw visitors from across the country and around the world, and attract and retain talent across a range of industries, EDT will expand the Digital Media Friendly Texas, Film Friendly Texas,

Music Friendly Texas, and Tourism Friendly Texas Certified Community programs and other ongoing community outreach efforts of the Texas Film Commission, the Texas Music Office, Travel Texas, and our EDT Regional Offices.

3.4 Launch a Small Business Friendly Texas Certified Community program.

To ensure all Texas communities, especially small and rural communities with limited resources, have the tools to support aspiring entrepreneurs and small business owners in their hometowns, EDT will work with stakeholders to develop a Small Business Friendly Texas Community Certification program for communities modeled after the highly impactful Digital Media Friendly Texas, Film Friendly Texas, Music Friendly Texas, and Tourism Friendly Texas Certified Community programs.

BUSINESS & INDUSTRY Objective 4: Pursue strategic funding opportunities.

Federal funding enables us to increase our support for businesses, invest in the growth of our target sectors, and expand export assistance. Capitalizing on strategic federal funding opportunities that align with our goals will increase the impact and capacity of our efforts. EDT will take the following action to achieve this objective.

ACTION ITEM:

4.1 Identify federal funding opportunities that align with areas of strategic focus.

New state programs and incentives, such as those administered in the Texas CHIPS Office in EDT, were established to leverage the funding available through federal programs such as the

federal CHIPS and Science Act. EDT will identify and advise on other opportunities for Texas to more actively leverage federal funding programs that align with goals identified in this plan, such as target sector growth and regional economic development capacity.



Selection of Connected BUSINESS & INDUSTRY Plans and Initiatives

A variety of organizations across Texas are working to promote the success of our businesses and industries. Below is a list of selected plans and initiatives led by the Office of the Governor and other economic development stakeholders that are aimed at promoting business and industry growth throughout the state:

- **Texas CHIPS Office, Texas Economic Development & Tourism:** The Texas CHIPS Office is a new division within EDT created to encourage semiconductor-related companies to expand in the state, further develop the expertise and capacity of institutions of higher education in Texas, and maintain the state's position as the national leader in semiconductor manufacturing. The semiconductor industry falls within Advanced Manufacturing in this plan's list of target sectors.
- **Texas Space Commission:** The Texas Space Commission, launched in March 2024 following the 88th Texas Legislative Session, is a panel of space experts and industry leaders that will convene to promote the growth of the space industry in Texas.
- **Texas Association of Business – Texas Competitiveness and Resiliency Strategy:** The Texas Competitiveness and Resiliency Strategy is a framework that outlines recommendations aimed at strengthening Texas' position as a global economic power and fostering the technologies of the future.
- **Various Regional Economic Development Organizations – Comprehensive Economic Development Strategies (CEDS):** Funded through the U.S. Economic Development Administration, CEDS are regionally driven economic development strategies that assess the current state of Texas' regional economic and include recommendations for growth.
- **Texas Department of Agriculture – State Trade Expansion Program:** The State Trade Expansion Program is a financial assistance program aimed at creating or expanding the export capacity of small businesses.
- **Texas Economic Development Council – Economic Development Courses and Workshops:** The Texas Economic Development Council supports regional economic development capacity through the facilitation of basic courses as well as tailored workshops and webinars on hot topics such as sales tax, lead generation, and foreign trade zones.

INNOVATION AND ENTREPRENEURSHIP

“The story of Texas has long been written by men and women willing to take a risk, to dig deep into their own pockets and stake their future on an idea. From our small-town downtowns to our big city centers, that pioneering spirit still fuels our shared prosperity today.” – Governor Greg Abbott

Texas has a long and storied history of innovation and entrepreneurship. We’ve seen this legacy grow in recent years as an increased number of new and innovative businesses have chosen to make Texas home. The same business-friendly climate that attracts entrepreneurs also breeds innovation. Texas’ predictable regulatory environment, young and dynamic workforce, and thriving economic centers provide all the ingredients needed to start a business, bring a new idea to life, or develop and employ cutting-edge technology.

The Lone Star State has established itself as a hub for entrepreneurs. Home to more than 3.2 million small businesses and startups, Texas has consistently been named the “Best State for Business” by America’s CEOs.⁴⁹ Texas is also known for our spirit of innovation. Many inventions and scientific breakthroughs that shape today’s industrial landscape were developed in Texas.

To promote continued innovation and entrepreneurship in Texas, the Texas Economic Development & Tourism Office will work collaboratively with our partners to market Texas as the premier destination for businesses and provide Texans the support and resources needed to establish thriving companies and innovate for the future. Together we can ensure Texas remains a magnet for entrepreneurs and an incubator for innovations that improve the lives of our citizens and shape the future of economies.



INNOVATION & ENTREPRENEURSHIP Objective 1: Promote the incentivizing of innovation and research.

Texas has a well-established brand as a destination for self-starters and free thinkers. We will capitalize and build on this brand by supporting Texas entrepreneurs and promoting Texas' innovation and research initiatives. EDT will take the following actions to secure Texas' global leadership.



ACTION ITEMS:

1.1 Expand awareness of existing Texas research and innovation initiatives.

Texas offers a variety of competitive research and innovation incentives. At the state level, the Governor's University Research Initiative (GURI) attracts distinguished researchers from around the world to Texas; the JETI program brings new jobs and investment to the state; and the R&D tax exemption/credit encourages research and innovation. Additionally, many local and regional governments across the state offer innovation support, such as the Bexar County Innovation Fund. To increase the impact and utilization of these programs, EDT will promote these initiatives to Texas businesses, higher education institutions, and regional partners.

1.2 Evaluate the economic impact of our existing research and innovation initiatives.

EDT will conduct economic impact studies to measure direct, indirect, and induced employment, income, and economic outputs of the existing innovation programs such as GURI and TEF and new programs such as JETI and TSIF and provide that analysis to the Texas Legislature to inform future programs and enhancements.

1.3 Catalyze research coming out of Texas higher education institutions.

Together with our state agency and higher education partners, EDT will identify opportunities to catalyze research coming out of our higher education institutions, through programs such as TSIF, and by identifying levers at the state level to speed commercialization and technology transfer.

INNOVATION & ENTREPRENEURSHIP Objective 2: Cultivate innovation and entrepreneurship within the target sectors.

The target sectors identified in this plan offer the greatest potential to drive significant growth and job creation in Texas. Investing in innovation and entrepreneurship in these sectors will support their expansion, grow Texas' unique global competitive advantages, and further expand an already-robust startup ecosystem. EDT will take the following actions to cultivate innovation and entrepreneurship within our target sectors.

ACTION ITEMS:

2.1 Connect aspiring Texas entrepreneurs and small business owners to new funding opportunities supporting a flourishing startup ecosystem.

EDT will actively promote the new **Innovation & Entrepreneurship Catalog** developed through this strategic planning process that lists hundreds of innovation and entrepreneurship assets in Texas, including incubators, accelerators, venture capital firms, angel investor networks, and higher education resources. EDT will work with local and regional partners to expand access to this catalog and other resources supporting a flourishing startup ecosystem.

2.2 Expand EDT's promotion of existing innovation incentives and initiatives related to target sectors.

Texas has established a portfolio of programs and incentives at the state and local levels aimed at growing and encouraging innovation within our target sectors. Many of these programs, such as TEF and the Texas Moving Image Industry Incentive Program (TMIIP), have already had a positive impact on sector business attraction and growth efforts. EDT will leverage and expand promotion of these incentives to drive innovation and growth within our target sectors and clusters.



The Chosen, Filmed in Weatherford

2.3 Leverage new state programs to attract and grow innovative small and medium-sized companies in key target sectors.

Legislation passed in the 88th Texas Legislature established new programs and incentives focused on innovation in key industries including space and semiconductor manufacturing and design. Newly established programs include TSIF as well as the Texas Space Exploration and Aeronautics Research Fund. EDT will work through the new Texas CHIPS Office and the newly established Texas Space Commission to incentivize innovative small and medium-sized companies to start, locate, and scale in Texas.

2.4 Identify opportunities for expansion of innovation and entrepreneurship programs in target sectors without an existing program.

While Texas offers programs and initiatives for a selection of our target sectors, not all target sectors benefit from dedicated innovation and entrepreneurship programming. Working with our local and regional partners, EDT will gather information to establish or expand sector-specific initiatives to be shared with the Texas Legislature as well as local and regional governments to inform future planning efforts.

INNOVATION & ENTREPRENEURSHIP Objective 3: Connect Texas innovators and entrepreneurs to education and resources.

Texas boasts a strong network of innovation and entrepreneurship resources; however, some founders and business owners either do not have access to resources or are not aware of the tools at their disposal. By connecting more innovators and entrepreneurs to incubators, accelerators, funding sources, and other resources, we can help startups and small business not only survive but grow to become major job creators in Texas. EDT will take the actions below to better connect innovators and entrepreneurs to resources.

ACTION ITEMS:

3.1 Support and promote initiatives that encourage private funders to invest in Texas startups. Access to capital is often cited as a top barrier to starting and growing a business in Texas. To increase the amount of available funding and spur business creation across our state, EDT will support initiatives that encourage private funders to invest in Texas startups. We will also partner with statewide associations to help promote investment in our target sectors.

3.2 Connect Texas entrepreneurs and small businesses to funding opportunities. EDT will actively promote the newly developed **Innovation & Entrepreneurship Catalog** that lists hundreds of innovation and entrepreneurship assets in Texas, including incubators, accelerators, venture capital firms, angel investor networks, and higher education resources. EDT will work with our local and regional partners to expand access to this resource.

3.3 Expand education outreach for Texas startups and small businesses. The Small Business Assistance team within EDT supports entrepreneurship and the growth of small and medium-sized businesses through entrepreneurial support, education, and technical assistance. To connect more Texas innovators and entrepreneurs with the opportunity to grow and thrive, EDT will expand programs such as the Governor’s Small

Business Summits hosted across the state, the Governor’s Small Business Resource Portal, the Governor’s Small Business Webinar Resource Library, and other programs to connect more Texas entrepreneurs with our local, state, and federal partners offering the tools, training, and funding opportunities needed to start, strengthen, and grow a business.

INNOVATION & ENTREPRENEURSHIP Objective 4: Promote Texas as a top global destination for innovation and entrepreneurship.

The legend of Texas writes itself, but we can help spread the word. The more aspiring innovators and entrepreneurs understand what Texas has to offer, the more likely they are to start and grow their businesses in our state. By highlighting success stories of those who have launched and grown their businesses in Texas, we can inspire more innovators to bring their businesses to Texas and encourage those who are considering building a company to take the leap. EDT will take the following actions to promote Texas as the destination for innovation and entrepreneurship.

ACTION ITEMS:

4.1 Launch a marketing campaign spotlighting Texas innovators and entrepreneurs.

Innovators and entrepreneurs from all industries and backgrounds have experienced success in Texas. Highlighting their stories from across all sectors and regions will demonstrate to the world the advantages that Texas offers and help inspire generations of Texan innovators and entrepreneurs. EDT will collaborate with our partners such as TxEDC to launch a new marketing campaign promoting innovation and entrepreneurship all across Texas.

4.2 Promote entrepreneurs and innovators from Texas at select industry conferences and tradeshows.

EDT teams regularly attend trade shows and conferences in the U.S. and abroad to promote Texas as the premier destination for business. To expose more Texas businesses to new markets and customers and market our state as the destination for innovation and entrepreneurship, EDT will invite our leading Texas innovators and entrepreneurs to attend select industry conferences and trade shows.



Selection of Connected INNOVATION & ENTREPRENEURSHIP Plans and Initiatives

A variety of organizations across Texas are working to promote innovation and entrepreneurship. Below is a list of selected plans and initiatives led by state agencies and economic development stakeholders that are aimed at promoting innovation and entrepreneurship throughout Texas:

- **Texas Association of Business – Tech Means Business Coalition:** Led by tech industry leaders, this business coalition advocates for forward-looking policies that drive innovation and growth.
- **Texas Department of Transportation (TxDOT) – Texas Technology Task Force:** TxDOT’s Technology Task Force consists of cross-industry subject matter experts from the public and private sectors who offer expert input on new technologies and develop strategic recommendations.
- **Texas Oil & Gas Association (TXOGA) – Energy Elevated Technology Showcase:** This annual showcase, held by TXOGA, highlights new technology solutions and successes in the oil and gas industry, bringing together industry leaders and promoting Texas as a hub of energy innovation.
- **Texas Higher Education Coordinating Board (THECB) – Technology Innovation & Commercialization (*Building a Talent Strong Texas*):** This plan, created by THECB, outlines goals for the future of Texas, including targets for R&D expenditures and research doctorates.



WORKFORCE

“The students in our classrooms today are the job creators of tomorrow. The strategic investments we are making in education and workforce development will expand the path to prosperity for more Texas families for decades to come.” – Governor Greg Abbott

Texas’ people are our greatest economic asset. The youth, size, diversity, and tenacity of our workforce are unique to Texas and have been instrumental in fueling our state’s economic growth. Businesses around the globe are attracted to Texas’ strong, skilled talent pool, and in turn, create jobs and opportunity across our regions.

To maintain our position as a global leader and set Texans up for success in the future economy, we will support efforts to cultivate a workforce that is skilled, flexible, and resilient. We will ensure our workforce is equipped to meet current and future industry demands to propel our state into the future. The Workforce pillar of our strategy aims to promote the development of a workforce system that continues to support our existing workforce, attract top talent, and prepare the next generation of Texans to fill the jobs of the future.

EDT will play an advisory role in the Workforce pillar, informing and publicizing efforts of workforce players such as the Texas Workforce Investment Council (TWIC), Texas state agencies, statewide associations, and the broader workforce system. Together, we will collaborate to efficiently forecast and communicate industry workforce needs, promote workforce development resources, and facilitate a streamlined flow of information from employers to education and training providers to Texans to create the best possible outcomes for Texas’ workforce.

Our Workforce pillar initiatives include and build upon goals in TWIC’s latest strategic plan, *“Accelerating Alignment: Texas Workforce System Strategic Plan”* (adopted in 2023), which established the framework that will drive Texas’ workforce system operations from 2024 through 2031. Workforce initiatives that were included or adapted from the TWIC strategic plan are identified with an asterisk. Accomplishing our strategic workforce objectives will underpin the state’s next phase of economic growth.

WORKFORCE Objective 1: Build the target sector workforce pipeline.

A pivotal factor in the growth of our target sectors and clusters is the availability of skilled workers ready to meet industry needs. As champions of the target sectors and clusters, we will focus efforts into facilitating the alignment of sector and cluster industry needs with workforce resources. By anticipating workforce needs and advocating for related programming, EDT will support the development of a workforce pipeline ideal for the attraction, retention, and growth of businesses within the target sectors. EDT will achieve this objective through the actions outlined below.

ACTION ITEMS:

1.1 Promote the diversity and availability of workforce opportunities within the target sectors and clusters to Texans seeking to advance and to other individuals interested in relocation.

EDT helps to attract top talent to the state through marketing efforts both from a business and tourism perspective. To grow the talent pipeline for our target sectors and clusters, we will work with our state agencies and other partners to create marketing initiatives that increase awareness of the diversity and availability of job opportunities and promote workforce development opportunities aligned with sector skill needs. Through the Texas Film Commission and Texas Music Office in EDT, we will expand promotions of job opportunities in digital media, film, and music to connect more Texas talent and increase promotions of the skills development and educator outreach programs offered.

1.2 Support research and outreach efforts that identify and predict workforce needs and gaps within target sectors and clusters.

EDT regularly conducts research and analysis to understand the current state and future needs of our target sectors and clusters. We will coordinate and collaborate with TWIC and our other agency partners to ensure that this analysis informs the targeted development and the prioritization of workforce development initiatives across Texas.

1.3 Support upskilling and reskilling programs in the target sectors and clusters.*

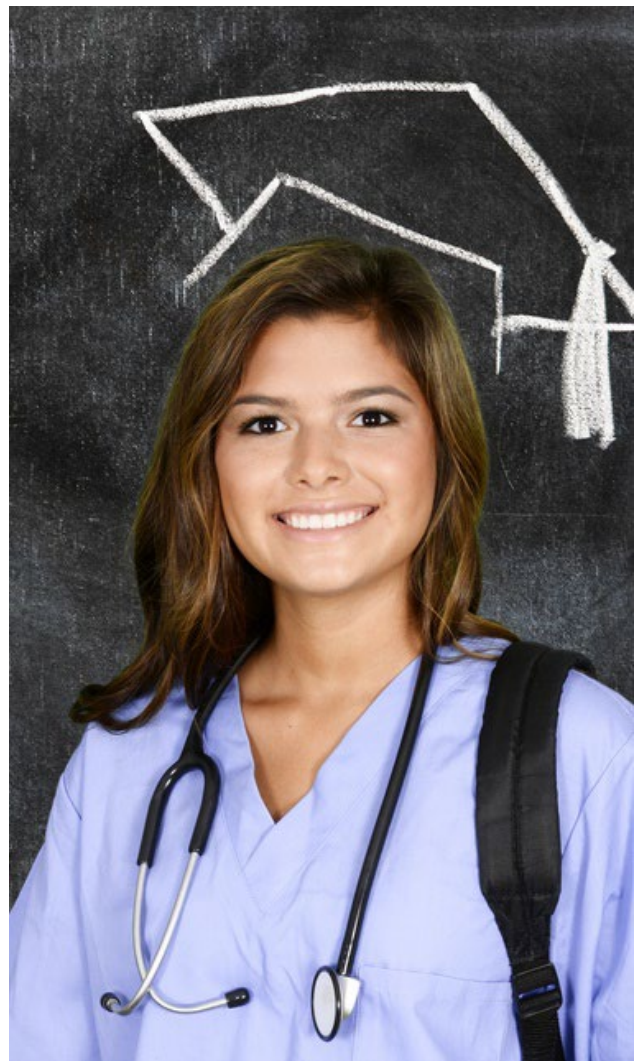
Upskilling and reskilling programs in Texas support the resiliency of our workforce by providing the training for Texans seeking to advance in their role or transition to a new role. Leveraging the efforts identified in the “Accelerating Alignment: Texas Workforce System Strategic Plan,” EDT will encourage the development of upskilling and reskilling programs in target sectors and clusters.

1.4 Promote the increase of adult education transition to employment within the target sectors and clusters.*

Adult education helps adults ages 18 and older gain new skills and transition to in-demand job opportunities. As outlined in the “Accelerating Alignment: Texas Workforce System Strategic Plan,” TWIC’s agency partners are working to increase the impact of adult education in Texas by increasing learner persistence to completion, education, and employment. Through TWIC, EDT will collaborate with its workforce system partners to support the alignment of integrated education and training programs with our target sectors and clusters and encourage our industry partners to support the employment of graduates within the sectors.

1.5 Support the increase of short-term credentials in high-demand occupations in the target sectors and clusters.*

Short-term credentials (usually 12 months or less) support the flexibility of our workforce and allow our talent pipeline to quickly respond to industry needs. EDT through TWIC will collaborate with workforce system partners to identify and deliver programs that support the attainment of short-term credentials in high-demand occupations within the target sectors.



WORKFORCE Objective 2: Uplift all Texans through education and training opportunities.

A successful workforce development system is one that works to meet the needs of a diverse and growing population regardless of their stage in life or ZIP code. To maintain our status as a premier business destination and open doors for Texans, it is critical that we persist in evolving our workforce development system to meet the needs of both our current population and tomorrow's economy. This objective focuses on improving workforce opportunities for all Texans and will be completed in collaboration with TWIC, state agencies, statewide associations, and workforce system partners, as outlined below.



ACTION ITEMS:

2.1 Support growth of work-based learning opportunities.*

Work-based learning helps create an experienced, informed workforce by exposing Texans to diverse employment opportunities while building tangible job skills. Work-based learning encompasses a variety of opportunities in the workplace, such as paid internships and pre-apprenticeship programs. As identified in “Accelerating Alignment: Texas Workforce System Strategic Plan,” TWIC’s system partners are focusing on the expansion of work-based learning opportunities as a core education and training pre-employment strategy for youth and adults. EDT will help expand awareness and use of work-based learning and pre-employment programming among employers, thereby ensuring more Texans have the opportunity to gain work-based learning experiences.

2.2 Support growth of industry-recognized apprenticeship programs.*

Apprenticeship programs help Texas employers develop their current and future talent supply and help Texans develop and demonstrate essential skills and improve career readiness by providing an “earn while you learn” work experience. As “Accelerating Alignment: Texas Workforce System Strategic Plan” notes, workforce system partners are working to expand registered and industry-recognized apprenticeship programs. EDT will

support TWIC and state agencies in increasing resident and employer awareness of the benefits of and participation in apprenticeship programs.

2.3 Facilitate cross-sector and cross-regional partnerships that increase the awareness and impact of Texas workforce resources.

Texas has developed a rich array of workforce development resources and a broad collaborative network of workforce system partners at the state,

regional, and local levels. However, opportunities exist to improve the awareness and utilization of programs and initiatives that ensure that more Texans have the skills and credentials needed for economic advancement. EDT will work with TWIC, state agencies, statewide associations, and local and regional partners to promote existing cross-sector and cross-regional collaborations that foster the growth of regional talent pipelines to promote economic expansion.

WORKFORCE Objective 3: Enhance the flexibility and responsiveness of the workforce development system in Texas.

Texas has a robust workforce development system comprised of our school systems, higher education institutions, local workforce development boards, training providers, non-profit organizations, and more. However, the breadth of this ecosystem can make it challenging to quickly adapt to shifting resident and industry needs. By collaborating and sharing information across the ecosystem, EDT will help improve the flexibility and responsiveness of our workforce development system. The initiatives below detail how EDT plans to achieve this objective.

ACTION ITEMS:

3.1 Identify more partnership opportunities across state agencies and organizations and establish forums for collaboration.

Enhancing collaboration across state agencies and other partner organizations will improve the impact and efficiency of the entire workforce system. Through our work with businesses and regions across Texas, as well as our regular interactions with agencies across state government, EDT has unique insight into the opportunities for partnership and collaboration. EDT will work with TWIC, state agencies, industry leaders, and local and regional economic developers to identify and facilitate the creation of partnerships across the ecosystem and establish forums for cross-agency and cross-region collaboration.

3.2 Support coordination with workforce system partners to strategically engage with industry and employers on workforce needs and priorities.

Efforts to anticipate and address industry and employer workforce needs continuously occur throughout the state. However, there is the opportunity to streamline efforts to improve their effectiveness and efficiency and minimize the burden on our industry partners. EDT will support TWIC and the Tri-Agency Workforce Initiative to ensure requests to businesses and industry are consolidated, that identified workforce needs are shared across state agencies, and that state agencies coordinate to address industry needs and priorities.



Graphic Packaging International, Waco

Selection of WORKFORCE Connected Plans and Initiatives

A variety of organizations across Texas are working to advance workforce development. Below is a list of selected plans and initiatives led by the Office of the Governor and other economic and workforce development stakeholders that are aimed at promoting workforce success throughout Texas:

- Texas Workforce Investment Council (TWIC) – Accelerating Alignment: Texas Workforce System Strategic Plan:** The 2024-2031 strategic plan developed by TWIC and its partners establishes the framework for the operation of Texas' workforce system. The plan identifies and coordinates goals to support and advance our state's workforce.
- Texas Higher Education Coordinating Board – Building a Talent Strong Texas:** *Building a Talent Strong Texas* establishes the Texas Higher Education Coordinating Board's plan to expand opportunities for all Texans to earn degrees, certificates, and other credentials by 2030.
- Office of the Governor – Texas Talent Connection Program:** This competitive grant program supports innovative education and workforce skills training programs that lead to successful job placement, increased wages, improved job retention, and enhanced quality of life.
- Texas Education Agency – Pathways in Technology Early College High Schools (P-TECH):** P-TECH schools are innovative open-enrollment high schools that offer students least likely to attend college an opportunity to receive both a high school diploma and a credential and/or associate degree.
- Texas Workforce Commission – Office of Apprenticeship Programs:** The Office of Apprenticeship Programs in TWC supports the development and expansion of apprenticeship programs that help employers build their current and future talent pipeline.
- Texas Workforce Commission – Veterans Services Program:** The Veterans Services Program helps veterans attain an education, receive training, and secure a job. Veterans also receive priority service at Texas' Workforce Solutions offices.



INFRASTRUCTURE

“Texas is the gateway to global trade. Reduced supply chain costs and improved logistical efficiency are two of the top advantages of Texas’ central location in North America and our proximity to Mexico, along with the state’s robust infrastructure and transportation networks that provide timely access to domestic and global markets via air, land, and sea.” – Governor Greg Abbott

Businesses, residents, and visitors rely on Texas’ vast infrastructure and transportation network to access markets and destinations across Texas and around the world. From roads to ports to broadband, our infrastructure keeps us connected and competitive. Enhancing the resiliency, efficiency, and connectivity of Texas’ infrastructure is paramount to enabling future economic growth and building vibrant, sustainable communities.

The Infrastructure pillar of our strategy aims to support the creation and maintenance of an infrastructure network in Texas that facilitates growing industries and flourishing regions. The pillar is focused on both resilient core infrastructure — roads, rail, waterways, ports, electricity and gas, airports, etc. — as well as next-generation, industry-specific infrastructure such as testing facilities, spaceports, and oil pipelines.

EDT will play an advisory role in the Infrastructure pillar, informing and supporting state agency partners such as the Texas Department of Transportation whose core mission is to plan and develop infrastructure. As our population booms and new residents and businesses flock to Texas, state agencies will continue to work together to accommodate growth and ensure that high-quality infrastructure is accessible to all Texans from Beaumont to El Paso, from Amarillo to Brownsville, and all across the state.

Building and maintaining infrastructure for a state as large and diverse as Texas requires coordination, collaboration, and continuing investment. It takes the collective effort of state agencies, local and regional governments, business and industry leaders, and others to identify needs, secure funding, build infrastructure, and maintain our facilities. To support these efforts, EDT will work with our partners to anticipate, communicate, and address the infrastructure needs and priorities of our regions and target sectors.

INFRASTRUCTURE Objective 1: Support regional infrastructure capacity, efficiency, and connectivity.

Texas' core infrastructure grid is essential to the success of our economy. Our transportation, energy, water, and broadband networks connect businesses to markets and residents to economic opportunity. As a state government, we have an opportunity to strategically invest in the future of Texas by enhancing the capacity, efficiency, and connectivity of our infrastructure network. To support the creation and maintenance of world-class infrastructure, EDT will take the following actions.



ACTION ITEMS:

1.1 Provide agency partners with input on infrastructure project prioritization.

EDT has unique insights into the infrastructure needs and priorities of communities and industries across Texas. Through industry and community engagement, we hear firsthand from business leaders and local economic developers on the types of infrastructure most impactful in growing their industries and building the resiliency of their regions. By sharing the knowledge and insight of local communities and industry partners, EDT will provide input to help state agencies, such as the Texas Department of Transportation, Texas Commission on Environmental Quality, Texas Water Development Board, and Public Utility Commission of Texas.

1.2 Actively support state agency partners in competing for federal infrastructure funds.

EDT will work collaboratively with state agency partners on competitive infrastructure funding opportunities. We will also support our local and regional partners in pursuing available federal funding opportunities where a Texas location is not in competition with another Texas applicant.

INFRASTRUCTURE Objective 2: Inform the development of world-class infrastructure that catalyzes the growth of the target sectors.

To maintain and grow its global competitiveness, Texas needs both strong core infrastructure as well as cutting-edge, specialized industry facilities and assets. From the high-tech labs of the Life Sciences and Biotechnology sector to the hundreds of thousands of miles pipelines in the Energy Evolution sector to the large-scale testing facilities of the Advanced Manufacturing sector, Texas has an opportunity to create and expand distinctive, next-generation infrastructure assets that attract and catalyze the growth of our target sectors. EDT will take the following action to maintain and grow Texas' leadership in target sector and cluster infrastructure.

ACTION ITEM:

2.1 Increase collaboration with industry leaders and state agencies to anticipate and prioritize target sector infrastructure needs.

EDT interacts regularly with our target sector businesses, industry leaders, and statewide industry associations and has an in-depth understanding of their infrastructure needs and priorities, including core infrastructure such as roads and waterways as well as cutting-edge industry facilities and assets. EDT will develop appropriate reporting mechanisms to regularly communicate industry needs and priorities with applicable state and regional planning agencies to help identify trends and address both current and future sector infrastructure needs.

Selection of Connected INFRASTRUCTURE Plans and Initiatives

Various organizations across Texas are working to enhance the resiliency, efficiency, and connectivity of our infrastructure. Below is a list of selected plans and initiatives led by state agencies and other stakeholders that are aimed at promoting infrastructure development and maintenance throughout the state:

- **TxDOT – Unified Transportation Program:** This 10-year plan lays out 12 funding categories for infrastructure expansion and establishes guidelines on how TxDOT will work with elected officials, planning organizations, and the public to identify and distribute funds to the most impactful construction projects.
- **Texas Broadband Development Office – Texas Broadband Plan 2022:** The Texas Broadband Plan coordinates efforts across public and private infrastructure stakeholders to assist unserved and underserved communities in accessing broadband.
- **Texas Broadband Development Office – Broadband Infrastructure Fund:** Passed by a statewide vote in 2023, this \$1.5 billion fund is intended to support the execution of the Broadband Plan and match federally provided funds for broadband infrastructure.
- **Public Utility Commission of Texas – Texas Energy Fund:** The Texas Energy Fund provides grants and loans to energy generation facility projects including construction, maintenance, modernization, and operation projects.
- **Texas Water Development Board – Texas Water Fund:** The \$1 billion Texas Water Fund was passed by statewide vote in 2023 and is allocated to water-related funds designed to identify and support projects related to maintaining and expanding Texas' water supply.
- **Texas Dept. of Agriculture – Downtown Revitalization and Main Streets Program:** The Downtown Revitalization and Main Streets Program, aimed at developing historic downtown rural areas, provides grants to revitalize and improve public infrastructure and boost the economy in rural areas.

CONCLUSION

*“Innovation has no endpoint, but it always begins with an idea. And more of those ideas start here. Texas is where today’s products are made and tomorrow’s technologies are brought to life.” – **Governor Greg Abbott***

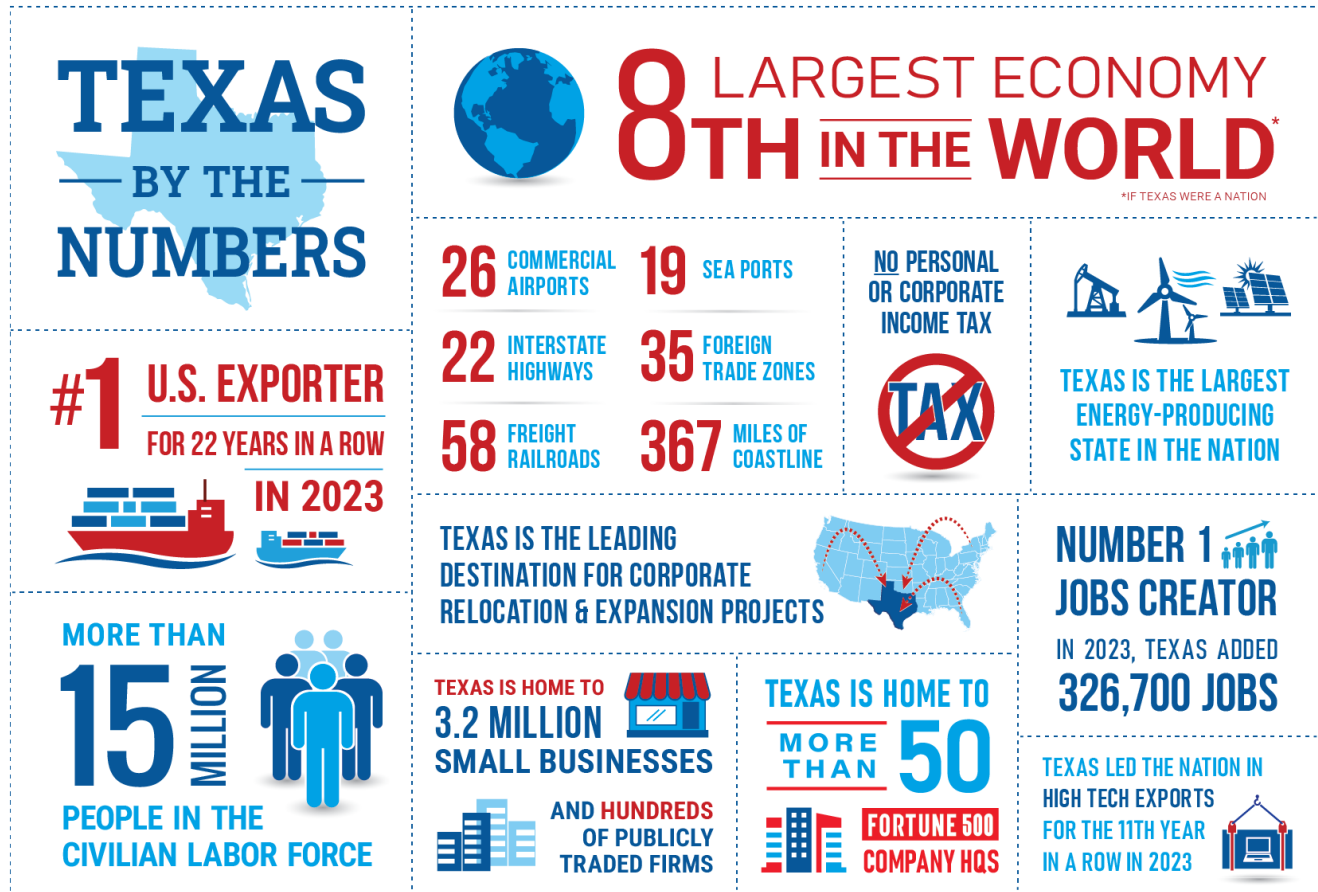
We are known for our pioneering spirit. Over the last two centuries, Texans have built on traditions, resources, and new ideas to form the great state we know and love today. We have long led the nation in industries such as energy production and have powered the world with energy produced from and on our soil. Over recent decades, we have led in space exploration and forged the way with critical advances in science, technology, engineering, and medicine.

The legacy lives on. Texas is now pioneering the future in internationally significant industries, leading the nation in job creation and economic growth, and emerging as a key player in the global economy. While it’s clear we have enjoyed great economic success in recent years and are poised to experience further growth in the years to come, it will take all of us coming together to realize our full potential. We are excited about the future and ready to do our part to write the next chapter of the Texas dream.

The future starts with us. We are blessed to live in a state of infinite possibilities where the whole is greater than the sum of our parts. We hope you will join us in our mission to cement Texas’ position as a global economic powerhouse and strengthen our rich culture, diverse workforce, and entrepreneurial spirit to ensure Texas is the premier place to live, work, and visit. By capitalizing on emerging opportunities and collaborating on innovative solutions, **we can turn bold ideas into reality and build an even bigger, better Texas for decades to come.**



REFERENCE: TEXAS BY THE NUMBERS



As of July 2024

For the latest Top Texas Touts and more, visit: gov.texas.gov/business/page/reports-and-publications

The Texas Economic Development & Tourism Office (EDT), within the Office of the Governor, is tasked with marketing and promoting the state of Texas across the nation and around the world as the premier business location and travel destination.

EDT works closely with our communities and local, regional, and statewide economic development and tourism organizations as well as partnering state agencies to ensure Texas remains the best place to live, work, and visit. The office includes seven divisions, five EDT Regional Offices, the State of Texas Mexico Office, and the State of Texas Taiwan Office.

- Business & Community Development
- Economic Development Finance
- Texas CHIPS Office
- Texas Film Commission
- Texas Music Office
- Texas Workforce Investment Council
- Travel Texas

For more information, visit: gov.texas.gov/business



ACKNOWLEDGMENTS

“Bigger. Better. Texas.” reflects the contributions of more than 100 Texans who shared their unique experiences and visions for Texas’ economic future. Throughout our plan development process, we engaged with a diverse group of stakeholders to ensure the plan incorporates the perspectives of Texas’ regions, target sectors, and the organizations that support economic development efforts across the state.

The Texas Economic Development & Tourism Office gratefully acknowledges the contributions provided by the following individuals and organizations.

Advisory Board Members

An Advisory Board of state agency leaders and members of the business, industry, economic development, and workforce development organizations was convened to provide input on economic challenges and opportunities facing the state and develop strategies on ways to collaborate to catalyze growth.

- **Texas Association of Business:**
Glenn Hamer—President and CEO
- **Texas Association of Manufacturers:**
Tony Bennett—President and CEO
- **Texas Association of Regional Councils:**
Ginny Lewis Ford—Executive Director
- **Texas Commission on Environmental Quality:**
Kelly Keel—Executive Director
- **Texas Comptroller of Public Accounts:**
Korry Castillo—Associate Deputy Comptroller
- **Texas Department of Agriculture:**
Roxana Newton—Director, Rural Economic Development
- **Texas Department of Transportation:**
Marc Williams—Executive Director
Mary Anne Griss—Chief of Staff
Darran Anderson—Director of Strategy and Innovation
- **Texas Economic Development Corporation:**
Aaron Demerson—President and CEO
Michael Chrobak—Former Interim President and CEO
- **Texas Economic Development Council:**
Carlton Schwab—President and CEO
- **Texas Education Agency:**
Mike Morath—Commissioner
Mike Meyer—Deputy Commissioner
- **Texas Healthcare & Bioscience Institute:**
Victoria Ford—President and CEO
- **Texas Higher Education Coordinating Board:**
Harrison Keller—Commissioner
Lee Rector—Associate Commissioner
- **Texas Oil & Gas Association:**
Todd Staples—President
Shannon Rusing—Chief of Staff
- **Texas Travel Alliance:**
Erika Boyd—President and CEO
- **Texas Workforce Commission:**
Ed Serna—Executive Director
- **Office of The Governor:**
Adriana Cruz—Executive Director, Texas Economic Development & Tourism Office
Terry Zrubek—Deputy Executive Director, Texas Economic Development & Tourism Office

Steering Committee Members

A Steering Committee comprised of the following members of the Texas Economic Development & Tourism Office leadership met regularly during the plan development process to provide strategic direction and ensure the plan aligns with the priorities of the state.

- **Adriana Cruz**—Executive Director, EDT
- **Terry Zrubek**—Deputy Executive Director, EDT

- **Brendon Anthony**—Director, Texas Music Office (Former), EDT
- **Dr. Stephen Davis**—Research and Economic Analysis Manager, EDT, Project Leader
- **Tim Fennell**—Director, Travel Texas, EDT
- **Kaki Leyens**—Executive Director, Texas Workforce Investment Council, EDT
- **Larry McManus**—Director of Business and Community Development, EDT
- **Anna Marie Thompson**—Senior Advisor, Communications and Economic Development, EDT
- **Stephanie Whallon**—Director, Texas Film Commission, EDT
- **Blake Calvert**—Budget and Policy Advisor, Office of the Governor

Working Group Members

A Working Group comprised of the following staff of the Texas Economic Development & Tourism Office met weekly during the plan development process to discuss findings, review and iterate on plan elements, and plan for and debrief on stakeholder engagement efforts.

- **Jarvis Brewer**—Small Business Advocate, EDT
- **Gene Cervenka**—Interim Director, Economic Development Finance, EDT
- **Dr. Stephen Davis**—Research and Economic Analysis Manager, EDT
- **Annie Dennis**—Deputy Director, Business and Community Development, EDT
- **Larry McManus**—Director, Business and Community Development, EDT
- **Shirley Temple**—International Business and Existing Industry Manager, EDT
- **Lauren Vay**—Marketing and Communications Manager, EDT

Focus Group and Interview Participants

Texas is a big state, with more than 1,000 economic development organizations, chambers of commerce, and municipalities as well as more than 3 million businesses of all sizes. To gather additional detailed input on economic development priorities, opportunities, and challenges, we held a series of focus groups and interviews with stakeholders representing a broad cross section of organizations located across Texas: urban and rural communities; chambers of commerce and economic development corporations; regional organizations; higher education institutions; industry representatives; large companies; and innovators and entrepreneurs. We also offered an opportunity for any organization interested in providing input to do so.

- A Novel Idea, LLC
- Alcon DTS
- Amazon
- American Electric Power
- BCL of Texas
- Big Spring Economic Development Corporation
- Boingo Wireless, Inc.
- Capital Area Council of Governments
- Capital Factory
- CenterPoint Energy
- Corpus Christi Regional Economic Development Corporation
- Dallas – Fort Worth Airport
- Dallas Regional Chamber
- Deep East Texas Council of Governments
- Dell Technologies
- enCore Energy
- Equinix, Inc.
- Firefly Aerospace
- Governor’s Aerospace and Aviation Advisory Committee

- Governor's Small Business Assistance Advisory Task Force
- Greater Arlington Chamber of Commerce
- Greater El Paso Hispanic Chamber of Commerce
- Greater SATX
- Greater Waco Chamber of Commerce
- HBO / Warner Media
- Houston-Galveston Area Council
- Jasper Economic Development Corporation
- Kessler Presents
- Levelland Economic Development Corporation
- Lift Fund
- Lubbock Economic Development Alliance
- MD7
- Noveon Magnetics
- Oncor
- Opportunity Austin
- PeopleFund
- Rice University
- Rio Grande Council of Governments
- Samsung
- South Texas Development Council
- Texas A&M University
- Texas Association of Community Colleges
- Texas Beef Council
- Texas Forest Country Partnership
- Texas Higher Education Coordinating Board
- Texas Hotel & Lodging Association
- Texas Manufacturing Assistance Center
- Texas Medical Center
- Texas Moving Picture Association
- Texas Ports Association
- Texas Railroad Association
- Texas Rural Funders
- Texas State Technical College
- Texas Transit Association
- The University of Texas at Austin
- The University of Texas at El Paso
- The University of Texas at San Antonio
- The University of Texas System
- Toyota
- Troublemaker Studios
- US Small Business Administration
- USA BioEnergy

This plan was developed in collaboration with Guidehouse Inc. with support from Cambridge Econometrics and CD&P with grant funding provided by the U.S. Economic Development Administration (EDA).



Music Friendly Texas Community Certification, College Station

APPENDIX A: REGIONAL PROFILES

About the Regional Profiles

To approach economic development in Texas with a one-size-fits-all strategy would overlook what makes the Lone Star State special: the diversity of our land, people, natural resources, and businesses. Each region in Texas offers unique strengths and opportunities. Our community-driven approach to economic development is fundamental to our ability to remain agile and develop strategic resources that best support hardworking Texans and innovative Texas businesses. By highlighting the advantages within each region, the regional profiles can serve as assets to communities developing their own strategies.

Boots-on-the-ground regional and economic development leaders are best positioned to understand their regions' needs and which actions will create the most impact. The regional profiles can serve as a resource for these leaders as they use the data and key insights included in each profile to further understand their region's economic landscape and trends. Businesses can also leverage the regional profiles to understand regional characteristics as they consider where to establish and grow their businesses.

How to Read the Regional Profiles

The profiles consist of the following pages for each region, which are sampled in the figures below:

- Regional Profile Cover Page:** The first page begins with a definition and overview of the region and highlights key assets, trends, and fast facts, including statistics on the region's population, industries, exports, and workforce.
- Regional Profile Detail Page:** The second page provides detailed data and insights regarding the region's top industry clusters, fastest growing industry clusters, top occupations, and fastest-growing occupations. A summary of key takeaways, which outlines regional strengths and opportunities, is also included.

Sample Regional Profile Cover Page

| Magnitude | Population | Industry | Exports | Workforce |
|-----------|---|---|---|---|
| | 3.8M Population (2021) | \$274B Contribution to GDP (2021) | \$27B Foreign Exports (2021) | 2.4M Total Employment (2021) |
| Share | 13% Share of Texas Population (2021) | 13% Share of Texas GDP (2021) | 11% Share of Texas Foreign Exports (2021) | 14% Share of Texas Employment (2021) |
| Growth | 24% Total Population Growth (2011-21) | 57% Total GDP Growth (2011-21) | 37% Total Foreign Export Growth (2011-21) | 30% Total Employment Growth (2011-21) |

Sample Regional Profile Detail Page

| Top Industry Clusters by LQ (2021) | LQ (2021) | Emp. (2021) | GDP (2021) | Top Industry Clusters by Emp. Growth (2015-21) | Emp. Growth (2015-21) | Emp. (2021) | GDP (2021) |
|--|-----------|-------------|------------|--|-----------------------|-------------|------------|
| Computers and Electronics Manufacturing | 2.19 | 26,170 | \$6,663M | Information Technology and Artificial Intelligence | 110% | 131,200 | \$23,450M |
| Information Technology and Analytical Instruments | 1.94 | 35,950 | \$12,362M | Production Technology and Heavy Machinery | 76% | 7,860 | \$1,538M |
| Information Technology and Artificial Intelligence | 1.86 | 131,260 | \$23,450M | AgTech | 74% | 175,740 | \$27,208M |
| Nonmetal Mining | 1.70 | 3,210 | \$1,287M | Biopharmaceuticals | 73% | 2,930 | \$1,321M |
| AgTech | 1.45 | 175,750 | \$27,208M | Medical Devices | 73% | 2,680 | \$345M |

| Top Occupations by LQ (2021) | LQ (2021) | Emp. (2021) | Top Occupations by Emp. Growth (2015-21) | Emp. Growth (2015-21) | Emp. (2021) |
|--|-----------|-------------|--|-----------------------|-------------|
| Computer Occupations | 1.49 | 82,840 | Material Moving Workers | 61% | 44,210 |
| Postsecondary Teachers | 1.36 | 20,170 | Top Executives | 43% | 30,630 |
| Other Educational Instruction and Library Occupations | 1.18 | 22,430 | Business Operations Specialists | 39% | 61,910 |
| Software, Engineering Technicians, and Mapping Technicians | 1.17 | 9,020 | Advertising, Marketing, Promotions, Public Relations, and Sales Managers | 38% | 6,370 |
| Other Teachers and Instructors | 1.16 | 13,610 | Operations Specialties Managers | 32% | 21,640 |

| Regional Opportunities | Strengths | Opportunities |
|--|---|---------------|
| Growing Economy Central Texas has experienced rapid growth in recent years, with population growing by 24% from 2011-21 and regional GDP growing by 57% over the same period. | The region can continue to expand and diversify its industrial base by targeting emerging industries like biopharmaceuticals and medical devices in addition to building on existing strengths in computers, electronics, and IT. | |
| Tech-enabled Central Texas has notable strengths in tech-enabled industries, including computers and electronics, information technology, analytical instruments, and artificial intelligence. | As tech continues to grow as an enabler of global economies, Central Texas has an opportunity to cement itself as a leader in digital innovation across a variety of industries. | |
| Computing Power Central Texas workforce has a unique concentration in computer occupations and electronic equipment mechanics, which supports the growth of high-tech industries. | Central Texas can leverage its robust network of educational institutions to both strengthen the pipeline of talent supporting high-tech industries and build out skillsets that enable economic diversification. | |

Key Elements of Regional Profiles

The regional profiles contain the following key elements, which are highlighted and described next to the sample pages below:

Sample Regional Profile Cover Page

Central Texas Counties

| | | | | | | | |
|----------|---------|------------|------------|------------|-----------|-----------|-----------|
| Bastrop | Bell | Blanco | Bosque | Brazos | Burleson | Burnet | Caldwell |
| Concho | Coryell | Falls | Fayette | Froststone | Gillespie | Grimes | Hamilton |
| Hays | Hill | Kimble | Lampasas | Lee | Leon | Limestone | Llano |
| Madison | Mason | McCulloch | McLennan | Menard | Milam | Mills | Robertson |
| San Saba | Travis | Washington | Williamson | | | | |

About the Central Texas Region

Nestled among the rolling hills of the Texas Hill Country, the Central Texas region is home to our State Capitol, the snaking Colorado River and its tributaries, miles of rich ranchland, and communities of all sizes ready to welcome visitors with an award-winning plate of Texas brisket. The region spans nearly 32,000 square miles and is intersected by the I-35 corridor from San Marcos through Austin and up to Waco.

Given its central location, bustling metropolitan areas, and network of highways, the Central Texas region is home to a variety of industries. In addition to being the seat of state government, the capital area has experienced a tech boom, attracting enough tech businesses to earn the nickname "Silicon Hills." Fort Cavazos, the largest military base in Texas, and Camp Mabry are also strategically located here, making the region a growing hub for the defense industry. The region is served by some of Texas' most prestigious higher education institutions, including The University of Texas at Austin, Texas A&M University, Texas State University, and Baylor University, among others.

Central Texas is also home to a wealth of natural landmarks and a rich cultural heritage. From the expansive views provided by Enchanted Rock to the cool waters of the Frio River, the Texas Wine Trails to the town of West and its famous icehouses, the region has no shortage of parks and attractions making it one of the most popular tourist destinations in the state.

Central Texas Fast Facts

| | Population | Industry | Exports | Workforce |
|-----------|---|---|---|---|
| Magnitude | 3.8M Population (2021) | \$274B Contribution to GDP (2021) | \$27B Foreign Exports (2021) | 2.4M Total Employment (2021) |
| Share | 13% Share of Texas Population (2021) | 13% Share of Texas GDP (2021) | 11% Share of Texas Foreign Exports (2021) | 14% Share of Texas Employment (2021) |
| Growth | 24% Total Population Growth (2011-21) | 57% Total GDP Growth (2011-21) | 37% Total Foreign Export Growth (2011-21) | 30% Total Employment Growth (2011-21) |

Office of the Texas Governor – Statewide Economic Development Plan

- **Region Definition and Description:** The first two panels of the cover page provide a list of all the counties included in the definition of the region as well as a narrative description of the region's geography, key assets, and noteworthy characteristics.

- **Region Fast Facts:** The third panel of the cover page summarizes fast facts for the region, including statistics about the magnitude, relative size, and growth of the region's total population, GDP contribution, foreign exports, and workforce.

Sample Regional Profile Detail Page

Business and Industry

| Top Industry Clusters by LQ (2021) | LQ (2021) | Emp. (2021) | GDP (2021) | Top Industry Clusters by Emp. Growth (2018-21) | Emp. Growth (2018-21) | Emp. (2021) | GDP (2021) |
|--|-----------|-------------|------------|--|-----------------------|-------------|------------|
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Workforce

| Top Occupations by LQ (2021) | LQ (2021) | Emp. (2021) | Top Occupations by Emp. Growth (2018-21) | Emp. Growth (2018-21) | Emp. (2021) |
|--|-----------|-------------|--|-----------------------|-------------|
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Regional Opportunities

| Strengths | Opportunities |
|--|---|
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| Computing Power Central Texas' workforce has a unique concentration in computer occupations and electronic equipment mechanics, which supports the growth of high-tech industries. | Central Texas can leverage its robust network of educational institutions to both strengthen the pipeline of talent supporting high-tech industries and build out skillsets that enable economic diversification. |

Office of the Texas Governor – Statewide Economic Development Plan

- **Region Business and Industry Analysis:** The first panel summarizes top industry clusters in the region, first by the relative employment concentration, measured by Location Quotient (LQ), and then by employment growth.

- **Region Workforce Analysis:** The second panel summarizes top occupations in the region, first by the relative employment concentration, measured by LQ, and then by employment growth.

- **Regional Opportunities:** The last panel on the page provides key takeaways for the region, including high-level strengths and opportunities.



Central Texas



Central Texas Counties

| | | | | | | | |
|----------|---------|------------|------------|-----------|-----------|-----------|-----------|
| Bastrop | Bell | Blanco | Bosque | Brazos | Burleson | Burnet | Caldwell |
| Concho | Coryell | Falls | Fayette | Freestone | Gillespie | Grimes | Hamilton |
| Hays | Hill | Kimble | Lampasas | Lee | Leon | Limestone | Llano |
| Madison | Mason | McCulloch | McLennan | Menard | Milam | Mills | Robertson |
| San Saba | Travis | Washington | Williamson | | | | |



About the Central Texas Region

Nestled among the rolling hills of the Texas Hill Country, the Central Texas region is home to our State Capitol, the snaking Colorado River and its tributaries, miles of rich ranchland, and communities of all sizes ready to welcome visitors with an award-winning plate of Texas barbecue. The region spans nearly 32,000 square miles and is intersected by the I-35 corridor from San Marcos through Austin and up to Waco.

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Central Texas is also home to a wealth of natural landmarks and a rich cultural heritage. From the expansive views provided by Enchanted Rock to the cool waters of the Frio River, and from the Texas Wine Trails to the town of West and its famous kolaches, this region has no shortage of parks and attractions, making it one of the most popular tourist destinations in Texas.



Central Texas Fast Facts

| | Population | Industry | Exports | Workforce |
|-----------|--|--|--|--|
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| Growth | 24% <i>Total Population Growth (2011–21)</i> | 57% <i>Total GDP Growth (2011–21)</i> | 37% <i>Total Foreign Export Growth (2011–21)</i> | 30% <i>Total Employment Growth (2011–21)</i> |

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.

Data Sources: IMPLAN, Data Library, Texas, (2011–21); Guidehouse Analysis.



Central Texas



Business and Industry

| Top Industry Clusters by LQ (2021) | LQ (2021) | Emp. (2021) | GDP (2021) | Top Industry Clusters by Emp. Growth (2015-21) | Emp. Growth (2015-21) | Emp. (2021) | GDP (2021) |
|--|-----------|-------------|------------|--|-----------------------|-------------|------------|
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| Information Technology and Analytical Instruments | 1.94 | 35,950 | \$12,352M | Production Technology and Heavy Machinery | 76% | 7,880 | \$1,538M |
| Information Technology and Artificial Intelligence | 1.86 | 131,260 | \$23,450M | AgTech | 74% | 175,740 | \$27,208M |
| Nonmetal Mining | 1.70 | 3,210 | \$1,287M | Biopharmaceuticals | 73% | 2,930 | \$1,321M |
| AgTech | 1.45 | 175,750 | \$27,208M | Medical Devices | 73% | 2,680 | \$345M |

Note: Industry clusters consisting of less than 0.1% of total regional employment are not shown in tables.



Workforce

| Top Occupations by LQ (2021) | LQ (2021) | Emp. (2021) | Top Occupations by Emp. Growth (2018-21) | Emp. Growth (2018-21) | Emp. (2021) |
|--|-----------|-------------|--|-----------------------|-------------|
| Computer Occupations | 1.49 | 82,840 | Material Moving Workers | 61% | 44,210 |
| Postsecondary Teachers | 1.36 | 20,170 | Top Executives | 43% | 30,630 |
| Other Educational Instruction and Library Occupations | 1.18 | 22,430 | Business Operations Specialists | 39% | 61,910 |
| Drafters, Engineering Technicians, and Mapping Technicians | 1.17 | 9,020 | Advertising, Marketing, Promotions, Public Relations, and Sales Managers | 38% | 8,370 |
| Other Teachers and Instructors | 1.16 | 13,610 | Operations Specialties Managers | 32% | 21,640 |

Note: Occupations that predominately serve the local community and occupations consisting of less than 0.5% of total regional employment not shown in tables.



Regional Opportunities

Strengths

Growing Economy

Central Texas has experienced rapid growth in recent years, with population growing by 24% from 2011–21 and regional GDP growing by 57% over the same period.

Tech-Enabled

Central Texas has notable strengths in tech-enabled industries, including computers and electronics, information technology, analytical instruments, semiconductors, and artificial intelligence.

Computing Power

Central Texas' workforce has a unique concentration in computer occupations and electronic equipment mechanics, which supports the growth of high-tech industries.

Opportunities

The region can continue to expand and diversify its industrial base by targeting emerging industries like biopharmaceuticals and medical devices in addition to building on existing strengths in computers, electronics, and IT.

As tech continues to grow as an enabler of global economies, Central Texas has an opportunity to cement itself as a leader in digital innovation across a variety of industries.

Central Texas can leverage its robust network of educational institutions to both strengthen the pipeline of talent supporting high-tech industries and build out skillsets that enable economic diversification.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.

Data Sources: IMPLAN, Data Library, Texas, (2011-21); Guidehouse Analysis.



Gulf Coast



Gulf Coast Counties

Austin Brazoria Chambers Colorado Fort Bend Galveston Harris
 Liberty Matagorda Montgomery Walker Waller Wharton



About the Gulf Coast Region

Stretching along the coast of the Gulf of Mexico and reaching up towards Southeast Texas, the Gulf Coast region covers about 12,300 square miles and encompasses the Greater Houston area. The region includes 13 counties, including Harris County, the third-most populous county in the U.S. The region's access to the coast makes it not only a popular tourist destination, but also a major trade hub with multiple ports.

The Gulf Coast region is served by many higher education institutions, including the University of Houston, Rice University, Prairie View A&M University, and Texas Southern University, among others. The region is also home to multiple industry hubs, including the Texas Medical Center, a national leader in medical research and innovation, and the Johnson Space Center, which has operated as one of NASA's primary centers for space flight and research since 1961.

As one of the largest regions by population, the Gulf Coast is home to a workforce as diverse as it is vast. The region is poised to accommodate growth across a wide array of sectors through a highly educated talent pool and a robust network of skilled trade workers, including construction workers, drafters, engineering technicians, and the other talented individuals who build the infrastructure needed to accommodate economic expansion.



Gulf Coast Fast Facts

| | Population | Industry | Exports | Workforce |
|-----------|--|--|--|--|
| Magnitude | 7.4M <i>Population (2021)</i> | \$575B <i>Contribution to GDP (2021)</i> | \$75B <i>Foreign Exports (2021)</i> | 4.4M <i>Total Employment (2021)</i> |
| Share | 25% <i>Share of Texas Population (2021)</i> | 28% <i>Share of Texas GDP (2021)</i> | 31% <i>Share of Texas Foreign Exports (2021)</i> | 25% <i>Share of Texas Employment (2021)</i> |
| Growth | 19% <i>Total Population Growth (2011–21)</i> | 9% <i>Total GDP Growth (2011–21)</i> | 10% <i>Total Foreign Export Growth (2011–21)</i> | 20% <i>Total Employment Growth (2011–21)</i> |

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.
 Data Sources: IMPLAN, Data Library, Texas, (2011-21); Guidehouse Analysis.

REGIONAL Detail



Gulf Coast



Business and Industry

| Top Industry Clusters by LQ (2021) | LQ (2021) | Emp. (2021) | GDP (2021) | Top Industry Clusters by Emp. Growth (2015-21) | Emp. Growth (2015-21) | Emp. (2021) | GDP (2021) |
|---|-----------|-------------|------------|--|-----------------------|-------------|------------|
| Industrial Chemical Products | 6.18 | 23,680 | \$20,313M | Biopharmaceuticals | 90% | 3,050 | \$2,535M |
| Petroleum Refining | 5.17 | 8,190 | \$15,318M | Medical Devices | 49% | 2,730 | \$394M |
| Oil and Gas Production and Transportation | 3.10 | 199,040 | \$79,559M | Information Technology and Artificial Intelligence | 38% | 84,020 | \$10,951M |
| Chemical and Plastics Manufacturing | 1.89 | 44,860 | \$25,641M | AgTech | 36% | 140,280 | \$17,897M |
| Metal Mining | 1.87 | 3,770 | \$5,045M | Biotechnology | 31% | 67,940 | \$13,947M |

Note: Industry clusters consisting of less than 0.1% of total regional employment are not shown in tables.



Workforce

| Top Occupations by LQ (2021) | LQ (2021) | Emp. (2021) | Top Occupations by Emp. Growth (2018-21) | Emp. Growth (2018-21) | Emp. (2021) |
|--|-----------|-------------|--|-----------------------|-------------|
| Extraction Workers | 4.26 | 16,870 | Material Moving Workers | 41% | 164,220 |
| Supervisors of Construction and Extraction Workers | 1.46 | 21,870 | Top Executives | 31% | 80,520 |
| Drafters, Engineering Technicians, and Mapping Technicians | 1.34 | 18,820 | Business Operations Specialists | 27% | 133,880 |
| Construction Trades Workers | 1.29 | 129,470 | Advertising, Marketing, Promotions, Public Relations, and Sales Managers | 19% | 17,910 |
| Preschool, Elementary, Middle, Secondary, and Special Education Teachers | 1.25 | 104,380 | Operations Specialties Managers | 14% | 45,800 |

Note: Occupations that predominately serve the local community and occupations consisting of less than 0.5% of total regional employment not shown in tables.



Regional Opportunities

Strengths

Export Driven

The Gulf Coast accounts for 31% of Texas' total foreign exports and 28% of the state's total GDP, indicating that the region has a comparative strength in exporting industries that grow the economy.

Economic Anchors

The Gulf Coast has notable strength in oil and gas and associated industries, including petroleum refining, chemicals, and plastics, which serve as an anchor for the regional economy.

Foundation for Growth

Occupations that support infrastructure and construction, including drafters, engineering and mapping technicians, and construction workers are highly concentrated in the Gulf Coast.

Opportunities

With strengths in foreign exports and access to international trade routes through the region's ports, the Gulf Coast can further cement its status as a trade hub by targeting growth in additional export-driven industries.

In addition to building on economic strengths in oil and gas, the Gulf Coast can diversify by spurring growth in growing industries such as life sciences clusters, including biopharmaceuticals, medical devices, and biotechnology.

The regional workforce is well-positioned to facilitate resilient economic growth through infrastructure expansion, including building, repairing, and maintaining infrastructure within the region and beyond.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.

Data Sources: IMPLAN, Data Library, Texas, (2011-21); Guidehouse Analysis.



High Plains



High Plains Counties

| | | | | | | | |
|-----------|--------|---------|------------|---------|-----------|---------|---------------|
| Armstrong | Bailey | Briscoe | Carson | Castro | Childress | Cochran | Collingsworth |
| Cottle | Crosby | Dallam | Deaf Smith | Dickens | Donley | Floyd | Garza |
| Gray | Hale | Hall | Hansford | Hartley | Hemphill | Hockley | Hutchinson |
| Kent | King | Lamb | Lipscomb | Lubbock | Lynn | Moore | Motley |
| Ochiltree | Oldham | Parmer | Potter | Randall | Roberts | Sherman | Stonewall |
| Swisher | Terry | Wheeler | Yoakum | | | | |



About the High Plains Region

Linking New Mexico in the west and Oklahoma in the east, the High Plains region spans roughly 42,100 square miles and covers the Texas Panhandle, which includes the Lubbock and Amarillo metropolitan areas. The High Plains region lays claim to some of the state's most striking natural attractions, including Palo Duro Canyon in the south and the scenic Prairie Dog Town Fork Red River, which cuts through the central portion of the panhandle.

The High Plains region is home to multiple higher education institutions, including Texas Tech University and West Texas A&M University. The region boasts a notable pioneering spirit, reflected in innovation and entrepreneurship programs such as the TTU Innovation Hub and the WT Enterprise Center. The region also sources livestock and other agricultural products for not only Texas, but the entire U.S. A growing transportation and material moving workforce supports the region's many exports. The windswept plains of the region also provide a valuable source of energy for the state — the High Plains has seen the construction of over 2,000 wind turbines in the past 25 years, contributing to Texas' claim to more wind energy production than any other state.

Areas in the High Plains region are undergoing efforts to diversify both the economy and workforce. Bolstering infrastructure is also a focus in the region, which relies on the Ogallala Aquifer for its water.



High Plains Fast Facts

| | Population | Industry | Exports | Workforce |
|------------------|---|---|--|---|
| Magnitude | 0.9M <i>Population (2021)</i> | \$50B <i>Contribution to GDP (2021)</i> | \$8B <i>Foreign Exports (2021)</i> | 0.5M <i>Total Employment (2021)</i> |
| Share | 3% <i>Share of Texas Population (2021)</i> | 2% <i>Share of Texas GDP (2021)</i> | 3% <i>Share of Texas Foreign Exports (2021)</i> | 3% <i>Share of Texas Employment (2021)</i> |
| Growth | 2% <i>Total Population Growth (2011–21)</i> | 7% <i>Total GDP Growth (2011–21)</i> | 14% <i>Total Foreign Export Growth (2011–21)</i> | 6% <i>Total Employment Growth (2011–21)</i> |

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.
 Data Sources: IMPLAN, Data Library, Texas, (2011–21); Guidehouse Analysis.



High Plains



Business and Industry

| Top Industry Clusters by LQ (2021) | LQ (2021) | Emp. (2021) | GDP (2021) | Top Industry Clusters by Emp. Growth (2015-21) | Emp. Growth (2015-21) | Emp. (2021) | GDP (2021) |
|------------------------------------|-----------|-------------|------------|--|-----------------------|-------------|------------|
| Livestock Processing | 9.90 | 12,760 | \$1,048M | Trailers, Motor Homes, and Appliances | 106% | 360 | \$32M |
| Footwear | 6.99 | 330 | \$11M | Information Technology and Artificial Intelligence | 84% | 5,090 | \$453M |
| Agricultural Inputs and Services | 5.27 | 8,730 | \$423M | Furniture | 76% | 500 | \$29M |
| Forestry | 4.61 | 8,820 | \$392M | Lighting and Electrical Equipment | 59% | 310 | \$40M |
| Metal Mining | 3.80 | 780 | \$311M | Environmental Services | 36% | 1,190 | \$162M |

Note: Industry clusters consisting of less than 0.1% of total regional employment are not shown in tables.



Workforce

| Top Occupations by LQ (2021) | LQ (2021) | Emp. (2021) | Top Occupations by Emp. Growth (2018-21) | Emp. Growth (2018-21) | Emp. (2021) |
|--|-----------|-------------|---|-----------------------|-------------|
| Agricultural Workers | 4.92 | 13,980 | Material Moving Workers | 43% | 20,800 |
| Extraction Workers | 4.54 | 2,200 | Top Executives | 32% | 8,370 |
| Food Processing Workers | 2.79 | 6,380 | Business Operations Specialists | 22% | 12,650 |
| Preschool, Elementary, Middle, Secondary, and Special Education Teachers | 1.42 | 14,480 | Other Educational Instruction and Library Occupations | 14% | 5,840 |
| Other Educational Instruction and Library Occupations | 1.39 | 5,840 | Other Management Occupations | 12% | 7,470 |

Note: Occupations that predominately serve the local community and occupations consisting of less than 0.5% of total regional employment not shown in tables.



Regional Opportunities

Strengths

Productivity Growth

The High Plains region GDP and employment growth (7% and 6%) outpaced population growth (2%) from 2011 to 2021, indicating an increase in labor force participation and productivity.

Natural Resources

The High Plains regional economy has strength in industries that draw on natural resources, including livestock processing, agriculture, forestry, and mining.

Tailored Workforce

The regional workforce has strengths in agriculture and food processing, resource extraction, and transportation, which support industries that fuel both the statewide and national economy.

Opportunities

The High Plains region can continue expanding its contribution to statewide GDP by targeting growth in higher value-add industries, such as advanced manufacturing.

The region can continue to grow its strength in livestock and agriculture, while diversifying its economic base by capitalizing on growth areas such as manufacturing and IT-related industries.

The High Plains region is also experiencing growth in management, operations, and logistics occupations, indicating that this region is well-positioned to support the growth of business operations for a variety of industries.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.

Data Sources: IMPLAN, Data Library, Texas, (2011-21); Guidehouse Analysis.



Metroplex



Metroplex Counties

| | | | | | |
|---------|------------|--------|----------|-----------|---------|
| Collin | Cooke | Dallas | Denton | Ellis | Erath |
| Fannin | Grayson | Hood | Hunt | Johnson | Kaufman |
| Navarro | Palo Pinto | Parker | Rockwall | Somervell | Tarrant |
| Wise | | | | | |



About the Metroplex Region

Reaching from the Oklahoma border in the north to the Brazos River in the south, the Metroplex region covers approximately 15,100 square miles and encompasses the Dallas–Fort Worth–Arlington and Sherman–Denison metropolitan areas. Home to over eight million Texans, the Metroplex is one of the most populous and diverse regions in the state. It also lays claim to world-famous tourist attractions, including the iconic Reunion Tower, the Fort Worth Stockyards, and AT&T Stadium — home of the Dallas Cowboys.

The Metroplex region has a diverse economy, with many notable strengths. The presence of the Dallas Federal Reserve within the region has fostered the growth of adjacent industries, including banking, finance, and insurance. The region also has a thriving entrepreneurial environment and is home to many venture capital firms, making it a magnet for entrepreneurs and founders.

The Metroplex region boasts a strong business and finance operations workforce, which supports the growth and sustainability of its financial and corporate services sector. It is served by many higher education institutions that attract students from across the state and the nation, including The University of Texas at Dallas, Texas Christian University, and Southern Methodist University.



Metroplex Fast Facts

| | Population | Industry | Exports | Workforce |
|------------------|--|--|--|--|
| Magnitude | 8.2M <i>Population (2021)</i> | \$665B <i>Contribution to GDP (2021)</i> | \$71B <i>Foreign Exports (2021)</i> | 5.4M <i>Total Employment (2021)</i> |
| Share | 28% <i>Share of Texas Population (2021)</i> | 33% <i>Share of Texas GDP (2021)</i> | 29% <i>Share of Texas Foreign Exports (2021)</i> | 31% <i>Share of Texas Employment (2021)</i> |
| Growth | 19% <i>Total Population Growth (2011–21)</i> | 42% <i>Total GDP Growth (2011–21)</i> | 28% <i>Total Foreign Export Growth (2011–21)</i> | 26% <i>Total Employment Growth (2011–21)</i> |

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.
 Data Sources: IMPLAN, Data Library, Texas, (2011–21); Guidehouse Analysis.



Metroplex



Business and Industry

| Top Industry Clusters by LQ (2021) | LQ (2021) | Emp. (2021) | GDP (2021) | Top Industry Clusters by Emp. Growth (2015-21) | Emp. Growth (2015-21) | Emp. (2021) | GDP (2021) |
|--|-----------|-------------|------------|--|-----------------------|-------------|------------|
| Aerospace Vehicles, Aircraft, and Defense | 2.20 | 37,320 | \$12,244M | Information Technology and Artificial Intelligence | 71% | 218,570 | \$30,770M |
| Financial Services | 1.42 | 359,010 | \$42,323M | AgTech | 54% | 278,730 | \$36,582M |
| Nonmetal Mining | 1.37 | 5,940 | \$2,422M | Environmental Services | 47% | 12,190 | \$1,486M |
| Information Technology and Artificial Intelligence | 1.35 | 218,570 | \$30,770M | Medical Devices | 34% | 7,800 | \$1,083M |
| Computers and Electronics Manufacturing | 1.33 | 36,460 | \$10,373M | Livestock Processing | 34% | 7,230 | \$556M |

Note: Industry clusters consisting of less than 0.1% of total regional employment are not shown in tables.



Workforce

| Top Occupations by LQ (2021) | LQ (2021) | Emp. (2021) | Top Occupations by Emp. Growth (2018-21) | Emp. Growth (2018-21) | Emp. (2021) |
|--|-----------|-------------|--|-----------------------|-------------|
| Electrical and Electronic Equipment Mechanics, Installers, and Repairers | 1.44 | 20,880 | Material Moving Workers | 49% | 238,310 |
| Sales Representatives, Services | 1.35 | 78,030 | Top Executives | 40% | 101,980 |
| Computer Occupations | 1.30 | 165,850 | Business Operations Specialists | 34% | 189,760 |
| Sales Representatives, Wholesale and Manufacturing | 1.28 | 53,700 | Advertising, Marketing, Promotions, Public Relations, and Sales Managers | 28% | 27,170 |
| Financial Specialists | 1.23 | 101,260 | Operations Specialties Managers | 24% | 68,210 |

Note: Occupations that predominately serve the local community and occupations consisting of less than 0.5% of total regional employment not shown in tables.



Regional Opportunities

Strengths

Diversified Economy

The Metroplex region is home to a large, diverse economy and workforce, providing a strong foundation for new and growing businesses across a variety of industries and sizes.

Advanced Technologies

The Metroplex region has strengths in tech-enabled advanced manufacturing industries, including aerospace and defense as well as computer, semiconductor, and electronics manufacturing.

Foundation for Commerce

The Metroplex regional workforce has strengths in sales-related occupations, which serve as a foundation for business expansion across a wide variety of industries.

Opportunities

The Metroplex region can continue to diversify its economy by targeting growth in emerging industries like artificial intelligence and medical devices while building on existing strengths in manufacturing and financial services.

The Metroplex region can take advantage of its varied industrial base to develop new strengths at the intersection of technology and a variety of increasingly tech-enabled industries such as AgTech and medical devices.

The Metroplex region can draw on workforce strengths in sales as well as industrial strengths in financial services to serve as a commercial hub for both small and large businesses across the state.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.

Data Sources: IMPLAN, Data Library, Texas, (2011-21); Guidehouse Analysis.



Northwest Texas



Northwest Texas Counties

| | | | | | |
|----------|--------------|----------|-----------|-------------|----------|
| Archer | Baylor | Brown | Callahan | Clay | Coleman |
| Comanche | Eastland | Foard | Hardeman | Haskell | Jack |
| Jones | Knox | Montague | Runnels | Shackelford | Stephens |
| Taylor | Throckmorton | Wichita | Wilbarger | Young | |



About the Northwest Texas Region

Spanning from the Oklahoma border in the north to the Colorado River in the south, the Northwest Texas region covers roughly 21,000 square miles and contains the Abilene and Wichita Falls metropolitan areas. The region comprises much of Big Country, a moniker which originated in Abilene. Northwest Texas is known for its proximity to the Red River, the canyons of the High Plains, and the greenery of North Texas, all of which make it a desirable region to visit, live, and work.

An abundance of natural resources has made Northwest Texas a hotbed for mining, which is highly concentrated in the region. Oil and gas production also makes up a sizable share of the Northwest Texas economy. The aerospace manufacturing industry is steadily growing in the region as well, with companies like Pratt & Whitney and Howmet Aerospace maintaining a presence in Wichita Falls.

Transportation jobs are rapidly growing in Northwest Texas and allow the region to export the many materials it produces. The region has also seen an uptick in computer and mathematical occupations, along with architectural and engineering jobs. Northwest Texas is served by Midwestern State and Abilene Christian University, among other higher education institutions.



Northwest Texas Fast Facts

| | Population | Industry | Exports | Workforce |
|------------------|---|---|--|---|
| Magnitude | 0.5M <i>Population (2021)</i> | \$26B <i>Contribution to GDP (2021)</i> | \$4B <i>Foreign Exports (2021)</i> | 0.3M <i>Total Employment (2021)</i> |
| Share | 2% <i>Share of Texas Population (2021)</i> | 1% <i>Share of Texas GDP (2021)</i> | 2% <i>Share of Texas Foreign Exports (2021)</i> | 2% <i>Share of Texas Employment (2021)</i> |
| Growth | 1% <i>Total Population Growth (2011–21)</i> | 2% <i>Total GDP Growth (2011–21)</i> | 27% <i>Total Foreign Export Growth (2011–21)</i> | 2% <i>Total Employment Growth (2011–21)</i> |

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.

Data Sources: IMPLAN, Data Library, Texas, (2011–21); Guidehouse Analysis.

REGIONAL Detail



Northwest Texas



Business and Industry

| Top Industry Clusters by LQ (2021) | LQ (2021) | Emp. (2021) | GDP (2021) | Top Industry Clusters by Emp. Growth (2015-21) | Emp. Growth (2015-21) | Emp. (2021) | GDP (2021) |
|---|-----------|-------------|------------|---|-----------------------|-------------|------------|
| Footwear | 9.71 | 250 | \$6M | Industrial Chemical Products | 140% | 530 | \$304M |
| Nonmetal Mining | 8.73 | 1,550 | \$315M | Furniture | 92% | 670 | \$44M |
| Metal Mining | 7.26 | 800 | \$214M | Wood Products | 85% | 250 | \$19M |
| Oil and Gas Production and Transportation | 4.30 | 15,040 | \$2,834M | Automotive | 60% | 720 | \$92M |
| Agricultural Inputs and Services | 2.82 | 2,500 | \$78M | Information Technology and Analytical Instruments | 58% | 340 | \$45M |

Note: Industry clusters consisting of less than 0.1% of total regional employment are not shown in tables.



Workforce

| Top Occupations by LQ (2021) | LQ (2021) | Emp. (2021) | Top Occupations by Emp. Growth (2018-21) | Emp. Growth (2018-21) | Emp. (2021) |
|--|-----------|-------------|--|-----------------------|-------------|
| Extraction Workers | 5.38 | 1,430 | Material Moving Workers | 45% | 8,760 |
| Agricultural Workers | 1.96 | 3,060 | Top Executives | 29% | 4,290 |
| Preschool, Elementary, Middle, Secondary, and Special Education Teachers | 1.37 | 7,700 | Postsecondary Teachers | 23% | 2,030 |
| Other Educational Instruction and Library Occupations | 1.30 | 3,020 | Business Operations Specialists | 23% | 6,900 |
| Vehicle and Mobile Equipment Mechanics, Installers, and Repairers | 1.22 | 3,230 | Operations Specialties Managers | 14% | 2,330 |

Note: Occupations that predominately serve the local community and occupations consisting of less than 0.5% of total regional employment not shown in tables.



Regional Opportunities

Strengths

Growth in Exports

Northwest Texas has experienced rapid growth in foreign exports relative to GDP from 2011–21, indicating an increase in exports from industries such as oil and gas, petroleum, and chemical production.

Rich in Resources

Northwest Texas has a strong presence of resource extraction industries, including mining and oil and gas, and shows growth in other resource-related industries like chemical and wood products.

Technical Strengths

Northwest Texas' workforce has strengths in technical occupations, showing high concentrations in roles such as extraction workers, agriculture workers, and vehicle and equipment mechanics.

Opportunities

The region can continue to grow its exports and bring money into the economy by focusing on export-heavy industries in the region, such as oil and gas, mining, and consumer goods.

Northwest Texas can leverage its strengths in natural resources such as mining and oil and gas to expand its economic base and diversify into emerging industries like manufacturing, chemical products, and wood products.

As the region expands into emerging industries, there is an opportunity to leverage transferable skills within the workforce to attract new businesses as well as identify and address any anticipated skill gaps.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.

Data Sources: IMPLAN, Data Library, Texas, (2011-21); Guidehouse Analysis.



South Texas



South Texas Counties

| | | | | | | | |
|-----------|----------|---------|----------|--------------|----------|----------|-----------|
| Aransas | Atascosa | Bandera | Bee | Bexar | Brooks | Calhoun | Cameron |
| Comal | DeWitt | Dimmit | Duval | Edwards | Frio | Goliad | Gonzales |
| Guadalupe | Hidalgo | Jackson | Jim Hogg | Jim Wells | Karnes | Kendall | Kenedy |
| Kerr | Kinney | Kleberg | La Salle | Lavaca | Live Oak | Maverick | McMullen |
| Medina | Nueces | Real | Refugio | San Patricio | Starr | Uvalde | Val Verde |
| Victoria | Webb | Willacy | Wilson | Zapata | Zavala | | |



About the South Texas Region

Comprising much of the Texas–Mexico border and running along the Gulf Coast, the South Texas region covers nearly 52,000 square miles and encompasses the San Antonio, McAllen–Edinburg–Mission, Corpus Christi, Brownsville–Harlingen, Laredo, and Victoria metropolitan areas. The region’s wide reach gives it one of the most diverse geographies of any region, spanning from the sun-kissed desert in the west to the lush greenery of the Hill Country and the sandy beaches of the coast.

The South Texas region’s proximity to the U.S.–Mexico border, along with its multiple ports in the Gulf, makes it a major hub for international trade; it serves as a gateway to Texas and North America for goods coming in by road, rail, and sea. It also serves as home to San Antonio, the third-largest city in Texas and a major hub for the defense industry. The region is also a popular tourist destination, with attractions such as the Alamo — one of Texas’ most famous historical landmarks — and the beaches along the coast.

South Texas’ workforce is as diverse as its economy, with jobs in computer and mathematics; transportation and material moving; arts, design, and media; and life science all growing at a faster rate than overall state job growth within the same occupations. The region is served by The University of Texas at San Antonio and The University of Texas Rio Grande Valley, among other higher education institutions.



South Texas Fast Facts

| | Population | Industry | Exports | Workforce |
|------------------|--|--|--|--|
| Magnitude | 5.3M <i>Population (2021)</i> | \$255B <i>Contribution to GDP (2021)</i> | \$25B <i>Foreign Exports (2021)</i> | 2.8M <i>Total Employment (2021)</i> |
| Share | 18% <i>Share of Texas Population (2021)</i> | 13% <i>Share of Texas GDP (2021)</i> | 11% <i>Share of Texas Foreign Exports (2021)</i> | 16% <i>Share of Texas Employment (2021)</i> |
| Growth | 11% <i>Total Population Growth (2011–21)</i> | 24% <i>Total GDP Growth (2011–21)</i> | 28% <i>Total Foreign Export Growth (2011–21)</i> | 16% <i>Total Employment Growth (2011–21)</i> |

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.

Data Sources: IMPLAN, Data Library, Texas, (2011–21); Guidehouse Analysis.



South Texas



Business and Industry

| Top Industry Clusters by LQ (2021) | LQ (2021) | Emp. (2021) | GDP (2021) | Top Industry Clusters by Emp. Growth (2015-21) | Emp. Growth (2015-21) | Emp. (2021) | GDP (2021) |
|---|-----------|-------------|------------|--|-----------------------|-------------|------------|
| Petroleum Refining | 4.06 | 3,420 | \$4,585M | Automotive | 93% | 11,470 | \$6,027M |
| Fishing and Fishing Products | 4.06 | 6,430 | \$381M | Fishing and Fishing Products | 67% | 6,430 | \$381M |
| Nonmetal Mining | 2.05 | 3,540 | \$1,282M | Transportation Manufacturing | 58% | 13,380 | \$6,250M |
| Oil and Gas Production and Transportation | 1.88 | 64,180 | \$15,733M | Furniture | 50% | 2,920 | \$185M |
| Water Transportation | 1.61 | 20,630 | \$1,180M | Medical Devices | 46% | 1,410 | \$203M |

Note: Industry clusters consisting of less than 0.1% of total regional employment are not shown in tables.



Workforce

| Top Occupations by LQ (2021) | LQ (2021) | Emp. (2021) | Top Occupations by Emp. Growth (2018-21) | Emp. Growth (2018-21) | Emp. (2021) |
|--|-----------|-------------|--|-----------------------|-------------|
| Preschool, Elementary, Middle, Secondary, and Special Education Teachers | 1.53 | 84,370 | Material Moving Workers | 47% | 95,480 |
| Other Educational Instruction and Library Occupations | 1.37 | 31,110 | Top Executives | 34% | 44,910 |
| Other Teachers and Instructors | 1.21 | 16,980 | Business Operations Specialists | 27% | 82,780 |
| Vehicle and Mobile Equipment Mechanics, Installers, and Repairers | 1.10 | 28,510 | Operations Specialties Managers | 17% | 25,400 |
| Retail Sales Workers | 1.08 | 114,050 | Other Management Occupations | 12% | 41,540 |

Note: Occupations that predominately serve the local community and occupations consisting of less than 0.5% of total regional employment not shown in tables.



Regional Opportunities

Strengths

Export Growth

South Texas' growth in foreign exports outpaced overall GDP growth from 2011–21, indicating an increase in exports from industries such as petroleum, oil and gas, and chemicals and plastics.

Natural Resources

South Texas shows strength in natural resource-related industries that support the statewide economy, including petroleum refining, mining, and oil and gas.

Connectivity with Mexico

The region's location enables economic interconnectivity with Mexico. Industries leverage the strengths of South Texas and Northern Mexico to grow supply chains and workforce pipelines.

Opportunities

Given South Texas' proximity to the U.S.-Mexico border and strength in exporting industries, the region has an opportunity to target growth in a diversity of export-driven sectors and advance the state's international competitiveness.

In addition to capitalizing on these strengths, South Texas can catalyze growing, tech-enabled industries such as automotive manufacturing and medical devices.

South Texas can capitalize on the interconnectivity of supply chains and labor markets to catalyze growth of emerging industries like automotive manufacturing through efforts such as the Texas-Mexico Automotive SuperCluster.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.

Data Sources: IMPLAN, Data Library, Texas, (2011-21); Guidehouse Analysis.

REGIONAL Profile



Southeast Texas



Southeast Texas Counties

| | | | | | |
|----------|---------|---------|--------|---------------|-------------|
| Angelina | Hardin | Houston | Jasper | Jefferson | Nacogdoches |
| Newton | Orange | Polk | Sabine | San Augustine | San Jacinto |
| Shelby | Trinity | Tyler | | | |



About the Southeast Texas Region

Stretching along the Gulf of Mexico and running up to the Louisiana border, the Southeast Texas region covers over 12,000 square miles. Southeast Texas contains the Beaumont–Port Arthur metropolitan area and stretches up to the boundless forests that make up the Big Thicket. Home to many ports as well as much of the Intracoastal Waterway, Southeast Texas offers a variety of water transport options. Due to its proximity to Louisiana, parts of Southeast Texas have maintained aspects of Cajun culture that are unique within the state.

The Southeast Texas region is served by Stephen F. Austin State University and Lamar University, among other higher education institutions. The region is historically associated with the oil industry due to the vast oil fields discovered under Beaumont and the Golden Triangle region over a century ago; however, Southeast Texas has diversified its economy in subsequent years and now serves as a major commerce hub as a result of its access to ports and other transportation infrastructure.

Much like Upper East Texas, Southeast Texas has a growing forest products industry, which, along with tourism, has been a focus of recent economic development efforts in the region. As of late, the region has seen an influx of transportation-related jobs as well as jobs in the life, physical, and social sciences, and computer and mathematical fields.



Southeast Texas Fast Facts

| | Population | Industry | Exports | Workforce |
|------------------|--|--|--|---|
| Magnitude | 0.8M <i>Population (2021)</i> | \$40B <i>Contribution to GDP (2021)</i> | \$9B <i>Foreign Exports (2021)</i> | 0.4M <i>Total Employment (2021)</i> |
| Share | 3% <i>Share of Texas Population (2021)</i> | 2% <i>Share of Texas GDP (2021)</i> | 4% <i>Share of Texas Foreign Exports (2021)</i> | 2% <i>Share of Texas Employment (2021)</i> |
| Other | 50% <i>Population Ages 25-64 (2021)</i> | 81K <i>Number of Establishments (2021)</i> | 16% <i>Total Foreign Export Growth (2011 – 2021)</i> | 67% <i>Labor Force Participation Rate Ages 25-64 (2021)</i> |

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.
 Data Sources: IMPLAN, Data Library, Texas, (2011-21); Guidehouse Analysis; US Census Bureau, County Business Patterns, 2021.



Southeast Texas



Business and Industry

| Top Industry Clusters by LQ (2021) | LQ (2021) | Emp. (2021) | GDP (2021) | Top Industry Clusters by Emp. Growth (2015-21) | Emp. Growth (2015-21) | Emp. (2021) | GDP (2021) |
|-------------------------------------|-----------|-------------|------------|--|-----------------------|-------------|------------|
| Petroleum Refining | 37.95 | 4,360 | \$7,784M | Trailers, Motor Homes, and Appliances | 364% | 480 | \$61M |
| Industrial Chemical Products | 15.35 | 4,270 | \$2,803M | Video Production and Distribution | 62% | 430 | \$10M |
| Wood Products | 6.96 | 4,660 | \$765M | Information Technology and Artificial Intelligence | 62% | 2,840 | \$196M |
| Chemical and Plastics Manufacturing | 3.86 | 6,640 | \$3,407M | AgTech | 26% | 11,640 | \$614M |
| Livestock Processing | 3.62 | 3,310 | \$198M | Furniture | 24% | 580 | \$52M |

Note: Industry clusters consisting of less than 0.1% of total regional employment are not shown in tables.



Workforce

| Top Occupations by LQ (2021) | LQ (2021) | Emp. (2021) | Top Occupations by Emp. Growth (2018-21) | Emp. Growth (2018-21) | Emp. (2021) |
|--|-----------|-------------|--|-----------------------|-------------|
| Plant and System Operators | 3.23 | 1,960 | Material Moving Workers | 37% | 13,070 |
| Supervisors of Production Workers | 1.55 | 1,820 | Top Executives | 26% | 5,840 |
| Supervisors of Construction and Extraction Workers | 1.52 | 1,900 | Business Operations Specialists | 25% | 8,650 |
| Preschool, Elementary, Middle, Secondary, and Special Education Teachers | 1.48 | 10,380 | Operations Specialties Managers | 11% | 3,100 |
| Construction Trades Workers | 1.46 | 12,300 | Financial Specialists | 9% | 3,950 |

Note: Occupations that predominately serve the local community and occupations consisting of less than 0.5% of total regional employment not shown in tables.



Regional Opportunities

Strengths

Capitalizing on Exports

Southeast Texas has seen growth in foreign exports in recent years, driven by growth in export-driven industries like petroleum, chemicals and plastics, and biotechnology.

Rich in Resources

Southeast Texas has strength in a variety of natural resource industries that support the statewide economy, including petroleum refining, chemicals, wood products, and livestock.

Affordable Cost of Living

Many areas in Southeast Texas offer a relatively low cost of living. Average home values in Port Arthur are 73% lower than the national average.

Opportunities

Southeast Texas can leverage its existing strengths as a trade hub and oil stronghold to target the growth of adjacent industries and diversify its economic base.

Southeast Texas can continue to cultivate strengths in natural resource industries while also targeting growth in emerging industries such as information technology, video production, and AgTech.

Communities in Southeast Texas can use their attractive cost of living to draw in new residents and businesses, which can help grow the regional population and GDP.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.

Data Sources: IMPLAN, Data Library, Texas, (2011-21); Guidehouse Analysis.



Upper East Texas



Upper East Texas Counties

| | | | | | |
|----------|--------|----------|-----------|-----------|-------|
| Anderson | Bowie | Camp | Cass | Cherokee | Delta |
| Franklin | Gregg | Harrison | Henderson | Hopkins | Lamar |
| Marion | Morris | Panola | Rains | Red River | Rusk |
| Smith | Titus | Upshur | Van Zandt | Wood | |



About the Upper East Texas Region

Reaching from the Cedar Creek Reservoir in the west to the Arkansas and Louisiana borders in the east, the Upper East Texas region spans nearly 16,000 square miles and encompasses the Longview, Texarkana, and Tyler metropolitan areas. The western part of the region contains scenic prairies, which transition into the Piney Woods to the east. With its boundless forests, the Upper East region boasts a natural beauty unique within Texas' geography.

The region's diversity of natural resources lays the foundation for a diversified economy, which exports various commodities including oil, gas, chemicals, and animal products. The region has a storied history as a trade hub — it is home to First Monday Trade Days, the largest flea market in the world, which has been operating in Canton since the 1850s.

Upper East Texas is served by a number of educational institutions, including The University of Texas at Tyler and Texas A&M campuses at Texarkana and Commerce, along with a variety of private colleges and community colleges. The region has also seen significant growth in high-wage jobs over the last few years, particularly in management, business, and finance occupations.



Upper East Texas Fast Facts

| | Population | Industry | Exports | Workforce |
|------------------|---|---|--|---|
| Magnitude | 1.2M <i>Population (2021)</i> | \$54B <i>Contribution to GDP (2021)</i> | \$7B <i>Foreign Exports (2021)</i> | 0.6M <i>Total Employment (2021)</i> |
| Share | 4% <i>Share of Texas Population (2021)</i> | 3% <i>Share of Texas GDP (2021)</i> | 3% <i>Share of Texas Foreign Exports (2021)</i> | 4% <i>Share of Texas Employment (2021)</i> |
| Other | 4% <i>Total Population Growth (2011–21)</i> | 137K <i>Number of Establishments (2021)</i> | 12% <i>Total Foreign Export Growth (2011–21)</i> | 5% <i>Total Employment Growth (2011–21)</i> |

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.
 Data Sources: IMPLAN, Data Library, Texas, (2011-21); Guidehouse Analysis; US Census Bureau, County Business Patterns, 2021.



Upper East Texas



Business and Industry

| Top 5 Industry Clusters by LQ (2021) | LQ (2021) | Emp. (2021) | GDP (2021) |
|---|-----------|-------------|------------|
| Trailers, Motor Homes, and Appliances | 8.47 | 4,250 | \$372M |
| Livestock Processing | 6.17 | 9,600 | \$642M |
| Industrial Chemical Products | 3.32 | 1,570 | \$902M |
| Metal Mining | 2.90 | 720 | \$314M |
| Oil and Gas Production and Transportation | 2.84 | 22,490 | \$5,075M |

| Top 5 Industry Clusters by Emp. Growth (2015-21) | Emp. Growth (2015-21) | Emp. (2021) | GDP (2021) |
|--|-----------------------|-------------|------------|
| Aerospace Vehicles, Aircraft, and Defense | 140% | 510 | \$83M |
| Industrial Chemical Products | 107% | 1,570 | \$902M |
| Information Technology and Artificial Intelligence | 101% | 5,860 | \$452M |
| Livestock Processing | 73% | 9,600 | \$642M |
| Medical Devices | 56% | 1,430 | \$160M |

Note: Industry clusters consisting of less than 0.1% of total regional employment are not shown in tables.



Workforce

| Top Occupations by LQ (2021) | LQ (2021) | Employment (2021) |
|--|-----------|-------------------|
| Extraction Workers | 4.46 | 2,460 |
| Food Processing Workers | 2.07 | 5,410 |
| Preschool, Elementary, Middle, Secondary, and Special Education Teachers | 1.49 | 17,370 |
| Metal Workers and Plastic Workers | 1.38 | 6,770 |
| Supervisors of Production Workers | 1.35 | 2,630 |

| Top Occupations by Emp. Growth (2018-21) | Emp. Growth (2018-21) | Emp. (2021) |
|--|-----------------------|-------------|
| Material Moving Workers | 46% | 25,120 |
| Food Processing Workers | 33% | 5,410 |
| Top Executives | 32% | 9,580 |
| Business Operations Specialists | 27% | 14,050 |
| Operations Specialties Managers | 13% | 5,040 |

Note: Occupations that predominately serve the local community and occupations consisting of less than 0.5% of total regional employment not shown in tables.



Regional Opportunities

Strengths

Export Driven

Upper East Texas is a strong producer of tradable goods, including trailers, livestock products, and chemicals. The region has shown rapid growth in foreign exports relative to overall GDP in recent years.

Rich in Resources

Upper East Texas is home to strong resource extraction and livestock processing industry clusters, the latter of which has also demonstrated significant growth.

Tailored Workforce

Technical occupations such as extraction workers, food processing workers, and metal and plastic workers are all highly concentrated in the region.

Opportunities

With a long history as a trade hub, Upper East Texas is well-positioned for continued growth in export-driven industries such as oil and gas, chemical manufacturing, and livestock processing.

Upper East Texas can continue to cultivate strengths in natural resource industries while also targeting expansion in emerging industries such as aerospace and defense, information technology, and medical devices.

Upper East Texas can leverage its highly technical workforce to attract new businesses and work with educational institutions to build out critical skills needed to support emerging industries.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.

Data Sources: IMPLAN, Data Library, Texas, (2011-21); Guidehouse Analysis.



Upper Rio Grande



Upper Rio Grande Counties

Brewster Culberson El Paso Hudspeth Jeff Davis Presidio



About the Upper Rio Grande Region

Comprising the westernmost part of Texas, the Upper Rio Grande region runs along the U.S.–Mexico border to the state line between Texas and New Mexico, encompassing approximately 21,700 square miles, including the El Paso metropolitan area. The Upper Rio Grande region is home to Texas’ most awe-inspiring sights, including Big Bend and Guadalupe Mountains National Parks, both of which serve as popular tourist destinations. Visitors also flock to Marfa, a surprising hub for artists, culinary enthusiasts, and those seeking a unique escape from the hustle and bustle of big cities. With its proximity to Mexico, the region boasts some of the most diverse and flavorful cuisine in the state.

The Upper Rio Grande region’s proximity to Mexico, particularly the Borderplex area containing the cities of El Paso and Juarez, make it a hub for international commerce. The Upper Rio Grande region has an extremely diverse economy — the top five most concentrated industry clusters in the region belong to different sectors, presenting opportunities for businesses and professionals of all types.

In line with its diversity of industry, the Upper Rio Grande region is experiencing growth in a wide range of job fields. Among them are computer and mathematics, life sciences, and architecture and engineering occupations. The region is served by The University of Texas at El Paso and Sul Ross State University as well as other higher education institutions.



Upper Rio Grande Fast Facts

| | Population | Industry | Exports | Workforce |
|------------------|---|---|---|--|
| Magnitude | 0.9M <i>Population (2021)</i> | \$39B <i>Contribution to GDP (2021)</i> | \$4B <i>Foreign Exports (2021)</i> | 0.5M <i>Total Employment (2021)</i> |
| Share | 3% <i>Share of Texas Population (2021)</i> | 2% <i>Share of Texas GDP (2021)</i> | 2% <i>Share of Texas Foreign Exports (2021)</i> | 3% <i>Share of Texas Employment (2021)</i> |
| Growth | 5% <i>Total Population Growth (2011–21)</i> | 14% <i>Total GDP Growth (2011–21)</i> | 4% <i>Total Foreign Export Growth (2011–21)</i> | 10% <i>Total Employment Growth (2011–21)</i> |

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.
 Data Sources: IMPLAN, Data Library, Texas, (2011–21); Guidehouse Analysis.



Upper Rio Grande



Business and Industry

| Top 5 Industry Clusters by LQ (2021) | LQ (2021) | Emp. (2021) | GDP (2021) |
|--------------------------------------|-----------|-------------|------------|
| Footwear | 26.83 | 1,030 | \$37M |
| Apparel | 5.09 | 1,440 | \$50M |
| Petroleum Refining | 4.64 | 610 | \$1,020M |
| Upstream Metal Manufacturing | 3.05 | 2,150 | \$526M |
| Leather and Related Products | 3.01 | 230 | \$10M |

| Top 5 Industry Clusters by Emp. Growth (2015-21) | Emp. Growth (2015-21) | Emp. (2021) | GDP (2021) |
|---|-----------------------|-------------|------------|
| Medical Devices | 341% | 550 | \$71M |
| Information Technology and Analytical Instruments | 77% | 590 | \$75M |
| Automotive | 64% | 1,250 | \$180M |
| Transportation Manufacturing | 62% | 1,390 | \$194M |
| Oil and Gas Production and Transportation | 49% | 4,670 | \$1,011M |

Note: Industry clusters consisting of less than 0.1% of total regional employment are not shown in tables.



Workforce

| Top Occupations by LQ (2021) | LQ (2021) | Emp. (2021) |
|--|-----------|-------------|
| Preschool, Elementary, Middle, Secondary, and Special Education Teachers | 1.35 | 13,010 |
| Other Educational Instruction and Library Occupations | 1.25 | 4,950 |
| Motor Vehicle Operators | 1.22 | 13,120 |
| Vehicle and Mobile Equipment Mechanics, Installers, and Repairers | 1.11 | 5,070 |
| Other Teachers and Instructors | 1.11 | 2,720 |

| Top Occupations by Emp. Growth (2018-21) | Emp. Growth (2018-21) | Emp. (2021) |
|--|-----------------------|-------------|
| Material Moving Workers | 53% | 16,110 |
| Top Executives | 39% | 7,410 |
| Business Operations Specialists | 29% | 13,260 |
| Operations Specialties Managers | 18% | 3,840 |
| Financial Specialists | 12% | 5,170 |

Note: Occupations that predominately serve the local community and occupations consisting of less than 0.5% of total regional employment not shown in tables.



Regional Opportunities

Strengths

Increasing Productivity

The Upper Rio Grande's GDP growth outpaced employment growth from 2011–21 (14% and 10%, respectively), indicating that the regional workforce is becoming more productive.

Consumer Goods

Industries producing consumer goods, including footwear, apparel, and leather products have a strong presence in the Upper Rio Grande region.

Diversity of Occupations

The Upper Rio Grande has a diverse set of workforce strengths, with concentrations in a wide variety of technical occupations.

Opportunities

The Upper Rio Grande can build on recent productivity gains by investing in the expansion of higher value-add industries like advanced manufacturing and information technology.

The Upper Rio Grande can continue to grow existing strengths in consumer goods while also targeting emerging industries such as medical devices, artificial intelligence, and automotive and transportation manufacturing.

The region can focus workforce development efforts on preparing its technical talent pool for occupations supporting emerging industries such as advanced manufacturing.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.

Data Sources: IMPLAN, Data Library, Texas, (2011-21); Guidehouse Analysis.



West Texas



West Texas Counties

| | | | | | | | |
|---------|-----------|--------|--------|------------|--------|----------|----------|
| Andrews | Borden | Coke | Crane | Crockett | Dawson | Ector | Fisher |
| Gaines | Glasscock | Howard | Irion | Loving | Martin | Midland | Mitchell |
| Nolan | Pecos | Reagan | Reeves | Schleicher | Scurry | Sterling | Sutton |
| Terrell | Tom Green | Upton | Ward | Winkler | | | |



About the West Texas Region

Covering much of the landscape west of the Hill Country, the West Texas region spans over 38,200 square miles. It reaches from the city of Mason in the east to the Rio Grande in the west and contains the Odessa, Midland, and San Angelo metropolitan areas. Driving through West Texas, pumpjacks fill the serene mountainous landscape and the occasional stadium lights stand out in the night sky — especially on Friday nights.

West Texas, though primarily known for its oil and gas exports, is home to a plethora of natural resources, which has laid the groundwork for robust mining and construction industries. Regional economic development efforts have focused on leveraging these natural resources, with target industries including tourism, agriculture, forestry, fishing, hunting, resource mining, and utilities.

West Texas is served by The University of Texas Permian Basin and by Angelo State University among other institutions. The region is experiencing growth in multiple occupations, including personal care, management, and architecture and engineering.



West Texas Fast Facts

| | Population | Industry | Exports | Workforce |
|------------------|--|---|---|--|
| Magnitude | 0.7M <i>Population (2021)</i> | \$67B <i>Contribution to GDP (2021)</i> | \$12B <i>Foreign Exports (2021)</i> | 0.4M <i>Total Employment (2021)</i> |
| Share | 2% <i>Share of Texas Population (2021)</i> | 3% <i>Share of Texas GDP (2021)</i> | 5% <i>Share of Texas Foreign Exports (2021)</i> | 2% <i>Share of Texas Employment (2021)</i> |
| Growth | 10% <i>Total Population Growth (2011–21)</i> | 34% <i>Total GDP Growth (2011–21)</i> | 148% <i>Total Foreign Export Growth (2011–21)</i> | 14% <i>Total Employment Growth (2011–21)</i> |

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.
 Data Sources: IMPLAN, Data Library, Texas, (2011–21); Guidehouse Analysis.



West Texas



Business and Industry

| Top 5 Industry Clusters by LQ (2021) | LQ (2021) | Emp. (2021) | GDP (2021) |
|---|-----------|-------------|------------|
| Nonmetal Mining | 11.72 | 3,470 | \$2,121M |
| Metal Mining | 11.13 | 2,040 | \$1,902M |
| Oil and Gas Production and Transportation | 10.95 | 63,910 | \$26,738M |
| Construction Products and Services | 1.97 | 10,170 | \$1,268M |
| Renewables | 1.93 | 9,960 | \$1,959M |

| Top 5 Industry Clusters by Emp. Growth (2015-21) | Emp. Growth (2015-21) | Emp. (2021) | GDP (2021) |
|--|-----------------------|-------------|------------|
| Information Technology and Artificial Intelligence | 34% | 2,360 | \$187M |
| Environmental Services | 29% | 1,330 | \$219M |
| Business Services | 26% | 32,410 | \$2,717M |
| Electric Power Generation and Transmission | 19% | 1,620 | \$1,118M |
| Hospitality and Tourism | 16% | 8,670 | \$532M |

Note: Industry clusters consisting of less than 0.1% of total regional employment are not shown in tables.



Workforce

| Top Occupations by LQ (2021) | LQ (2021) | Emp. (2021) |
|---|-----------|-------------|
| Extraction Workers | 32.44 | 12,391 |
| Supervisors of Construction and Extraction Workers | 3.09 | 4,475 |
| Plant and System Operators | 2.59 | 1,810 |
| Agricultural Workers | 1.73 | 3,890 |
| Vehicle and Mobile Equipment Mechanics, Installers, and Repairers | 1.53 | 5,840 |

| Top Occupations by Emp. Growth (2018-21) | Emp. Growth (2018-21) | Emp. (2021) |
|---|-----------------------|-------------|
| Top Executives | 26% | 8,430 |
| Material Moving Workers | 25% | 15,490 |
| Business Operations Specialists | 20% | 10,490 |
| Supervisors of Transportation and Material Moving Workers | 14% | 1,620 |
| Operations Specialties Managers | 10% | 3,800 |

Note: Occupations that predominately serve the local community and occupations consisting of less than 0.5% of total regional employment not shown in tables.



Regional Opportunities

Strengths

Export Focused

West Texas experienced rapid growth in foreign exports from 2011–21 (148%), resulting in the region contributing relatively more to statewide foreign exports than it does to statewide GDP.

Natural Resources

West Texas offers a wealth of natural resources, with a strong presence of industries such as mining, oil and gas, and renewables.

Technical Workforce

West Texas has distinct concentrations in highly technical occupations such as extraction workers, plant operators, and mechanics, which support the growth of natural resource industries.

Opportunities

Export-focused industries such as oil, gas, and mining make up a major part of the region's economy, and fostering these export-driven industries will help to further Texas' status as a global economic powerhouse.

As rare earth metals and minerals become more critical to the national economy, West Texas is well-positioned to support the expansion of mining industries with notable strengths in both metal and nonmetal mining services.

West Texas can leverage its tailored workforce to target the growth of adjacent, emerging industries such as electric power generation and transmission to support diversified economic growth.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.

Data Sources: IMPLAN, Data Library, Texas, (2011-21); Guidehouse Analysis.

APPENDIX B: TARGET SECTOR PROFILES

About the Target Sector Profiles

Our global economic leadership is supported by the diversity of our industries and our ability to excel in multiple areas. To build on our standing as a global economic leader, it is critical that we continue cultivating the growth of our historic strengths while bolstering the development of emerging economic opportunities. A key element of “**Bigger. Better. Texas.**” is the selection of target sectors and clusters, which identifies industries that will best position the state to leverage our competitive advantages and catalyze economic growth. In-depth analyses of the target sectors and clusters are incorporated into the target sector profiles to provide information and insights for various stakeholders supporting our economic growth.

The target sector profiles can serve as a resource for our economic development leaders at the state and local levels. These leaders can leverage the analyses and key takeaways in the profiles to better understand the economic impact of the target sectors and the clusters nested within them. The profiles can also be used to promote the target sectors and clusters to businesses, decision-makers, and site selection consultants. Businesses can also leverage the profiles to understand the state’s target sector and cluster landscape and assets that may be beneficial to as they seek to establish and grow their business.

Composition of Target Sectors

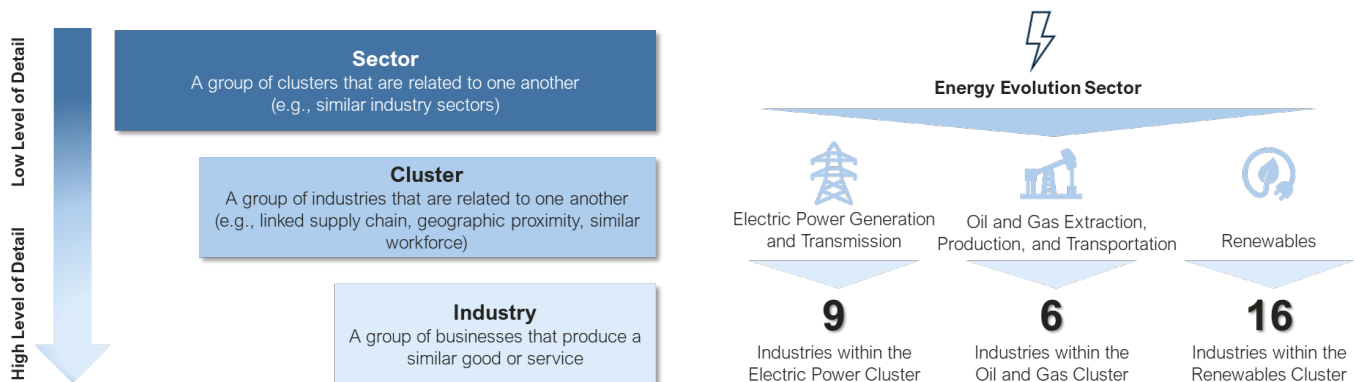
As detailed in Figure 22 below, each of these target sectors acts as a “nesting doll” with multiple layers of detail underlying it. The levels of detail included are as follows: sector, cluster, and industry.

At the top in dark blue are **sectors**, which are the least granular level of detail. For the purposes of this plan, a sector is a group of clusters that are intertwined with one another. Below sectors are **clusters**, which are groups of industries related to one another through connections like linked supply chains, geographic proximity, and a similar workforce. At the bottom in light blue are **industries**, which are the most granular building block. An industry is a group of businesses that produce a similar good or service. Simply put, an industry is a group of businesses, a cluster is a group of industries, and a sector is a group of clusters.

Figure 22 below visualizes the three key terms and how they nest together using the Energy Evolution sector as an example. Energy Evolution includes three target clusters: Electric Power Generation and Transmission; Oil and Gas Extraction, Production, and Transportation; and Renewables. Each of these target clusters includes several underlying industries, as shown on the bottom layer of the figure.

Our target sector profiles include data and takeaways at the sector and cluster level. The industries that underlie each target cluster are included in Appendix D.

Figure 22. Composition of Target Sectors with Example



How to Read the Target Sector Profiles

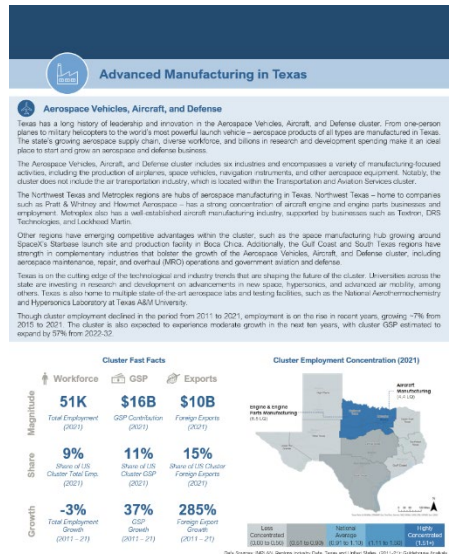
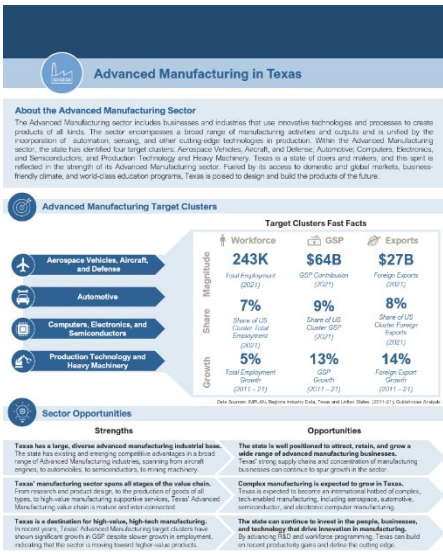
The profiles consist of the following pages for each target sector, which are sampled in the figures below:

- Target Sector Profile Cover Page:** The first page begins with an overview of the sector that establishes a common definition and summarizes fast facts for the target clusters, including statistics on the target clusters' total workforce, GDP contribution, and foreign exports.
- Target Sector Profile Workforce Page:** The second page provides detailed data and insights regarding the target sector's workforce, including a distribution of total employment by occupational group, key occupations, and key competencies held by workers.
- Target Cluster Profile Page(s):** The target sector profiles then contain one page dedicated to each of the target clusters that make up the sector. This cluster profile page includes a narrative introduction and summary of the cluster's strengths, key assets, growth projections, regional presence, and the cluster's history in Texas as well as fast facts about its workforce, GDP contribution, foreign exports, and geographical concentrations.

Sample Sector Profile Cover Page

Sample Sector Profile Workforce Page

Sample Cluster Profile Page



Key Elements of Target Sector Profiles

The target sector profiles contain the following key elements, which are highlighted and described next to the sample pages below:

Sample Sector Profile Cover Page

About the Advanced Manufacturing Sector
The Advanced Manufacturing sector includes businesses and industries that use innovative technologies and processes to create products of all kinds. The sector encompasses a broad range of manufacturing activities and outputs and is unified by the incorporation of automation, sensing, and other cutting-edge technologies in production. Within the Advanced Manufacturing sector, the state has identified four target clusters: Aerospace Vehicles, Aircraft, and Defense; Automotive; Computers, Electronics, and Semiconductors; and Production Technology and Heavy Machinery. Texas is a state of doers and makers, and this spirit is reflected in the strength of its Advanced Manufacturing sector. Fueled by its access to domestic and global markets, business-friendly climate, and world-class education programs, Texas is poised to design and build the products of the future.

Advanced Manufacturing Target Clusters

Target Clusters Fast Facts

| Cluster | Workforce (2021) | GSP Contribution (2021) | Exports (2021) |
|--|------------------|-------------------------|----------------|
| Aerospace Vehicles, Aircraft, and Defense | 243K | \$64B | \$27B |
| Automotive | 7% | 9% | 8% |
| Computers, Electronics, and Semiconductors | 5% | 13% | 14% |
| Production Technology and Heavy Machinery | | | |

Sector Opportunities

Strengths
Texas has a large, diverse advanced manufacturing industrial base. The state has existing and emerging competitive advantages in a broad range of Advanced Manufacturing industries, spanning from aircraft engines, to automobiles, to semiconductors, to mining machinery.
Texas' manufacturing sector spans all stages of the value chain. From research and product design, to the production of goods of all types, to high value manufacturing supportive services, Texas' Advanced Manufacturing value chain is mature and inter-connected.
Texas is a destination for high-value, high-tech manufacturing. In recent years, Texas' Advanced Manufacturing target clusters have shown significant growth in GSP despite slower growth in employment, indicating that the sector is moving toward higher-value products.

Opportunities
The state is well positioned to attract, retain, and grow a wide range of advanced manufacturing businesses. Texas' strong supply chains and concentration of manufacturing businesses can continue to spur growth in the sector.
Complex manufacturing is expected to grow in Texas. Texas is expected to become an international hub of complex, tech-enabled manufacturing, including aerospace, automotive, semiconductor, and electronic computer manufacturing.
The state can continue to invest in the people, businesses, and technology that drive innovation in manufacturing. By advancing R&D and workforce programming, Texas can build on recent productivity gains and define the cutting edge.

Office of the Texas Governor – Statewide Economic Development Plan

- **Target Sector Definition:** The first panel of the cover page provides a narrative definition of the target sector, including a list of the target clusters that nest within the target sector.
- **Target Clusters Fast Facts:** The second panel of the cover page summarizes fast facts for the pool of target clusters, including statistics about the magnitude, relative size, and growth of the target clusters' total workforce, GDP contribution, and foreign exports.
- **Target Sector Opportunities:** The last panel on the cover page provides key takeaways for the target sectors, including high-level strengths and opportunities.

Sample Sector Profile Workforce Page

Target Sector Workforce Landscape
The workforce supporting Texas' Advanced Manufacturing target clusters is relatively specialized. As demonstrated in the chart at right, production occupations represent nearly half of total wage and salary employment in the target clusters, and architecture and engineering occupations represent another 15% of total cluster jobs. These clusters are also supported by operations staff, including management, business, and administrative occupations.
Texas' Advanced Manufacturing target clusters require a skilled workforce with a strong understanding of mathematics, computers, electronics, mechanics, and production. In recent years, technological knowledge and skill areas, such as computers, electronics, and programming, have grown in importance to Advanced Manufacturing target clusters. Top occupations and competencies for the target clusters are identified in the tables below.

Workforce Distribution by Occupation Type (2021)

| Occupation Type | Percentage |
|--|------------|
| Production Occupations | 45% |
| Architecture and Engineering Occupations | 14% |
| Other Occupations | 13% |
| Office and Administrative Support Occupations | 7% |
| Business and Financial Operations Management Occupations | 7% |
| Computer and Mathematical Occupations | 6% |

Key Detailed Occupations

| Top Detailed Occupations by Employment (2021) | Emp. (2021) | Top Detailed Occupations by Jobs Added (2018-21) | Jobs Added (2018-21) |
|---|-------------|--|----------------------|
| Assemblers and Fabricators | 47,140 | Other Production Occupations | 4,490 |
| Metal Workers and Plastic Workers | 28,490 | Business Operations Specialists | 1,930 |
| Engineers | 25,210 | Material Moving Workers | 1,640 |
| Other Production Occupations | 20,390 | Assemblers and Fabricators | 1,420 |
| Computer Occupations | 14,300 | Operations Specialists/Managers | 540 |

Key Competencies

| Top In-Demand Competency Areas (2021) | | | High Growth Competency Areas (2018-21) | | |
|---------------------------------------|---------------------------|-----------------------|--|-------------------------------|--------------------------|
| Rank | Knowledge Area | Skill Area | Rank | Knowledge Area | Skill Area |
| 1 | English Language | Critical Thinking | 1 | Administration and Management | Quality Control Analysis |
| 2 | Mathematics | Active Listening | 2 | Mechanical | Social Perceptiveness |
| 3 | Computers and Electronics | Reading Comprehension | 3 | Computers and Electronics | Complex Problem Solving |
| 4 | Production and Processing | Speaking | 4 | Public Safety and Security | Negotiation |
| 5 | Mechanical | Monitoring | 5 | Sales and Marketing | Programming |

Workforce Themes

Specialized Workforce
Nearly half of all Advanced Manufacturing employees are in production occupations.

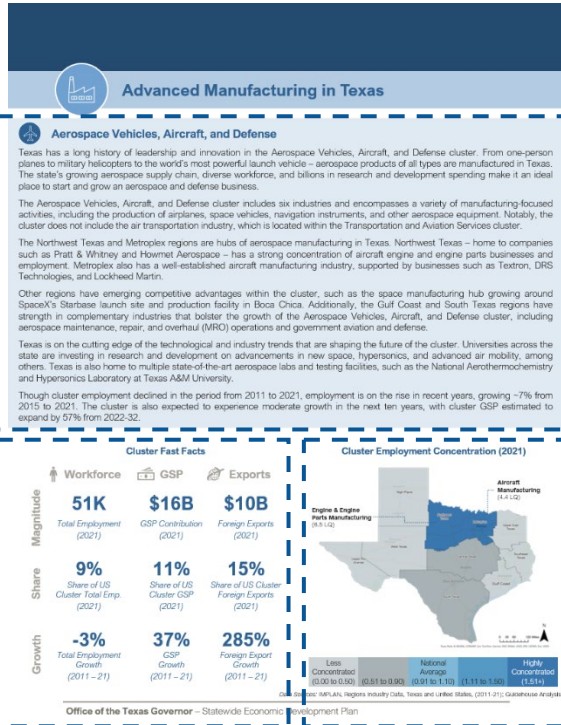
Technical Skills
Advanced Manufacturing businesses require a highly technical workforce.

Growth in Technology
Computers, electronics, and programming skills are growing in importance to the sector.

Office of the Texas Governor – Statewide Economic Development Plan
*Note: Wage and Salary Employment is a headcount of salaried or wage-earning employees. This figure does not include Proprietor Employment, which represents proprietors, partners, and tax-exempt cooperative members.

- **Target Sector Workforce Landscape:** The first panel paints a landscape of the workforce supporting the target sectors, along with a narrative introduction of key takeaways and a distribution of total employment by occupational group.
- **Key Detailed Occupations:** The second panel summarizes key detailed occupations supporting the target sectors, first by total employment and then by jobs added in the target sector.
- **Key Competencies:** The third panel on the page summarizes key competencies held by the target sector's workforce. The first table shows top in-demand knowledge and skill areas; the second table shows high-growth knowledge and skill areas.
- **Target Sector Workforce Themes:** The last panel highlights key themes emerging from the analysis included on the workforce page.

Sample Cluster Profile Page



- Cluster Definition and Description:** The first panel of the profile page includes a narrative introduction and summary of the cluster's strengths, key assets, growth projections, regional presence, and the cluster's history in the state, along with any other noteworthy attributes about the cluster in Texas.

- Employment Concentration Map:** The map on each cluster profile shows the relative concentration of cluster employment in each of Texas' 10 regions. This map uses Employment LQ. Employment LQ indicates the concentration of employment of a given sector in Texas' regions compared to national averages. For example, if a region has an LQ of 2.5 in a given cluster, then employment concentration in that cluster is 2.5 times that of the US average. An employment LQ greater than 1.1 is considered relatively concentrated. In this map, the level of employment concentration is visualized with shades of blue, with the darkest shade of blue representing the highest level of concentration. These maps are meant to help the reader understand which regions have concentrated cluster activity, but they rely on high-level data and do not capture all industry activity.

- Target Cluster Fast Facts:** The bottom left of the cluster profile pages summarizes fast facts for the target cluster, including statistics about the magnitude, relative size, and growth of the target cluster's total workforce, GDP contribution, and foreign exports.

Target Sector Profile Resources

The target sector profiles were compiled using a combination of data from IMPLAN and information from other sources. The fast facts data is taken directly from IMPLAN, while the narrative components were constructed using resources that can be found in the tables below. These resources were accessed on the web between February and April of 2024 and may have since been updated.

| Sector or Cluster | Reference Source | Title | Reference Type |
|---|--|---|----------------|
| Aerospace Vehicles, Aircraft, and Defense | Texas Office of Economic Development and Tourism | <i>Texas Aerospace, Aviation & Defense Industry</i> | Report |

| | | | |
|--|--|--|---------|
| Aerospace Vehicles, Aircraft, and Defense | Texas Economic Development Corporation | <i>Texas Aerospace, Aviation & Defense Industry</i> | Report |
| Automotive | Tesla | Gigafactory | Website |
| Automotive | Toyota | Toyota Motor Manufacturing, Texas (TMMTX) | Website |
| Automotive | Texas A&M University | <i>Unmanned Systems Lab</i> | Article |
| Automotive | Texas Office of Economic Development and Tourism | <i>Texas Automotive Industry</i> | Article |
| Automotive | Texas Office of Economic Development and Tourism | <i>Texas Manufacturing Industry Snapshot</i> | Article |
| Computers, Electronics, and Semiconductors | University of Texas Austin | <i>A Texas Semiconductor Boom on the Horizon</i> | Article |
| Computers, Electronics, and Semiconductors | AXIOS Dallas | <i>North Texas' "Silicon Prairie" Gets Billions in New Investment</i> | Article |
| Computers, Electronics, and Semiconductors | The Texas Tribune | <i>With \$1.4 Billion Investment, Texas Hopes to Sprint to the Front of the Microchip Manufacturing Race</i> | Article |
| Computers, Electronics, and Semiconductors | CNBC | <i>How Samsung and Texas Instruments Made the Lone Star State the Hub of US Chip Manufacturing</i> | Article |
| Computers, Electronics, and Semiconductors | Texas Office of Economic Development and Tourism | <i>Texas Semiconductor Industry Snapshot</i> | Article |
| Computers, Electronics, and Semiconductors | Texas Economic Development Corporation | <i>Advanced Manufacturing in Texas</i> | Article |
| Production Technology and Heavy Machinery | Texas Economic Development Corporation | <i>Advanced Manufacturing in Texas</i> | Website |
| Production Technology and Heavy Machinery | Texas Comptroller | <i>Machinery Manufacturing</i> | Report |
| Production Technology and Heavy Machinery | Texas Office of Economic Development and Tourism | <i>Texas Manufacturing Industry Snapshot</i> | Article |
| Electric Power Generation and Transmission | University of Texas at Austin | Smartgrid/Microgrid | Website |
| Electric Power Generation and Transmission | Houston Chronicle | <i>Why Does Texas Have its Own Power Grid? ERCOT Independence and Possible New Connections Explained</i> | Article |
| Electric Power Generation and Transmission | Texas Comptroller | <i>Texas Energy Tour: ERCOT</i> | Report |
| Electric Power Generation and Transmission | ERCOT | About ERCOT | Website |

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|--|--|---|---------|
| Oil and Gas Extraction, Production, and Transportation | Half | <i>10 Interesting Facts About Texas Oil and Gas</i> | Article |
| Oil and Gas Extraction, Production, and Transportation | Keystone Energy Tools | <i>Top 10 Trends Shaping the Oil and Gas Industry</i> | Article |
| Oil and Gas Extraction, Production, and Transportation | US Energy Information Administration | <i>Texas State Energy Profile</i> | Report |
| Oil and Gas Extraction, Production, and Transportation | Texas Railroad Commission | Texas Oil & Gas Producers by Rank | Website |
| Oil and Gas Extraction, Production, and Transportation | Texas Office of Economic Development and Tourism | <i>Texas Energy Industry Snapshot</i> | Article |
| Renewables | The University of Texas at Austin | Geothermal Energy | Website |
| Renewables | CNET | <i>Texas' Unique Energy Industry Is Helping the State Become a Renewables Leader</i> | Article |
| Renewables | E.ON | <i>E.ON Invests in 440 Megawatt Wind Farm in Texas</i> | Article |
| Renewables | Texas Comptroller | <i>Biomass Overview</i> | Report |
| Renewables | Texas Comptroller | <i>Hydroelectric Power Overview</i> | Report |
| Food Processing | CRB Group | <i>6 Innovative Food Processing Technologies</i> | Article |
| Food Processing | Dairy Processing | <i>GEA Opens New Food Processing Tech Center</i> | Article |
| Food Processing | Austin Technology Incubator | Food & Agtech | Website |
| Food Processing | Texas Office of Economic Development and Tourism | <i>Texas Manufacturing Industry</i> | Article |
| Livestock Processing | WAFB9 | <i>New Innovative Cattle Feed Being Donated to North Texas</i> | Article |
| Livestock Processing | Inven | <i>Top 22 Meat Processing Companies in Texas</i> | Article |
| Livestock Processing | Animal AgTech | <i>16 Animal AgTech Innovators Transforming the Livestock Industry</i> | Article |
| Livestock Processing | Texas Department of Agriculture | Marketing and International Trade | Website |
| Film, Music, and Culture | Native Instruments | <i>9 Music Trends to See in 2024</i> | Article |
| Film, Music, and Culture | Austin Monthly | <i>This \$267 Million Movie and TV Studio Is Revitalizing the Texas Film Industry</i> | Article |
| Film, Music, and Culture | Texas Monthly | <i>The Future of Texas Film is \$200 Million Brighter</i> | Article |

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|---|--|---|---------|
| Film, Music, and Culture | Texas Music Office | About the TMO | Website |
| Film, Music, and Culture | Texas Film Commission | Production Incentives Overview | Website |
| Hospitality and Tourism | Texas Monthly | <i>The Future of Texas Film is \$200 Million Brighter</i> | Article |
| Hospitality and Tourism | Texas Comptroller | <i>Leisure and Hospitality Overview</i> | Report |
| Hospitality and Tourism | Texas Office of Economic Development and Tourism | Event Trust Funds Program | Website |
| Information Technology and Artificial Intelligence | University of Texas at Austin | <i>New Texas Center Will Create Generative AI Computing Cluster Among Largest of Its Kind</i> | Report |
| Information Technology and Artificial Intelligence | Texas Department of Information Resources | Emerging Technologies: Artificial Intelligence Center of Excellence | Website |
| Information Technology and Artificial Intelligence | Texas Economic Development Corporation | Information and Computer Technology in Texas | Website |
| Agricultural Science & Technology | KXAN | <i>‘World’s Largest Lettuce Greenhouse’ Opens in Temple, Texas</i> | Article |
| Agricultural Science & Technology | Texas Farm Bureau | <i>John Deere Opens New Innovation Hub in Austin</i> | Article |
| Agricultural Science & Technology | Austin Technology Incubator | Food & Agtech | Website |
| Biotechnology, Pharmaceuticals, and Medical Devices | RSM | <i>Life Sciences Industry Outlook</i> | Article |
| Biotechnology, Pharmaceuticals, and Medical Devices | Texas Office of Economic Development and Tourism | <i>Biotechnology & Life Sciences</i> | Article |
| Biotechnology, Pharmaceuticals, and Medical Devices | Texas Office of Economic Development and Tourism | <i>Life Sciences in Texas</i> | Article |
| Biotechnology, Pharmaceuticals, and Medical Devices | Texas Office of Economic Development and Tourism | <i>Biotechnology & Life Sciences Industry Snapshot</i> | Article |
| Industrial Chemical Products | Noah Chemicals | <i>The Future of Chemical Manufacturing: Advancements in Technology and Innovation</i> | Article |
| Industrial Chemical Products | Chemtex | <i>Oilfield Chemicals Exploration & Production</i> | Article |
| Industrial Chemical Products | Chemical Engineering News | <i>New Avenues for Amplifying Chemistry Innovation in Texas</i> | Article |
| Industrial Chemical Products | Texas Comptroller | <i>Chemical Manufacturing Supply Chain</i> | Report |
| Petroleum Refining | U.S. Energy Information Administration | <i>Oil and Petroleum Products Explained</i> | Article |

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|--|--|---|---------|
| Petroleum Refining | Texas Office of Economic Development and Tourism | <i>Petroleum Refining & Chemical Products</i> | Article |
| Plastics | City of Houston | <i>Houston Recycling Collaboration</i> | Article |
| Plastics | ExxonMobil | <i>ExxonMobil Starts Operations at Large-Scale Advanced Recycling Facility</i> | Article |
| Plastics | TPC INC | <i>What is Urethane and How Is It Used Around the World Today?</i> | Article |
| Business Services & Corporate Headquarters | Austin American-Stateman | <i>Texas Leads Nation with 55 Companies on Annual Fortune 500 List</i> | Article |
| Business Services & Corporate Headquarters | Texas Office of Economic Development and Tourism | <i>Fortune 500 Companies in Texas</i> | Article |
| Business Services & Corporate Headquarters | Office of the Texas Governor | <i>Texas Leads the Nation As Home To The Most Fortune 500 Companies</i> | Article |
| Business Services & Corporate Headquarters | Dallas Chamber | <i>Major Companies and Headquarters</i> | Article |
| Financial Services | PR Newswire | <i>Comerica Bank Unveils Plans for Business & Innovation Hub in Frisco, Texas</i> | Article |
| Financial Services | The University of Texas at San Antonio | <i>UTSA establishes new hub to improve management of digital assets</i> | Article |
| Financial Services | Texas Office of Economic Development and Tourism | <i>Texas Financial Services Industry</i> | Article |
| Financial Services | Texas Office of Economic Development and Tourism | <i>Texas & Mexico Trade & FDI</i> | Article |
| Metal Mining | Center for Strategic and International Studies | <i>Elevating the Role of Critical Minerals for Development and Security</i> | Article |
| Metal Mining | Texas Comptroller | <i>Rare Earth Elements Supply Chain</i> | Article |
| Metal Mining | Texas State Historical Association | <i>Mineral Resources and Mining</i> | Article |
| Metal Mining | Texas Almanac | <i>Nonpetroleum Minerals</i> | Article |
| Metal Mining | Bureau of Economic Geology | <i>Metallic Ore Resources</i> | Article |
| Metal Mining | University of Texas at Austin | <i>New Mining Technology Uses CO2 as Tool to Access Critical Minerals</i> | Article |
| Nonmetal Mining | Texas State Historical Association | <i>Mineral Resources and Mining</i> | Article |
| Nonmetal Mining | Houston Chronicle | <i>West Texas Fracking Causes Such Demand for Sand that Mining Industry Has Gone Mobile to Produce it</i> | Article |
| Transportation & Logistics | Texas Office of Economic Development and Tourism | <i>Texas Trade and FDI</i> | Report |

| | | | |
|--------------------------------------|------------------------------------|--|----------|
| Distribution and E-Commerce | Texas A&M University | Global Supply Chain Laboratory | Website |
| Distribution and E-Commerce | Borderplex Alliance | <i>2025 Ascend Plan</i> | Strategy |
| Distribution and E-Commerce | ITS Distribution | <i>ITS Logistics Expands into Dallas-Fort Worth, Now Features 3 Million Square Feet of Total US Distribution Space</i> | Article |
| Distribution and E-Commerce | Port Houston | <i>E-Commerce Triggering Need For Distribution Centers Near Port Houston</i> | Article |
| Distribution and E-Commerce | Warehouse Automation | <i>Walmart to Scale Automated Facilities</i> | Article |
| Transportation and Aviation Services | Authentic Texas | <i>Aviation in Texas</i> | Article |
| Transportation and Aviation Services | Texas Department of Transportation | <i>The State of Highways in Texas</i> | Report |
| Transportation and Aviation Services | Texas Comptroller | <i>Texas' Ports of Entry: Economic Impact 2018</i> | Report |



Advanced Manufacturing in Texas

About the Advanced Manufacturing Sector

The Advanced Manufacturing sector includes businesses and industries that use innovative technologies and processes to create products of all kinds. The sector encompasses a broad range of manufacturing activities and outputs and is unified by the incorporation of automation, sensing, and other cutting-edge technologies in production. Within the Advanced Manufacturing sector, the state has identified four target clusters: Aerospace Vehicles, Aircraft, and Defense; Automotive; Computers, Electronics, and Semiconductors; and Production Technology and Heavy Machinery. Texas is a state of doers and makers, and this spirit is reflected in the strength of its Advanced Manufacturing sector. Fueled by its access to domestic and global markets, business-friendly climate, and world-class education programs, Texas is poised to design and build the products of the future.



Advanced Manufacturing Target Clusters



Aerospace Vehicles, Aircraft, and Defense



Automotive



Computers, Electronics, and Semiconductors



Production Technology and Heavy Machinery

Target Clusters Fast Facts

| | Workforce | GDP | Exports |
|------------------|---|--|--|
| Magnitude | 243K <i>Total Employment (2021)</i> | \$64B <i>GDP Contribution (2021)</i> | \$27B <i>Foreign Exports (2021)</i> |
| Share | 7% <i>Share of U.S. Cluster Total Employment (2021)</i> | 9% <i>Share of U.S. Cluster GDP (2021)</i> | 8% <i>Share of U.S. Cluster Foreign Exports (2021)</i> |
| Growth | 5% <i>Total Employment Growth (2011 – 21)</i> | 13% <i>GDP Growth (2011 – 21)</i> | 14% <i>Foreign Export Growth (2011 – 21)</i> |

Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Sector Opportunities

Strengths

Texas has a large, diverse advanced manufacturing industrial base.

The state has existing and emerging competitive advantages in a broad range of Advanced Manufacturing industries, spanning from aircraft engines, to automobiles, to semiconductors, to rocket engines.

Texas' manufacturing sector spans all stages of the value chain.

From research and product design, to the production of goods of all types, to high-value manufacturing supportive services, Texas' Advanced Manufacturing value chain is mature and inter-connected.

Texas is a destination for high-value, high-tech manufacturing.

In recent years, Texas' Advanced Manufacturing target clusters have shown significant growth in GDP despite slower growth in employment, indicating that the sector is moving toward higher-value products.

Opportunities

The state is well positioned to attract, retain, and grow a wide range of advanced manufacturing businesses.

Texas' strong supply chains and concentration of manufacturing businesses can continue to spur growth in the sector.

Complex manufacturing is expected to grow in Texas.

Texas is expected to become an international hotbed of complex, tech-enabled manufacturing, including aerospace, automotive, semiconductor, and electronic computer manufacturing.

The state can continue to invest in the people, businesses, and technology that drive innovation in manufacturing.

By advancing R&D and workforce programming, Texas can build on recent productivity gains and define the cutting edge.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.



Advanced Manufacturing in Texas

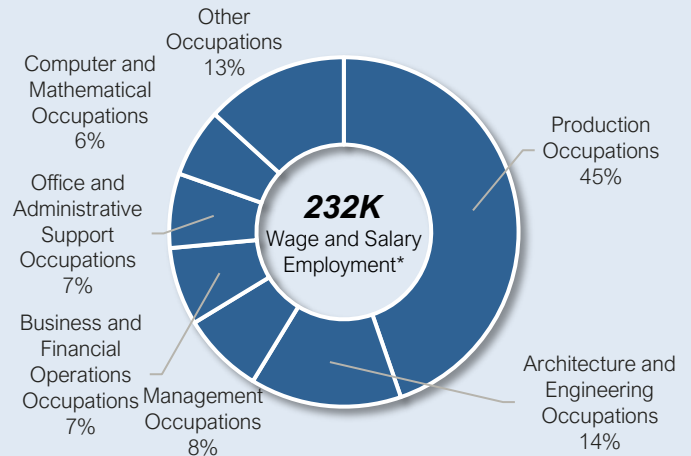


Target Sector Workforce Landscape

The workforce supporting Texas' Advanced Manufacturing target clusters is relatively specialized. As demonstrated in the chart at right, production occupations represent nearly half of total wage and salary employment in the target clusters, and architecture and engineering occupations represent another 15% of total cluster jobs. These clusters are also supported by operations staff, including management, business, and administrative occupations.

Texas' Advanced Manufacturing target clusters require a skilled workforce with a strong understanding of mathematics, computers, electronics, mechanics, and production. In recent years, technological knowledge and skill areas, such as computers, electronics, and programming, have grown in importance to Advanced Manufacturing target clusters. Top occupations and competencies for the target clusters are identified in the tables below.

Workforce Distribution by Occupation Type (2021)



Key Detailed Occupations

| Top Detailed Occupations by Employment (2021) | Emp. (2021) |
|---|-------------|
| Assemblers and Fabricators | 47,140 |
| Metal Workers and Plastic Workers | 28,490 |
| Engineers | 25,210 |
| Other Production Occupations | 20,390 |
| Computer Occupations | 14,300 |

| Top Detailed Occupations by Jobs Added (2018-21) | Jobs Added (2018-21) |
|--|----------------------|
| Other Production Occupations | 4,490 |
| Business Operations Specialists | 1,930 |
| Material Moving Workers | 1,640 |
| Assemblers and Fabricators | 1,420 |
| Operations Specialties Managers | 540 |

Key Competencies

| Top In-Demand Competency Areas (2021) | | |
|---------------------------------------|---------------------------|-----------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | English Language | Critical Thinking |
| 2 | Mathematics | Active Listening |
| 3 | Computers and Electronics | Reading Comprehension |
| 4 | Production and Processing | Speaking |
| 5 | Mechanical | Monitoring |

| High Growth Competency Areas (2018-21) | | |
|--|-------------------------------|--------------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Administration and Management | Quality Control Analysis |
| 2 | Mechanical | Social Perceptiveness |
| 3 | Computers and Electronics | Complex Problem Solving |
| 4 | Public Safety and Security | Negotiation |
| 5 | Sales and Marketing | Programming |

Data Sources: IMPLAN, Data Library, Texas, (2018-21); Guidehouse Analysis

Workforce Themes



Specialized Workforce

Nearly half of all Advanced Manufacturing employees are in production occupations.



Technical Skillsets

Advanced Manufacturing businesses require a highly technical workforce.



Growth in Technology

Computers, electronics, and programming skills are growing in importance to the sector.

*Note: Wage and Salary Employment is a headcount of salaried or wage-earning employees. This figure does not include Proprietor Employment, which represents proprietors, partners, and tax-exempt cooperative members.



Advanced Manufacturing in Texas



Aerospace Vehicles, Aircraft, and Defense

Texas has a long history of leadership and innovation in the Aerospace Vehicles, Aircraft, and Defense cluster. From one-person planes to military helicopters to the world’s most powerful launch vehicle — aerospace products of all types are manufactured in Texas. The state’s growing aerospace supply chain, diverse workforce, and billions in research and development spending make it an ideal place to start and grow an aerospace and defense business.

The Aerospace Vehicles, Aircraft, and Defense cluster includes six industries and encompasses a variety of manufacturing-focused activities, including the production of airplanes, space vehicles, navigation instruments, and other aerospace equipment. Notably, the cluster does not include the air transportation industry, which is located within the Transportation and Aviation Services cluster.

The Northwest Texas and Metroplex regions are hubs of aerospace manufacturing in Texas. Northwest Texas — home to companies such as Pratt & Whitney and Howmet Aerospace — has a strong concentration of aircraft engine and engine parts businesses and employment. The Metroplex also has a well-established aircraft manufacturing industry, supported by businesses such as Textron, DRS Technologies, and Lockheed Martin.

Other regions have emerging competitive advantages within the cluster, such as the space manufacturing hub growing around SpaceX’s Starbase launch site and production facility in Boca Chica. Additionally, the Gulf Coast and South Texas regions have strength in complementary industries that bolster the growth of the Aerospace Vehicles, Aircraft, and Defense cluster, including aerospace maintenance, repair, and overhaul (MRO) operations and government aviation and defense.

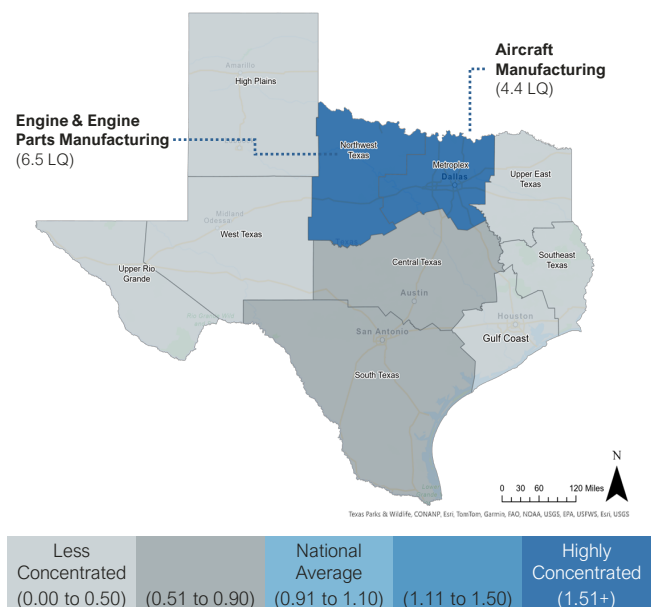
Texas is on the cutting edge of the technological and industry trends that are shaping the future of the cluster. Universities across the state are investing in research and development on advancements in new space, hypersonics, and advanced air mobility, among others. Texas is also home to multiple state-of-the-art aerospace labs and testing facilities, such as the National Aerothermochemistry and Hypersonics Laboratory at Texas A&M University.

Though cluster employment declined in the period from 2011 to 2021, employment is on the rise in recent years, growing approximately 7% from 2015 to 2021. The cluster is also expected to experience moderate growth in the next 10 years, with cluster GDP estimated to expand by 57% from 2022-32.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|--|--|---|
| Magnitude | 51K Total Employment (2021) | \$16B GDP Contribution (2021) | \$10B Foreign Exports (2021) |
| Share | 9% Share of U.S. Cluster Total Emp. (2021) | 11% Share of U.S. Cluster GDP (2021) | 15% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | -3% Total Employment Growth (2011 – 21) | 37% GDP Growth (2011 – 21) | 285% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Advanced Manufacturing in Texas



Automotive

For decades, Texas has been an essential player in the U.S. and global Automotive cluster. A strong manufacturing workforce, robust supply chain, and central location make Texas an attractive destination for manufacturers of products ranging from passenger vehicles to heavy-duty trucks. Private investment in research and development and a strong STEM workforce also keep Texas' auto manufacturers at the forefront of cluster trends and innovation.

The Automotive cluster includes 16 industries that cover a variety of auto manufacturing activities, including upstream activities such as metal foundries and custom roll forming; motor vehicle component manufacturing such as body manufacturing and engine manufacturing; and auto and truck manufacturing and assembly. Notably, the cluster does not include the sale of motor vehicles or ground transportation activities, both of which are located within the Transportation and Logistics sector.

South Texas has the highest automotive manufacturing concentration in the state, driven by a major Toyota manufacturing plant in San Antonio and bolstered by interconnectivity with automotive manufacturing activities in northern Mexico. Texas' automotive manufacturers are supported by a diverse network of suppliers; automotive parts suppliers like Toshiba, Aisin, Vitesco, Navistar, and Continental build the strength and sustainability of Texas' automotive cluster.

Other regions across the state are also building bustling concentrations of automotive manufacturing businesses. The Metroplex region has highly concentrated automobile manufacturing and automobile electronics industries and is home to major factories for General Motors and Peterbilt. In 2021, Tesla opened its Gigafactory in Central Texas, making the region a hub for next-generation automotive engineering and manufacturing.

Texas is driving the future of the Automotive cluster. University centers such as The University of Texas at Austin Center for Transportation Research and Texas A&M Transportation Institute are leading the conversation on cluster trends, including autonomous and electric vehicles. Companies across Texas are also pioneering self-driving technologies — operating driverless vehicles for transport and delivery.

Employment in the Automotive cluster in Texas grew 21% from 2011 to 2021. Productivity increased notably over the same period, with an 80% growth in GDP, likely due to the increased prevalence of automation and other advanced technology in automotive production processes. The cluster is expected to continue to grow, with a projected GDP growth of 59% from 2022 to 2032.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|--|---|---|
| Magnitude | 38K Total Employment (2021) | \$14B GDP Contribution (2021) | \$3B Foreign Exports (2021) |
| Share | 4% Share of U.S. Cluster Total Emp. (2021) | 8% Share of U.S. Cluster GDP (2021) | 4% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 21% Total Employment Growth (2011 – 21) | 80% GDP Growth (2011 – 21) | -30% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



| | | | | |
|-------------------------------------|----------------|------------------------------------|----------------|--------------------------------|
| Less Concentrated (0.00 to 0.50) | (0.51 to 0.90) | National Average (0.91 to 1.10) | (1.11 to 1.50) | Highly Concentrated (1.51+) |
|-------------------------------------|----------------|------------------------------------|----------------|--------------------------------|

Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Advanced Manufacturing in Texas



Computers, Electronics, and Semiconductors

The Texas Computers, Electronics, and Semiconductors cluster has a storied past and bright future. Texas is known for excellence in electronics; when asked to picture a calculator, many would think of the Texas Instruments TI series, an essential tool for generations of math students. Today, the Computers, Electronics, and Semiconductors cluster continues to flourish in Texas, due to the presence of major industry players, a strong pool of engineering talent, and strategic investments by the state.

The cluster includes 29 industries which span the computer, electronic, and semiconductor supply chain. Activities in this cluster include the production and assembly of electronics, computers, and semiconductors as well as the manufacturing of components such as wiring devices, fiber optic cables, carbon and graphite products, and other equipment.

Central Texas and the Metroplex are major hubs of the Computers, Electronics, and Semiconductors cluster in Texas. Central Texas is home to Dell, which was founded in a dorm room at The University of Texas at Austin, as well as other computer and semiconductor manufacturers including Samsung, National Instruments, Silicon Labs, and NXP. The Metroplex region also has a robust computer manufacturing industry and is home to a number of large businesses such as Texas Instruments.

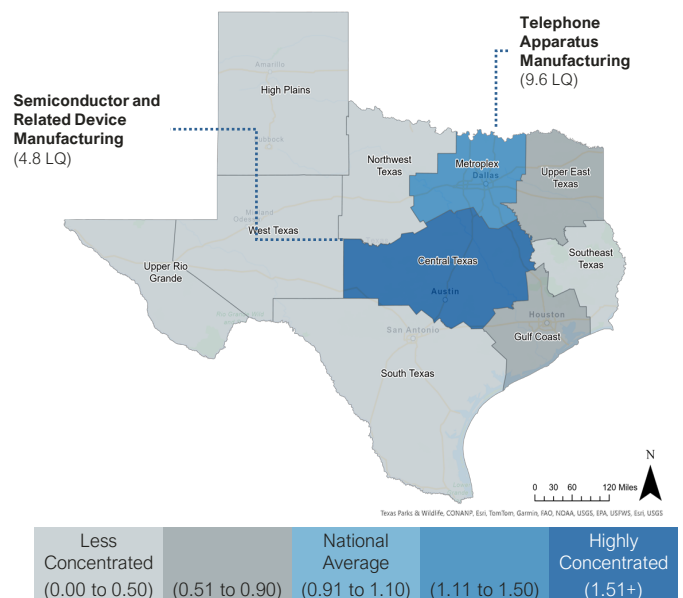
The semiconductor industry is a bright spot of growth within an already strong cluster. Texas has led the nation in semiconductor exports for 13 years. New and expanding companies are driving growth at the regional level, including Samsung, which is currently constructing a major manufacturing facility in Taylor. Sherman is also poised to become a chip manufacturing hub, with major investments in the region by Texas Instruments and GlobiTech. Significant federal and state investments will further accelerate semiconductor industry growth. In June 2023, Governor Abbott signed the Texas CHIPS Act to encourage semiconductor-related companies to expand in the state, further develop the expertise and capacity at Texas higher education institutions, and maintain the state's leadership in semiconductor manufacturing. The Texas CHIPS Act also established the Texas Semiconductor Innovation Consortium and the Texas Semiconductor Innovation Fund, to be administered by the Texas CHIPS Office — a newly formed division within the Texas Economic Development & Tourism Office.

Though cluster employment was largely flat from 2011 to 2021, the cluster is primed for future growth. The cluster is expected to grow steadily in the coming decade, with a projected GDP growth of 46% between 2022 and 2032.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|--|---|---|
| Magnitude | 85K Total Employment (2021) | \$23B GDP Contribution (2021) | \$8B Foreign Exports (2021) |
| Share | 9% Share of U.S. Cluster Total Emp. (2021) | 9% Share of U.S. Cluster GDP (2021) | 9% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 0% Total Employment Growth (2011 – 21) | -17% GDP Growth (2011 – 21) | -27% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Advanced Manufacturing in Texas



Production Technology and Heavy Machinery

The Production Technology and Heavy Machinery cluster is critical to the state, national, and global economy. Industries of all types rely on the products manufactured in the cluster, which range from the cranes that construct Texas' iconic skylines to the farm machinery that keeps food on our tables. The state's robust supply chain and large workforce make Texas an ideal location for Production Technology and Heavy Machinery businesses to locate and grow.

The Production Technology and Heavy Machinery cluster consists of 34 industries encompassing a broad range of technology and machinery types. Cluster industries include equipment production, such as farm machinery, mining machinery, and other industrial machinery, as well as upstream activities such as ball and roller bearing manufacturing, valve and fitting manufacturing, and fabricated metal manufacturing.

East Texas, particularly the Upper East, Southeast, and Gulf Coast regions, are hubs of production technology and heavy machinery manufacturing, with strength in the Air and Gas Compressor Manufacturing and Mining Machinery Manufacturing industries. South Texas is home to several Caterpillar manufacturing facilities in San Antonio, Schertz, Seguin, and Victoria. Other production technology and heavy machinery companies, including Komatsu, Parker Hannifin, JCB, and Johnson Controls, also maintain significant presences across the state.

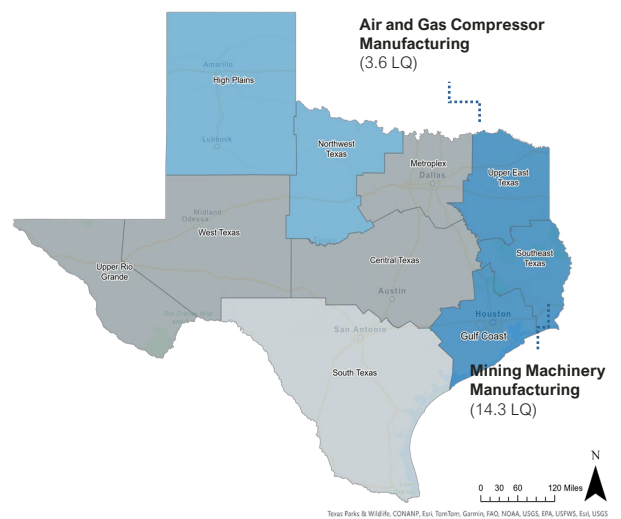
Production Technology and Heavy Machinery companies are driving innovation in Texas' Advanced Manufacturing sector. John Deere recently launched an innovation hub in Austin that will bring advanced technological solutions such as automation and autonomy to the agriculture industry. Innovative companies within the cluster come to Texas to pioneer state-of-the-art technologies that improve the efficiency of production and the effectiveness of heavy machinery, drawn in by Texas' pool of tech and engineering talent, startup community, leading universities, and software and data analytics expertise.

Between 2011 and 2021, the Texas Production Technology and Heavy Machinery cluster grew steadily in both employment and GDP. The cluster is also poised for future growth, with a projected 21% in GDP growth from 2022 to 2032. Industry players are continuing to make investments in the state, and Texas' growing population will drive demand for the production technology and heavy machinery required to expand and fortify the state's infrastructure.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|--|---|---|
| Magnitude | 70K Total Employment (2021) | \$11B GDP Contribution (2021) | \$6B Foreign Exports (2021) |
| Share | 7% Share of U.S. Cluster Total Emp. (2021) | 7% Share of U.S. Cluster GDP (2021) | 7% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 10% Total Employment Growth (2011 – 21) | 8% GDP Growth (2011 – 21) | 1% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



| Less Concentrated | National Average | Highly Concentrated |
|-------------------|------------------|---------------------|
| (0.00 to 0.50) | (0.91 to 1.10) | (1.51+) |

Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Energy Evolution in Texas

About the Energy Evolution Sector

The Energy Evolution sector is centered on the production and transmission of energy of all kinds, including oil, gas, and renewables. The sector composition reflects Texas' all-of-the-above energy strategy and positions the state to maintain its role as a global energy leader for generations to come. Within the Energy Evolution sector, the state has identified three target clusters: Electric Power Generation and Transmission; Oil and Gas Extraction, Production, and Transportation; and Renewables.

Texas' Energy Evolution sector powers the state, the country, and the world. Texas is the leading producer of oil, gas, wind, and utility-scale solar energy in the U.S. and home to large energy companies and innovative startups alike. Texas is internationally recognized for its strength in energy, and the sector will continue to be a cornerstone of our economy in the coming decades.



Energy Evolution Target Clusters

Target Clusters Fast Facts

- Electric Power Generation and Transmission**
- Oil and Gas Extraction, Production, and Transportation**
- Renewables**

| | Workforce | GDP | Exports |
|------------------|--|---|---|
| Magnitude | 819K <i>Total Employment (2021)</i> | \$390B <i>GDP Contribution (2021)</i> | \$58B <i>Foreign Exports (2021)</i> |
| Share | 15% <i>Share of U.S. Cluster Total Employment (2021)</i> | 22% <i>Share of U.S. Cluster GDP (2021)</i> | 42% <i>Share of U.S. Cluster Foreign Exports (2021)</i> |
| Growth | 0% <i>Total Employment Growth (2011 – 21)</i> | -1% <i>GDP Growth (2011 – 21)</i> | 152% <i>Foreign Export Growth (2011 – 21)</i> |

Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Sector Opportunities

Strengths

- Texas is a global leader in the energy sector.**
Our state has a long legacy as an energy sector leader. Texas represents over 40% of foreign exports produced by industries within the Energy Evolution target clusters across the U.S.
- Texas' rich resources and mature infrastructure support the success of energy businesses of all types.**
Texas' availability of land, network of infrastructure, and diversity of resources position the state to lead in a mix of energy clusters.
- Texas is currently leading in oil, gas, wind, and utility-scale solar energy production.**
In addition to being the top oil- and gas-producing state, Texas leads the nation in wind energy production and is growing in solar energy.

Opportunities

- The state can continue to invest in Texas' energy leadership.**
To remain a global leader in energy, the state must continue to bolster critical infrastructure that supports the growth of both historically strong and emerging energy clusters.
- The state can continue to support diversified energy growth.**
As global demand for energy rises, the state can invest in the growth of a variety of energy sources, including oil, gas, and renewables.
- Texas is well-positioned to lead in hydrogen, geothermal, battery storage, and other renewables.**
Texas can grow as a leader by continuing to expand its renewables and support new industries such as battery storage and hydrogen.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.



Energy Evolution in Texas

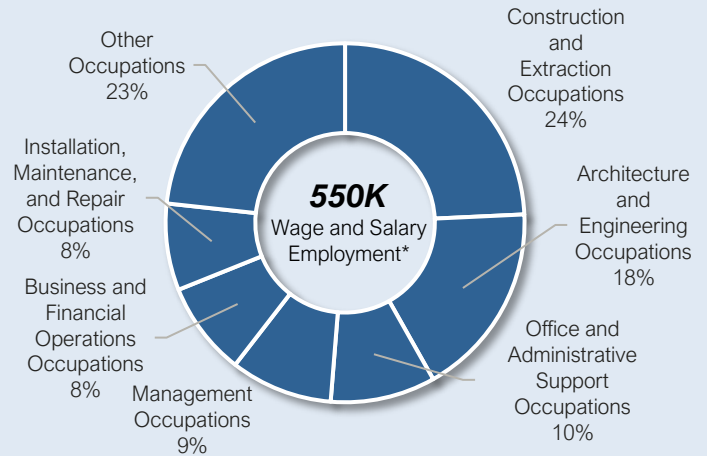


Target Sector Workforce Landscape

Texas' Energy Evolution sector offers a wide range of employment opportunities. The target clusters within the sector employ a diverse workforce, drawing from a variety of occupation areas including construction, extraction, architecture, engineering, administration, and management. Top occupations in the target clusters support the design, construction, and operation of machinery used in extracting natural resources, including construction trades workers, engineers, and extraction workers.

The most in-demand competency areas for Energy Evolution clusters include customer and personal service, mathematics, and the English language. In recent years, knowledge and skill areas that support problem-solving and decision-making, such as systems analysis and evaluation, are growing in importance to Energy Evolution clusters.

Workforce Distribution by Occupation Type (2021)



Key Detailed Occupations

| Top Occupations by Emp. (2021) | Emp. (2021) |
|---|-------------|
| Construction Trades Workers | 65,170 |
| Engineers | 53,780 |
| Extraction Workers | 41,300 |
| Business Operations Specialists | 37,110 |
| Other Installation, Maintenance, & Repair Occupations | 30,800 |

| Top Occupations by Jobs Added (2018-21) | Jobs Added (2018-21) |
|--|----------------------|
| Business Operations Specialists | 7,940 |
| Occupational Health & Safety Specialists & Technicians | 2,920 |
| Top Executives | 2,200 |
| Mathematical Science Occupations | 350 |
| Advertising, Marketing, Promotions, Public Relations, & Sales Managers | 290 |

Key Competencies

| Top In-Demand Competency Areas (2021) | | |
|---------------------------------------|-------------------------------|-----------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Customer & Personal Service | Active Listening |
| 2 | Mathematics | Critical Thinking |
| 3 | English Language | Reading Comprehension |
| 4 | Administration and Management | Speaking |
| 5 | Mechanical | Monitoring |

| High Growth Competency Areas (2018-21) | | |
|--|-------------------------------|-------------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Sales and Marketing | Systems Analysis |
| 2 | Administration and Management | Speaking |
| 3 | Computers and Electronics | Systems Evaluation |
| 4 | Customer & Personal Service | Writing |
| 5 | Design | Complex Problem Solving |

Data Sources: IMPLAN, Data Library, Texas, (2018-21); Guidehouse Analysis

Workforce Themes



Diverse Workforce

Energy Evolution businesses employ a wide variety of occupational types.



Engineering & Construction

Energy Evolution industries rely on a large engineering and construction workforce.



Growth in Optimization

Systems evaluation and problem-solving are growing in importance to the sector.

*Note: Wage and Salary Employment is a headcount of salaried or wage-earning employees. This figure does not include Proprietor Employment, which represents proprietors, partners, and tax-exempt cooperative members.



Energy Evolution in Texas



Electric Power Generation and Transmission

The Electric Power Generation and Transmission cluster is crucial to the Energy Evolution sector, as it converts the state's energy sources to usable power. Texas is the only state in the contiguous U.S. with its own power grid, which provides roughly 90% of the state's electricity. Strong energy demand combined with abundant and diverse natural resources for production, including oil, gas, and renewable sources, make Texas a prime location to grow an energy business.

The Electric Power Generation and Transmission cluster includes nine industries: eight industries representing electric power generation from different energy sources (biomass, fossil fuel, geothermal, hydroelectric, nuclear, solar, wind, and others) and one industry focused on power transmission and distribution. This cluster does not include the extraction of the raw materials that provide the electric power or any supporting activities. For example, the extraction of natural gas falls under the Oil and Gas Extraction, Production, and Transportation cluster. Notably, some industries in this cluster overlap with industries within the Renewables cluster.

Texas' electric power landscape is unlike that of any other state. It is served by a deregulated energy market, which allows providers to compete to provide the best and most efficient energy plans to customers. A network of power companies serve Texas' regions, with some of the largest providers including Oncor (North and West Texas), AEP (Central and South Texas), and CenterPoint (Gulf Coast). Texas' unique energy structure and competitive power prices are beneficial to industries of all types, particularly energy-intensive industries such as manufacturing.

Nearly all of Texas' regions have a competitive advantage in the Electric Power Generation and Transmission cluster; however, each region offers a unique specialization. West Texas and the High Plains, for example, have a very high concentration of wind power generation, while Upper East Texas is a hub of fossil fuel energy generation.

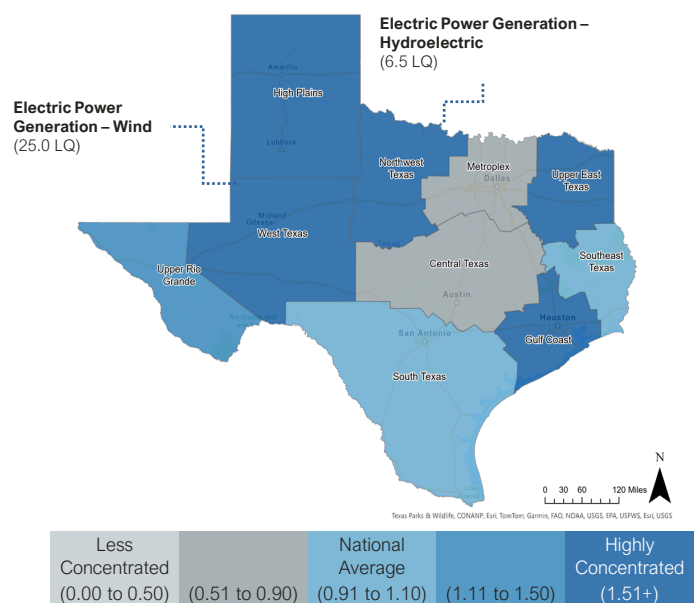
Texas is well-positioned for power generation and energy grid innovation, with various universities conducting research in this area. For example, Texas A&M University has a Smart Grid Center dedicated to researching optimal ways to store and transmit energy, and The University of Texas at Austin is partnering with the City of Austin and Austin Energy to launch a demonstrative smart grid program within the city.

The Electric Power Generation and Transmission cluster grew moderately from 2011 to 2021 and is projected to experience an 11% growth in GDP from 2022 to 2032.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|---|---|--|
| Magnitude | 43K Total Employment (2021) | \$26B GDP Contribution (2021) | \$0B Foreign Exports (2021) |
| Share | 10% Share of U.S. Cluster Total Emp. (2021) | 9% Share of U.S. Cluster GDP (2021) | 10% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 8% Total Employment Growth (2011 – 21) | 10% GDP Growth (2011 – 21) | -45% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Energy Evolution in Texas



Oil and Gas Extraction, Production, and Transportation

In 1901, the discovery of the Spindletop gusher in Beaumont marked the beginning of the Oil Age in Texas. Throughout the early 20th century, wildcaters across the state began finding major oil deposits from West Texas to the Gulf Coast, transforming Texas into the globally recognized oil and gas powerhouse it is today. An abundance of natural resources, skilled workforce, and mature network of cluster infrastructure support Texas' international leadership in oil and gas production and transportation.

The Oil and Gas Extraction, Production, and Transportation cluster consists of six industries, including the manufacturing of oil and gas field machinery and equipment, drilling and extraction of oil and gas, pipeline transportation, and other support activities.

If Texas were a country, it would be the world's fifth-largest oil producer and the third-largest producer of natural gas. The Permian Basin, which underlies West Texas and parts of surrounding regions, and the Eagle Ford Shale, which spans from South Texas to the edge of Upper East Texas, are home to some of the largest oil reserves in the world. Additionally, the coastal regions, especially the Gulf Coast, are hubs of offshore oil production. The state is connected by strong networks of cluster infrastructure, including 586,690 miles of oil and gas pipelines and 17,000 miles of natural gas pipelines.

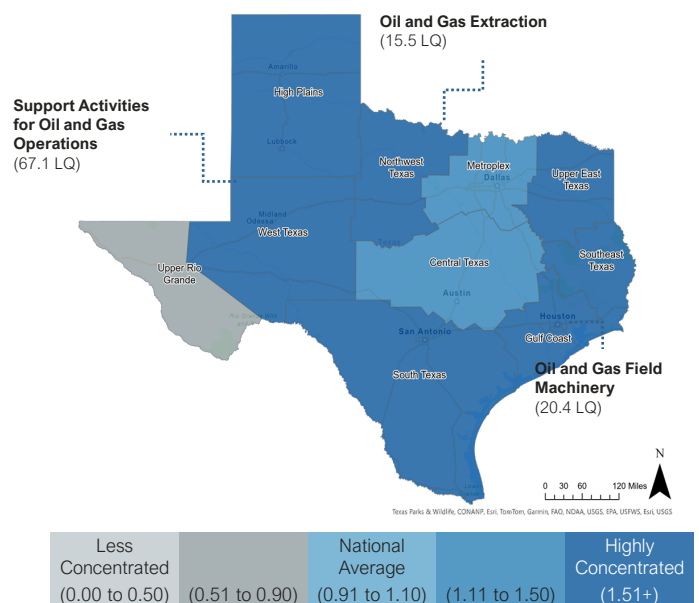
While many clusters are concentrated in one or two regions in Texas, Oil and Gas Extraction, Production, and Transportation is strong in nearly every region in the state. Different regions specialize in different components of the value chain. For example, the Gulf Coast region is a hub of oil and gas field machinery manufacturing, whereas West Texas is focused on extraction and supporting activities. Texas' natural resources have attracted large multinational oil and gas producers such as Chevron and Shell and enabled home-grown businesses such as Pioneer Natural Resources and XTO Energy to start up and expand in the Lone Star State. In most regions, the cluster's high concentration is driven by extraction and supporting activities, though the Gulf Coast and some other regions have highly concentrated field machinery manufacturing industries as well.

Texas is also a leader in oil and gas innovation. With an increasing global demand for sustainable energy, Texas' oil and gas producers have implemented practices like thermal desorption and oil reclamation, reducing the environmental impacts of the production process. Though the Oil and Gas Extraction, Production, and Transportation cluster saw minor drops in employment from 2011 to 2021, Texas remains a global cluster leader and is expected experience future growth. The cluster is projected to grow in both employment (20%) and GDP (43%) from 2022 to 2032.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|---|--|--|
| Magnitude | 550K Total Employment (2021) | \$181B GDP Contribution (2021) | \$58B Foreign Exports (2021) |
| Share | 19% Share of U.S. Cluster Total Emp. (2021) | 35% Share of U.S. Cluster GDP (2021) | 45% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | -4% Total Employment Growth (2011 – 21) | -5% GDP Growth (2011 – 21) | 157% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Energy Evolution in Texas



Renewables

Texas is rich not only in oil and gas, but also in a wide range of renewable energy sources, including solar, wind, hydroelectric, and biofuels. The state's skilled labor force, abundance of natural resources, and plentiful land make Texas an ideal place to grow a renewable energy business.

The Renewables cluster includes 16 industries, encompassing renewable power produced via a variety of sources — biomass, geothermal, hydroelectric, solar, wind, and others — along with support activities for renewable energy sources such as construction of power and communication structures and turbine and generator manufacturing.

Since 2006, Texas has been the nation's leading producer of renewable energy, harnessing the power of its natural resources and geographies to generate more wind and solar power than any other state in the U.S. With energy demands in Texas and the country on the rise, Texas' all-of-the-above approach to energy production keeps the state powered up and builds our nation's energy independence.

Though all 10 of Texas' regions boast a competitive advantage in the Renewables cluster, each region offers a unique cluster strength. West Texas and its adjacent regions are leaders in solar and wind power. Regions in East Texas — and particularly Southeast Texas — have strength in other types of renewable energy such as biomass, supported by the area's agriculture and logging industries. Investments by major multinational renewable companies, such as a large wind farm built by E.ON in South Texas, as well as Texas-grown startups like Criterion Energy Partners in Houston, contribute to a rapidly growing Renewables cluster in the state.

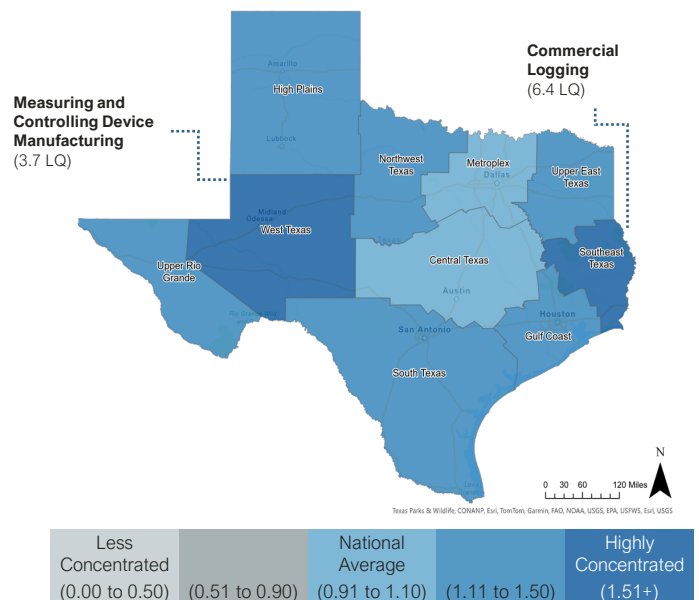
New innovations in renewable energy pose an opportunity for companies in the cluster. Breakthroughs like turbine-solar power units and solar canals pave the way for more efficient renewable energy production, and university programs like The University of Texas at Austin Energy Institute and the University of Houston's Energy and Innovation Division are investing in research into novel technologies to harness new power sources.

The cluster experienced moderate gains in employment (9%) and GDP (19%) from 2011 to 2021. The cluster is anticipated to show similar growth patterns in the coming decade, with a projected employment growth of 9% and GDP growth of 14% from 2022 to 2032.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|---|--|---|
| Magnitude | 260K Total Employment (2021) | \$43B GDP Contribution (2021) | \$1B Foreign Exports (2021) |
| Share | 10% Share of U.S. Cluster Total Emp. (2021) | 10% Share of U.S. Cluster GDP (2021) | 6% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 9% Total Employment Growth (2011 – 21) | 19% GDP Growth (2011 – 21) | -23% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Food and Livestock Products in Texas

About the Food and Livestock Products Sector

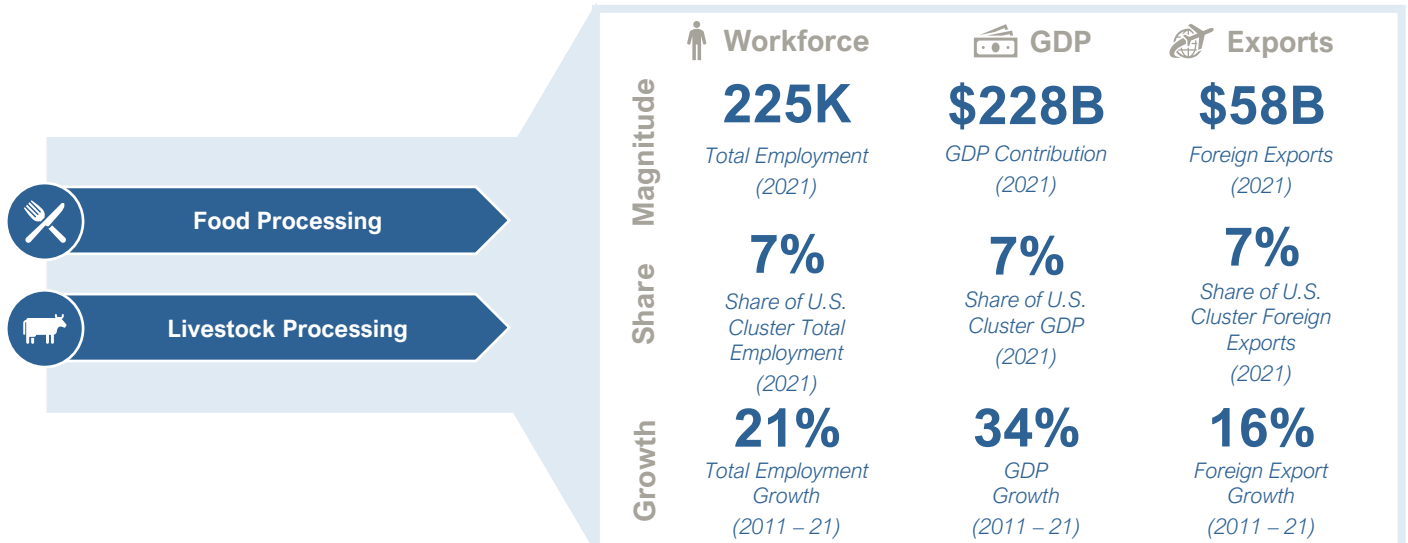
The Food and Livestock Products sector is focused on creating a wide variety of high-quality food products ranging from beef and poultry to tortillas and snack foods. The sector is critical to the food supply in Texas and beyond and is linked to a number of other target sectors, including the Advanced Manufacturing and Life Sciences and Biotechnology sectors. Within the Food and Livestock Products sector, the state has identified two target clusters: Food Processing and Livestock Processing.

With large tracts of affordable land well-suited to food manufacturing and livestock processing, Texas is a promising destination for food companies looking to grow and expand. Sector leaders and innovators come to Texas to design and produce some of the best food products our country has to offer.



Food and Livestock Products Target Clusters

Target Clusters Fast Facts



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Sector Opportunities

Strengths

Texas' natural resources support food and livestock growth.
Located in the cattle belt with a large availability of arable land, the state's natural resources make it suitable for the sector's end-to-end production.

Texas provides the sector access to a robust industrial ecosystem.
Access to retailing partners, production facilities, and customers have supported recent employment, GDP, and foreign export growth in the Food and Livestock Products sector.

Texas leads the nation in livestock processing, with strengths in beef and poultry production.
Our state is home to more beef cows than any other state in the U.S., thanks to our natural resources and history of livestock processing.

Opportunities

The state can promote itself as a top destination for food and livestock processing facilities.
A strong workforce, abundant raw materials, and access to transportation makes Texas a prime location for food processing.

The state can continue investing in Texas' global leadership in food and livestock products.
The state can leverage Texas' proximity to international markets to bolster foreign exports and further grow this sector.

Advancement in agricultural technology will support the next generation of Texas' food and livestock clusters.
Research and development in food and animal science are growing across the state and driving sector innovation.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.



Food and Livestock Products in Texas

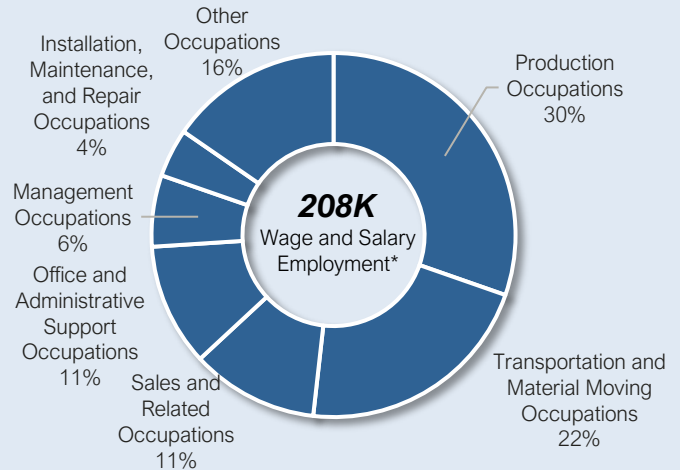


Target Sector Workforce Landscape

Texas' Food and Livestock Products target clusters are largely supported by occupations that produce, move, and sell food products, including production occupations, transportation and material moving occupations, and sales and related occupations. The top occupation by employment is food processing workers, indicating that the sector is relatively specialized.

In-demand competency areas for Food and Livestock Products target clusters include customer and personal service, English language, and mathematics. Competency areas related to technology and communications are growing in importance in the sector, including computers and electronics, communications and media, and telecommunications.

Workforce Distribution by Occupation Type (2021)



Key Detailed Occupations

| Top Occupations by Emp. (2021) | Emp. (2021) |
|--|-------------|
| Food Processing Workers | 31,190 |
| Material Moving Workers | 30,710 |
| Other Production Occupations | 24,430 |
| Sales Representatives, Wholesale and Manufacturing | 15,280 |
| Motor Vehicle Operators | 11,360 |

| Top Occupations by Jobs Added (2018-21) | Jobs Added (2018-21) |
|---|----------------------|
| Material Moving Workers | 6,240 |
| Food and Beverage Serving Workers | 1,360 |
| Business Operations Specialists | 1,300 |
| Top Executives | 1,270 |
| Food Processing Workers | 1,150 |

Key Competencies

| Top In-Demand Competency Areas (2021) | | |
|---------------------------------------|-------------------------------|-----------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Customer & Personal Service | Active Listening |
| 2 | English Language | Speaking |
| 3 | Mathematics | Critical Thinking |
| 4 | Production and Processing | Reading Comprehension |
| 5 | Administration and Management | Monitoring |

| High Growth Competency Areas (2018-21) | | |
|--|---------------------------|--------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Transportation | Systems Evaluation |
| 2 | Computers and Electronics | Active Listening |
| 3 | Communications and Media | Systems Analysis |
| 4 | Building and Construction | Time Management |
| 5 | Telecommunications | Writing |

Data Sources: IMPLAN, Data Library, Texas, (2018-21); Guidehouse Analysis

Workforce Themes



Product-Focused

Occupations in this sector are largely focused on the production, movement, and sale of goods.



Efficient Communication

Competencies that enable communication (e.g., media, telecommunications) are growing.



Growth in Optimization

Systems evaluation and analysis are growing in importance to the sector.

*Note: Wage and Salary Employment is a headcount of salaried or wage-earning employees. This figure does not include Proprietor Employment, which represents proprietors, partners, and tax-exempt cooperative members.



Food and Livestock Products in Texas



Food Processing

Texas' Food Processing cluster represents a crucial link in the supply chain that gets food to tables across the country. The cluster is focused on the safe and efficient production of food products of all types. Texas is home to manufacturers of products from every level of the food pyramid, and our rich natural resources and experienced workforce make the state a compelling location for food production and processing companies looking to start and grow.

The Food Processing cluster consists of 42 different industries, covering a wide range of food and beverage products. Cluster industries include the processing of agricultural products, such as the milling of flour and corn and the refining of fats and oils as well as the manufacturing and packaging of food items, including cheese, canned fruits and vegetables, and confectionery. Notably, the cluster does not include the manufacturing of food product machinery, which falls in the Agricultural Science and Technology cluster.

Texas has a strong network of food and beverage processing businesses across the state. Texas' strong agriculture industry and supply chain have helped grow Texas-based food manufacturers like H-E-B and Frito-Lay. Texas has also attracted major investments from companies like Coca-Cola, Kraft Heinz, and GEA, which recently opened a large facility in Frisco. Each region in Texas brings a unique competitive advantage, with areas of specialization including flour milling and cheese manufacturing in the High Plains region and butter manufacturing in Upper East Texas.

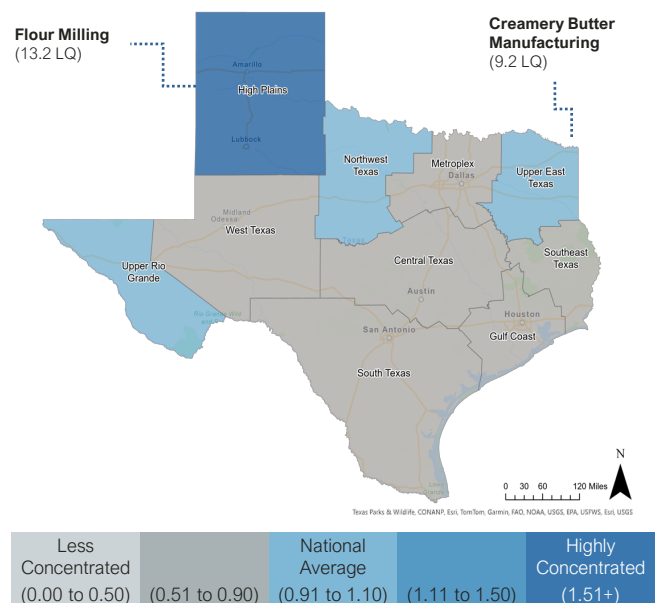
Texas is at the forefront of food processing innovation, with leading programs at universities across the state, including Texas A&M University's Department of Food Science and Technology. Food processing is a rapidly evolving industry, and Texas companies are on the cutting edge. New technologies such as high-pressure processing, aseptic processing, and 3D printing are resulting in leaps forward for the cluster and leading to lower costs, extended product shelf life, and improved efficiency. The cluster is also supported by innovation assets such as the Austin Technology Incubator, which has identified Food & Agtech as a focus area and connects entrepreneurs with the expertise, funding, and relationships needed to succeed and accelerate growth.

The Food Processing cluster experienced moderate growth in both employment (21%) and GDP (32%) from 2011 to 2021 and is expected to continue its upward trajectory, with a projected GDP growth of 43% from 2022 to 2032.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|--|---|---|
| Magnitude | 177K Total Employment (2021) | \$32B GDP Contribution (2021) | \$4B Foreign Exports (2021) |
| Share | 7% Share of U.S. Cluster Total Emp. (2021) | 7% Share of U.S. Cluster GDP (2021) | 6% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 21% Total Employment Growth (2011 – 21) | 32% GDP Growth (2011 – 21) | -2% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Food and Livestock Products in Texas



Livestock Processing

While Texas is home to a diverse array of cuisines, many associate Texas' food scene with one item: barbecue. In Texas, cattle are both an iconic fixture in the state's landscape and an important source of food. Texas' competitive advantage in livestock processing is supported by its native livestock species, such as the Longhorn and Beefmaster, which are bred to thrive in the state's climate. An abundance of land suitable for grazing has made Texas world-renowned for its meat production and established the state as an attractive destination for livestock processing companies.

The Livestock Processing cluster consists of four industries, all of which relate to the production and processing of meat and poultry. These include the processing of animals and poultry as well as the processing of the animals' meat and meat byproducts.

Texas is home to more cattle than any other state and leads the nation in beef production. Though many livestock companies are locally or regionally based, Texas is also home to larger livestock processing companies, including John Soules Foods, Lone Star Beef Processors, and STX Beef Company as well as major food suppliers such as Sysco and H-E-B. Every region in Texas produces some form of livestock, but four of the state's regions have particularly high concentrations of livestock activity. The High Plains and Northwest Texas regions are known for their cattle production, while Upper East Texas and Southeast Texas are hubs for poultry processing. Notably, the Central Texas region is home to 44 Farms, considered one of the nation's premier Black Angus producers.

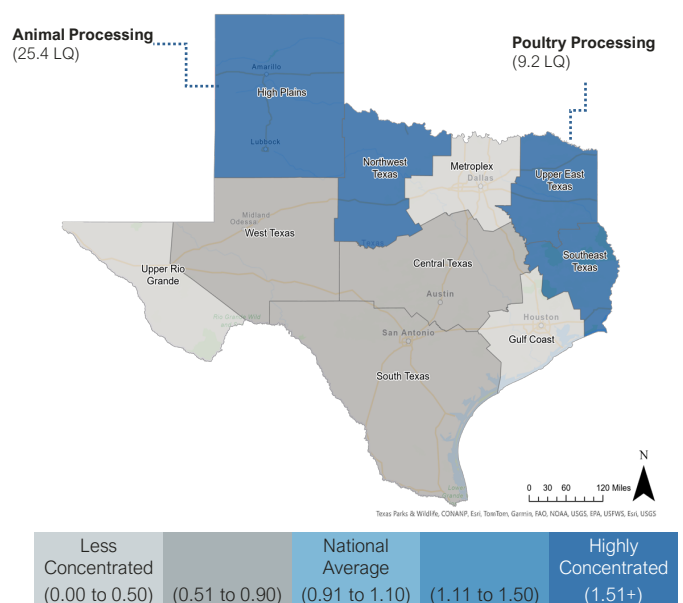
The Livestock Processing cluster benefits from breakthroughs in agricultural and medical industries, both of which Texas has in abundance. Ranchers in some areas are adopting more efficient and renewable feed made of sugar cane; AI and improved data tools are helping monitor livestock inventory and health; and novel antibiotics and medical breakthroughs are preventing disease and ensuring livestock remain healthy.

The Livestock Processing cluster grew sizably from 2011 to 2021 in both employment (20%) and GDP (35%). Notably, foreign exports grew a whopping 68% as Texas livestock products gain popularity and recognition across the globe. The Texas Department of Agriculture supports the export of livestock and other agricultural products through the State Trade Expansion Program (STEP) and international marketing efforts showcasing Texas products and businesses. Buoyed by these initiatives, the cluster is anticipated to continue along this upward trajectory, with a projected 43% rise in GDP from 2022 to 2032.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|--|---|--|
| Magnitude | 49K Total Employment (2021) | \$4B GDP Contribution (2021) | \$2B Foreign Exports (2021) |
| Share | 9% Share of U.S. Cluster Total Emp. (2021) | 9% Share of U.S. Cluster GDP (2021) | 11% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 20% Total Employment Growth (2011 – 21) | 35% GDP Growth (2011 – 21) | 68% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Hospitality, Tourism, and Culture in Texas

About the Hospitality, Tourism, and Culture Sector

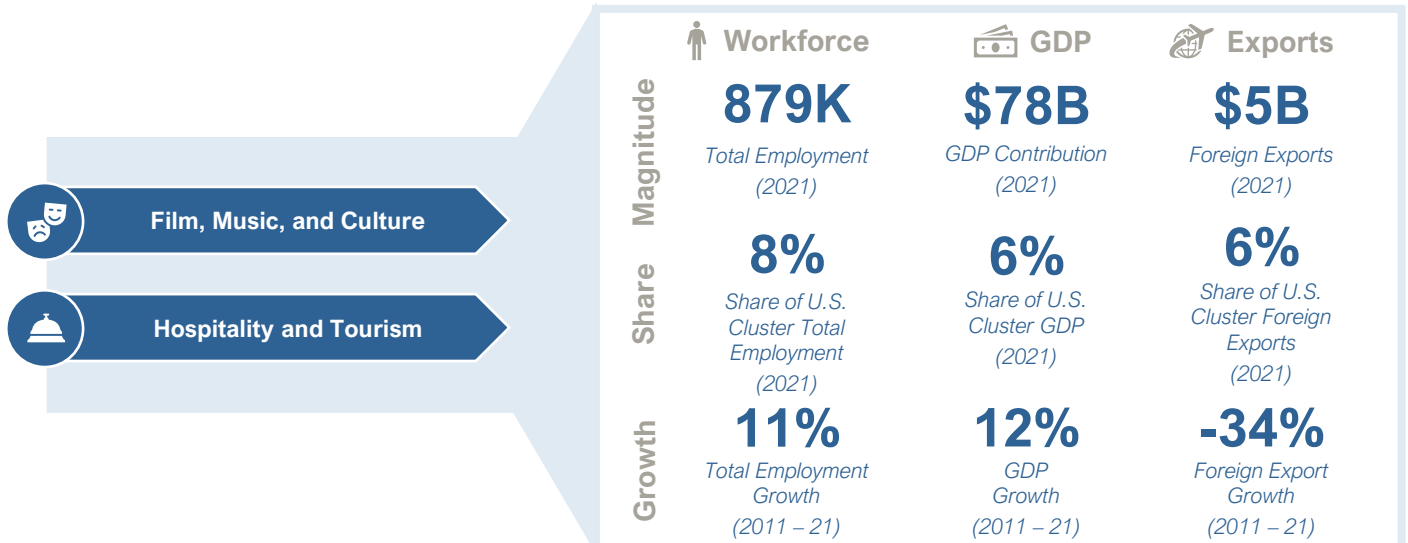
The Hospitality, Tourism, and Culture sector is focused on the provision of services and experiences to entertain and accommodate Texans and visitors alike. This sector is built upon Texas' rich diversity of experiences, events, and geographies. Within the Hospitality, Tourism, and Culture sector, the state has identified two target clusters: Film, Music, and Culture; and Hospitality and Tourism.

Texas' iconic locations, skilled workforce, competitive incentive programs, and unique cultural attractions make our state a top destination for Hospitality, Tourism, and Culture businesses. The sector is essential to the economy not only as a creator of jobs and opportunity, but also as a promoter of the Texas brand and identity.



Hospitality, Tourism, & Culture Target Clusters

Target Clusters Fast Facts



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Sector Opportunities

Strengths

Texas' culture and brand identity is globally recognized.

The Texas brand is iconic, making our state a premier destination for tourism and creative industries and businesses.

Texas is home to a diversity of iconic locations.

From our varying landscapes of prairies, canyons, rivers, lakes, and forests to the glistening lights of our big cities, our diversity draws visitors from across the globe and provides ample filming locations.

Texas currently has strengths in hospitality and tourism services.

The state has a high concentration of sector services including scenic transportation, travel arrangements, and photography, which help cultivate Texas' already strong brand.

Opportunities

The state can continue marketing Texas as a destination.

To support economic growth through tourism and creative industries, the state can continue marketing Texas as a top destination for travel, music, and film.

The state can continue promoting its geographic diversity.

Texas can continue to raise awareness about tourism opportunities and invest in major events and attractions across all regions.

Creative industries are expected to grow and thrive in Texas.

Industries with creativity at their core, including architecture, radio and television, advertising, film and video, and publishing, are expected to grow in coming years.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.



Hospitality, Tourism, and Culture in Texas

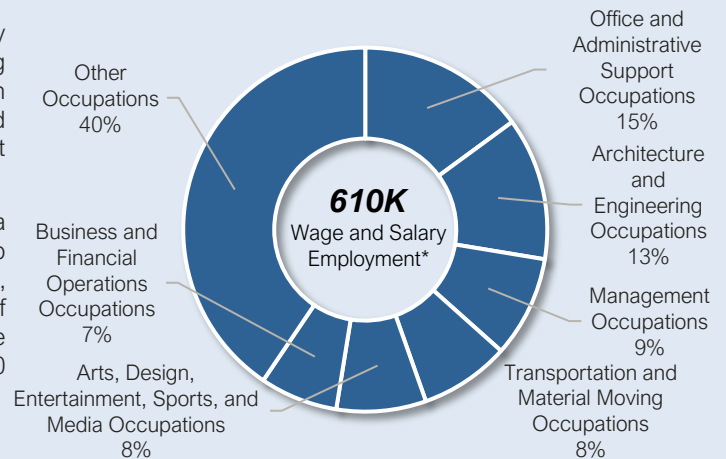


Target Sector Workforce Landscape

Texas' Hospitality, Tourism, and Culture target clusters employ a very diverse workforce, with no occupational group representing more than 15% of total employment. Around 20% of jobs in this sector support arts and design, including architecture and engineering occupations and arts, design, and entertainment occupations.

Hospitality, Tourism, and Culture target clusters require a workforce that excels in communication and customer service; top in-demand competencies include customer and personal service, English language, active listening, and speaking. Knowledge of computers and electronics have grown in importance to the Hospitality, Tourism, and Culture target clusters, with over 2,800 computer occupations added between 2018 and 2021.

Workforce Distribution by Occupation Type (2021)



Key Detailed Occupations

| Top Occupations by Emp. (2021) | Emp. (2021) |
|--|-------------|
| Engineers | 39,670 |
| Business Operations Specialists | 34,990 |
| Information and Record Clerks | 29,320 |
| Building Cleaning and Pest Control Workers | 25,880 |
| Top Executives | 23,680 |

| Top Occupations by Jobs Added (2018-21) | Jobs Added (2018-21) |
|--|----------------------|
| Business Operations Specialists | 11,790 |
| Top Executives | 6,620 |
| Computer Occupations | 2,830 |
| Advertising, Marketing, Promotions, Public Relations, and Sales Managers | 1,810 |
| Other Management Occupations | 1,790 |

Key Competencies

| Top In-Demand Competency Areas (2021) | | |
|---------------------------------------|-------------------------------|-----------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Customer & Personal Service | Active Listening |
| 2 | English Language | Speaking |
| 3 | Computers and Electronics | Reading Comprehension |
| 4 | Mathematics | Critical Thinking |
| 5 | Administration and Management | Monitoring |

| High Growth Competency Areas (2018-21) | | |
|--|---------------------------|-------------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Building and Construction | Writing |
| 2 | Production and Processing | Operations Analysis |
| 3 | Design | Systems Evaluation |
| 4 | Computers and Electronics | Complex Problem Solving |
| 5 | Mechanical | Negotiation |

Data Sources: IMPLAN, Data Library, Texas, (2018-21); Guidehouse Analysis

Workforce Themes



Diverse Workforce

Hospitality, Tourism, and Culture clusters are supported by a wide variety of occupational groups.



Operations Management

Business Operations Specialists represent a large share of top and growing occupations in the sector.



Growth in Creation

Skills enabling creation, like design, construction, and production, are growing.

*Note: Wage and Salary Employment is a headcount of salaried or wage-earning employees. This figure does not include Proprietor Employment, which represents proprietors, partners, and tax-exempt cooperative members.



Hospitality, Tourism, and Culture in Texas



Film, Music, and Culture

Texas' unique history and diversity of people and geographies has created a culture unlike anywhere else in the world. From historic programs like the *Lone Ranger* to current hits like *1883*, Texas is immediately recognizable to audiences across the globe. The state also has a bustling music industry — not only does it boast the live music capital of the world in Austin, but Texas is also home to legendary musicians ranging from Willie Nelson to Beyoncé. Texas' Film, Music, and Culture cluster offers opportunity to both individuals interested in a career in a creative industry and businesses hoping to grow and scale.

The Film, Music, and Culture cluster consists of 18 industries and encompasses a range of creative media businesses, including production activities like video and sound recording, broadcasting, printing and publishing, along with support activities for these fields, such as promoters and advertisers. The cluster also includes cultural institutions such as museums, parks, and historical sites.

The Central Texas and Gulf Coast regions have the highest concentration of Film, Music, and Culture in the state. Central Texas boasts a high concentration of internet publishing and broadcasting businesses as well as many independent artists. The region is also home to Troublemaker Studios and the future location of Hill Country Studios, expected to be the state's largest film and television production space. The Gulf Coast region is a hub of architectural and engineering activity, including prominent firms such as PBK and PGAL.

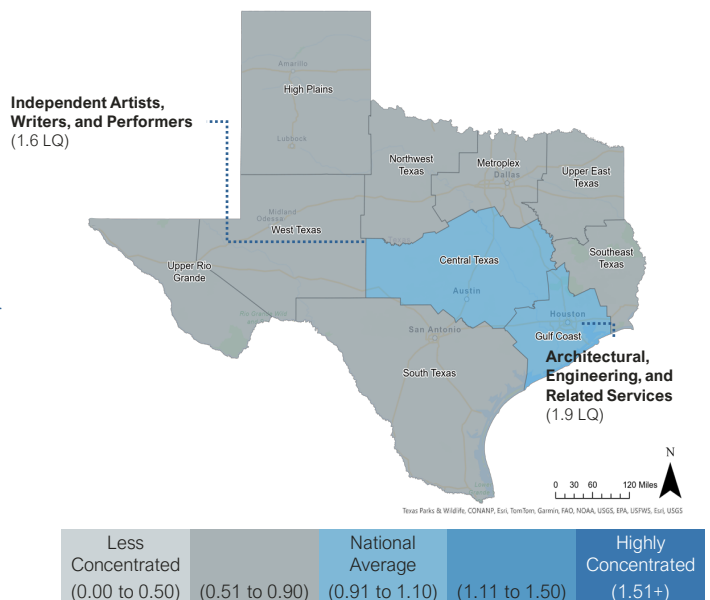
State initiatives have bolstered the strength of the Film, Music, and Culture cluster in Texas. In 2023, the Legislature appropriated \$200 million for film incentives to further strengthen Texas' film industry. The state also offers sales, occupancy, and fuel tax exemptions on purchases made for production. The Texas Film Commission, within the Texas Economic Development & Tourism Office, stands ready to connect film, television, commercial, animation, VFX (visual effects), video game, and XR (extended reality) businesses with Texas' diverse locations, experienced workforce, support services, industry organizations, and competitive production incentive program. Texas is also home to the first-in-the-nation state music office — the Texas Music Office — which works with communities to promote and grow their music industries.

Though the Film, Music, and Culture cluster experienced a modest GDP growth of 12% between 2011 and 2021, the cluster is projected to experience a 45% growth in GDP and an 11% growth in employment between 2022 and 2032.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|--|---|---|
| Magnitude | 461K Total Employment (2021) | \$51B GDP Contribution (2021) | \$5B Foreign Exports (2021) |
| Share | 8% Share of U.S. Cluster Total Emp. (2021) | 5% Share of U.S. Cluster GDP (2021) | 6% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | -1% Total Employment Growth (2011 – 21) | 12% GDP Growth (2011 – 21) | -33% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Hospitality, Tourism, and Culture in Texas



Hospitality and Tourism

Texas has been a top destination for visitors since its inception as a state. In her book *Texas in 1850*, Melinda Rankin wrote that "a traveler, passing through Texas during the months of April and May, would not fail of pronouncing it to be the most charming spot on earth." The state offers an abundance of attractions, from awe-inducing scenery and national parks to cultural hubs and landmarks. Texas has something for everyone, making it one of the most popular tourist destinations in the United States and a prime location for hospitality and tourism businesses looking to grow and scale.

The Hospitality and Tourism cluster is comprised of 12 industries that cover a range of hospitality and tourism activities. These industries include tourist attractions, such as commercial sports, amusement parks, museums, and historical sites, along with activities that support tourism, such as travel arrangement and reservation services. The cluster also includes hospitality industries, including hotels, motels, and other accommodations.

While every region of Texas has notable tourist attractions, South Texas serves as one of the biggest hubs for the Hospitality and Tourism cluster, due in part to the Alamo — arguably Texas' most significant landmark — as well as the nearby River Walk. The Upper Rio Grande also has a high concentration of hospitality and tourism, driven by visitors to Big Bend, Marfa, and other destinations.

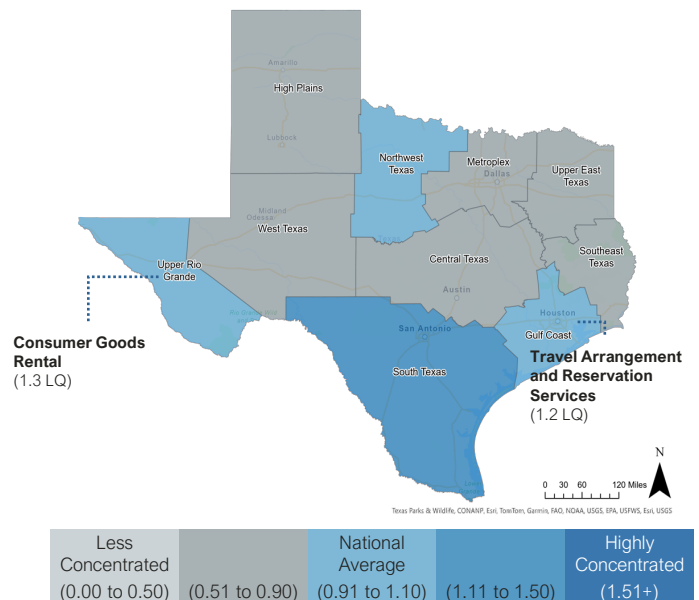
Major events like the Texas State Fair, the Houston Rodeo, and Fiesta San Antonio each saw an attendance of over two million visitors in 2023. Texas supports some endeavors through the Event Trust Funds Program, which provides funds to events like Formula 1 and the NCAA Football Championship that spur the local economy. Nationally recognized tourism brands have roots in the state, too — many outside the Lone Star State do not realize that Six Flags theme parks takes its name from the six flags that have flown over Texas. Texas' tourism industry is supported by Travel Texas, a division within the Texas Economic Development & Tourism Office, responsible for promoting Texas across the country and around the world as a premier travel destination. In addition to working cooperatively with industry partners and local communities to participate in advertising and marketing activities, Travel Texas promotes the Texas brand at international trade shows and conferences.

The Hospitality and Tourism cluster experienced GDP and employment growth of 9% and 26%, respectively, between 2011 and 2021 and is projected to experience 9% growth in GDP and 20% growth in employment between 2022 and 2032.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|--|---|--|
| Magnitude | 426K Total Employment (2021) | \$28B GDP Contribution (2021) | \$0B Foreign Exports (2021) |
| Share | 8% Share of U.S. Cluster Total Emp. (2021) | 7% Share of U.S. Cluster GDP (2021) | 10% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 26% Total Employment Growth (2011 – 21) | 9% GDP Growth (2011 – 21) | -61% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Information Technology in Texas

About the Information Technology Sector

The Information Technology sector includes a variety of industries that use computer systems to exchange information and manage, process, and protect data. Within the Information Technology sector, the state has identified one target cluster that has experienced rapid growth and is expected to drive innovation in other industries: Information Technology and Artificial Intelligence.

As the world and our economy become increasingly digitized, nearly every industry from art to agriculture to manufacturing is adopting new forms of technology, accelerating the growth of the Information Technology sector. Texas' robust university system, skilled workforce, and growing tech hubs have propelled Texas to the forefront of the sector and position it to create and deploy pioneering IT products and services for years to come.



Information Technology Target Clusters

Target Clusters Fast Facts

| | Workforce | GDP | Exports |
|------------------|---|--|--|
| Magnitude | 495K <i>Total Employment (2021)</i> | \$71B <i>GDP Contribution (2021)</i> | \$10B <i>Foreign Exports (2021)</i> |
| Share | 9% <i>Share of U.S. Cluster Total Employment (2021)</i> | 6% <i>Share of U.S. Cluster GDP (2021)</i> | 9% <i>Share of U.S. Cluster Foreign Exports (2021)</i> |
| Growth | 119% <i>Total Employment Growth (2011 – 21)</i> | 89% <i>GDP Growth (2011 – 21)</i> | 60% <i>Foreign Export Growth (2011 – 21)</i> |

Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis

Information Technology and Artificial Intelligence



Sector Opportunities

Strengths

Texas' Information Technology sector is thriving.

The Information Technology sector more than doubled in employment from 2011 to 2021, making it the fastest-growing target sector in the state during this period.

Texas' workforce is equipped to support rapid growth in tech.

Texas' Information Technology sector employs a large and specialized workforce, with over 170,000 computer and mathematical occupations supporting growth and innovation.

Within the sector, Texas has strengths in programming, computer systems design, and data processing.

These industries support the advancement of all sectors in Texas, enhancing the efficiency and effectiveness of businesses of all types.

Opportunities

The state can capitalize on growth and foster innovation.

By continuing to provide an environment that is friendly to entrepreneurs and tech workers, Texas can remain a destination for innovation for years to come.

The state can support partnerships between universities, businesses, and workforce partners to align on initiatives.

Higher ed institutions, businesses, and workforce organizations can continue to align on skills necessary for the jobs of the future.

Texas' information technology businesses and workforce are well-positioned to define the cutting edge.

Artificial intelligence and its applications are growing in importance across the globe, and Texas is poised to take a leading role.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.



Information Technology in Texas

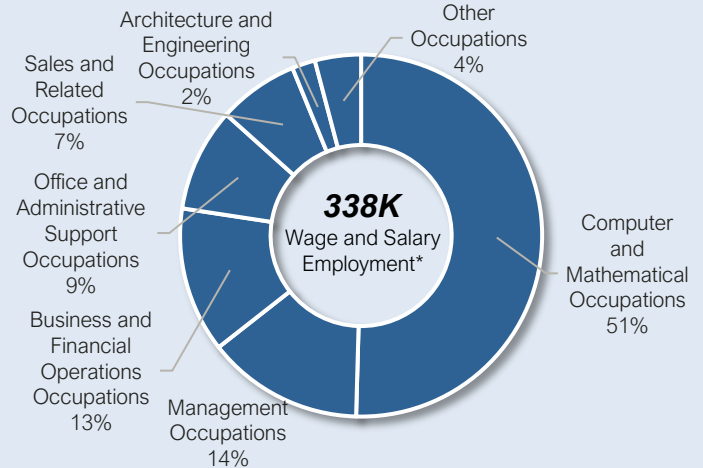


Target Sector Workforce Landscape

The workforce supporting Texas' Information Technology target cluster is relatively specialized, with over 50% of all wage and salary employment represented by computer and mathematical occupations. This sector also requires occupations that support business operations and sales, including management, business and financial, administrative, and sales occupations.

In-demand competency areas for the Information Technology target cluster include computers and electronics, customer and personal service, English language, mathematics, and administration and management. Analytical competency skill areas have grown in importance to the Information Technology sector in recent years, including programming, quality control analysis, and complex problem solving.

Workforce Distribution by Occupation Type (2021)



Key Detailed Occupations

| Top Occupations by Emp. (2021) | Emp. (2021) | Top Occupations by Jobs Added (2018-21) | Jobs Added (2018-21) |
|---------------------------------|-------------|---|----------------------|
| Computer Occupations | 166,320 | Computer Occupations | 23,850 |
| Business Operations Specialists | 37,020 | Business Operations Specialists | 14,800 |
| Operations Specialties Managers | 22,290 | Operations Specialties Managers | 6,900 |
| Sales Representatives, Services | 16,050 | Top Executives | 5,150 |
| Top Executives | 13,660 | Sales Representatives, Services | 4,940 |

Key Competencies

| Top In-Demand Competency Areas (2021) | | |
|---------------------------------------|-------------------------------|-------------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Computers and Electronics | Active Listening |
| 2 | Customer & Personal Service | Critical Thinking |
| 3 | English Language | Reading Comprehension |
| 4 | Mathematics | Speaking |
| 5 | Administration and Management | Complex Problem Solving |

| High Growth Competency Areas (2018-21) | | |
|--|----------------------------|--------------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Sales and Marketing | Programming |
| 2 | Geography | Active Listening |
| 3 | Transportation | Quality Control Analysis |
| 4 | Production and Processing | Social Perceptiveness |
| 5 | Sociology and Anthropology | Complex Problem Solving |

Data Sources: IMPLAN, Data Library, Texas, (2018-21); Guidehouse Analysis

Workforce Themes



Specialized Workforce

Over half of all Information Technology employees are in computer and mathematical occupations.



Technical Skillsets

Information Technology businesses require a highly technical workforce.



Growth in Programming

Programming skills have grown in importance to the Information Technology sector.

*Note: Wage and Salary Employment is a headcount of salaried or wage-earning employees. This figure does not include Proprietor Employment, which represents proprietors, partners, and tax-exempt cooperative members.



Information Technology in Texas



Information Technology and Artificial Intelligence

Information Technology and Artificial Intelligence is a rapidly evolving cluster. Ensuring Texas remains at the forefront of cluster growth and innovation will position the state to lead not only in information technology but also in the many industries that leverage IT, automation, cybersecurity, and artificial intelligence. Texas' strong higher education system and startup-friendly environment make it a welcoming location for those looking to build an IT or AI business.

The Information Technology and Artificial Intelligence cluster consists of seven industries that include software-related activities like software publishing and computer programming services along with information-related activities and services like data processing and hosting, cybersecurity, Internet publishing and broadcasting, and web search portals.

The Central Texas and Metroplex regions, which have earned the respective monikers of Silicon Hills and Silicon Prairie, are the main Information Technology and Artificial Intelligence hubs within the state due, in part, to a high concentration of STEM workers and proximity to multiple higher education institutions. Both regions have seen investments from tech companies such as Alphabet and NVIDIA along with strong growth of smaller tech startups.

Within the cluster, the cybersecurity industry is an emerging strength, supported by a variety of cluster assets and anchor institutions. San Antonio is home to the U.S. Air Force's information warfare base and one of the National Security Agency's four Cryptologic Centers. San Antonio has the highest concentration of cyber and intelligence employees outside of D.C., and The University of Texas at San Antonio offers a nationally recognized Bachelor of Business Administration in Cyber Security.

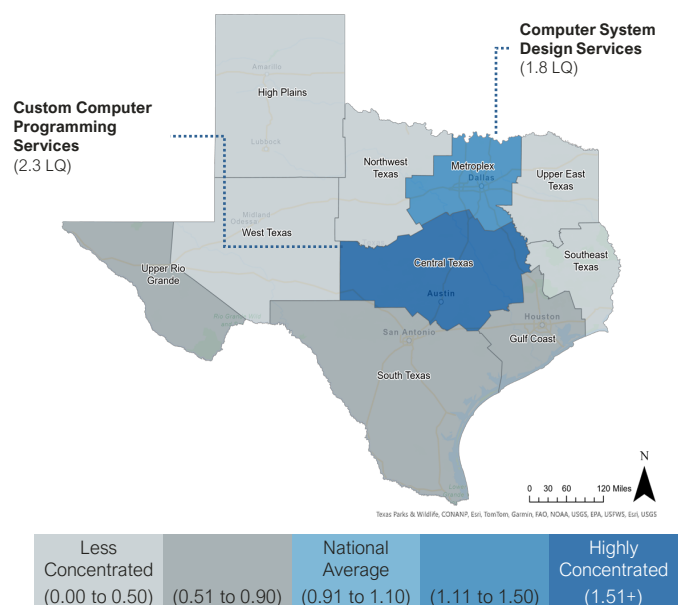
Information Technology and Artificial Intelligence is one the most rapidly shifting clusters, and Texas is on the cutting edge of innovation. Emerging technologies like machine learning, robotic process automation, and natural language processing are the focus of Texas universities and businesses alike. For example, The University of Texas at Austin is launching a Center for Generative AI, one of the largest such centers in the country. Continuing to both grow Texas' technology talent and attract tech workers from outside the state will support cluster growth and build Texas' competitive advantage.

From 2011 to 2021, the cluster grew significantly in employment (119%) and GDP (87%). It is expected to continue to grow steadily, with a projected GDP growth of 67% from 2022 to 2032.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|--|---|---|
| Magnitude | 495K Total Employment (2021) | \$71B GDP Contribution (2021) | \$10B Foreign Exports (2021) |
| Share | 7% Share of U.S. Cluster Total Emp. (2021) | 6% Share of U.S. Cluster GDP (2021) | 8% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 119% Total Employment Growth (2011 – 21) | 87% GDP Growth (2011 – 21) | 58% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Life Sciences and Biotechnology in Texas

About the Life Sciences and Biotechnology Sector

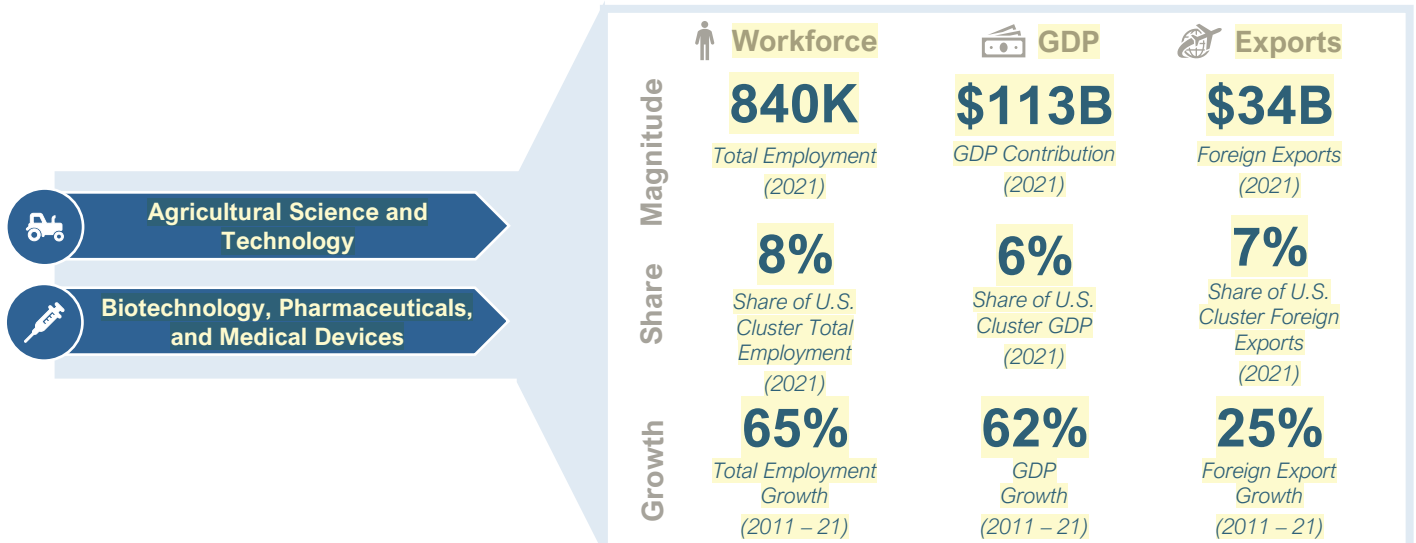
The Life Sciences and Biotechnology sector includes the research, development, and production of scientific solutions focused on living things. The sector spans a variety of industries related to biology, medicine, and agriculture and includes two target clusters: Biotechnology, Pharmaceutical, and Medical Devices; and Agricultural Science and Technology.

World-renowned research and medical institutions and a robust sector supply chain provide Texas a competitive advantage in life sciences and biotechnology. Entrepreneurs and businesses choose Texas because they can take new products and technologies through the full product lifecycle — including research, testing, trials, and commercialization — all without leaving the state. The sector is growing rapidly in Texas, and the state is poised to emerge as a global center of Life Sciences and Biotechnology.



Life Sciences & Biotechnology Target Clusters

Target Clusters Fast Facts



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Sector Opportunities

Strengths

Texas has a strong, growing Life Sciences & Biotechnology sector. From research facilities to specialized manufacturing capacity, Texas has everything needed to support life sciences and biotechnology products throughout their life cycle.

Texas is a leader in sector research and innovation. Significant public and private investment and the state's network of research hospitals and universities have placed Texas at the forefront of research and development.

Higher education and private partners work together in Texas. Colleges and universities collaborate regularly with sector businesses to develop skilled talent and deploy new sector innovations.

Opportunities

The state can continue promoting Texas as a destination for growth. Texas can continue communicating our strengths within the sector to increase awareness of all that we have to offer.

Texas can advance innovation and entrepreneurship. The state can continue prioritizing research and development, increase access to mentorship and capital, and expand the development of specialized sector facilities and equipment.

Texas can continue expanding sector collaboration. Companies in the sector can continue to work with higher education institutions to transfer technologies and innovations and expand the talent pool.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.



Life Sciences and Biotechnology in Texas

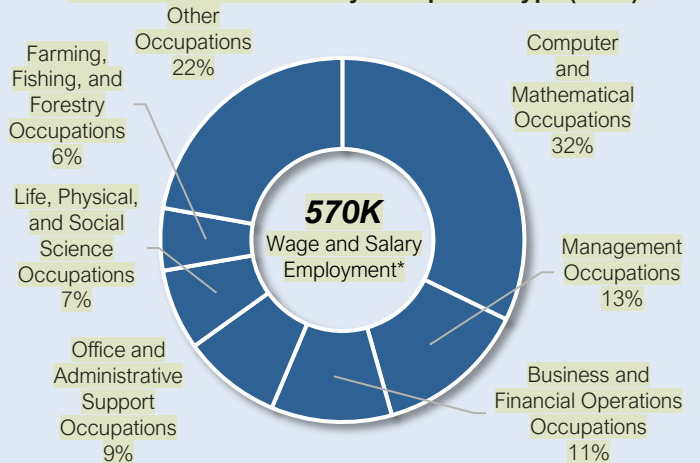


Target Sector Workforce Landscape

Texas' Life Sciences and Biotechnology target clusters employ a large and diverse workforce. Computer and mathematical occupations represent around a third of total wage and salary employment in the clusters, and life, physical, and social science occupations represent around 7% of wage and salary employment. Computer occupations have grown in recent years, adding over 26,000 jobs from 2018 to 2021.

In-demand competencies within Life Sciences and Biotechnology target clusters span a wide range of skills and knowledge areas and signal the importance of critical thinking, effective communication, and management. Technical skills, including computers and electronics, programming, and quality control analysis are also critical to the sector and have been growing in importance.

Workforce Distribution by Occupation Type (2021)



Key Detailed Occupations

| Top Occupations by Emp. (2021) | Emp. (2021) |
|---------------------------------|-------------|
| Computer Occupations | 176,490 |
| Business Operations Specialists | 51,180 |
| Operations Specialties Managers | 29,900 |
| Agricultural Workers | 29,690 |
| Engineers | 23,500 |

| Top Occupations by Jobs Added (2018-21) | Jobs Added (2018-21) |
|---|----------------------|
| Computer Occupations | 26,450 |
| Business Operations Specialists | 17,170 |
| Operations Specialties Managers | 9,050 |
| Top Executives | 6,970 |
| Sales Representatives, Services | 5,050 |

Key Competencies

| Top In-Demand Competency Areas (2021) | | |
|---------------------------------------|-------------------------------|-----------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Computers and Electronics | Active Listening |
| 2 | English Language | Reading Comprehension |
| 3 | Customer & Personal Service | Critical Thinking |
| 4 | Mathematics | Speaking |
| 5 | Administration and Management | Writing |

| High Growth Competency Areas (2018-21) | | |
|--|-------------------------------|--------------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Geography | Programming |
| 2 | Sales and Marketing | Active Listening |
| 3 | Transportation | Quality Control Analysis |
| 4 | Administration and Management | Complex Problem Solving |
| 5 | Sociology and Anthropology | Social Perceptiveness |

Data Sources: IMPLAN, Data Library, Texas, (2018-21); Guidehouse Analysis

Workforce Themes



Diverse Workforce

Life Sciences and Biotechnology clusters are supported by a wide variety of occupational groups.



Computing Power

Computer Occupations are a large and growing share of employment in this sector.



Growth in Programming

Programming skills are growing in the Life Sciences and Biotechnology sector.

*Note: Wage and Salary Employment is a headcount of salaried or wage-earning employees. This figure does not include Proprietor Employment, which represents proprietors, partners, and tax-exempt cooperative members.



Life Sciences and Biotechnology in Texas



Agricultural Science and Technology

The Agricultural Science and Technology cluster both stems from and supports the success of Texas' agriculture and technology industries. Texas' position as a top producer of agricultural and food products and a leader in information technology services make it uniquely equipped to excel in the cluster. The state's tech talent, strong network of manufacturers, and research and development activity make Texas an ideal environment for agricultural technology businesses and entrepreneurs.

The Agricultural Science and Technology cluster consists of 10 industries and encompasses a variety of agricultural, manufacturing, and technology functions. On the agricultural side, the cluster includes industries such as crop farming, greenhouse and floriculture production, and other agricultural and forestry support activities. In the technology space, it includes industries like software publishing, data processing, computer programming and systems design, and scientific research and development services.

Central Texas serves as a center for agricultural science and boasts strong concentrations in technical fields like computer programming and data processing as well as agricultural industries like crop farming. Revol Greens, a high-tech produce company, recently built the world's largest lettuce greenhouse in Temple, noting that the central location will reduce transportation time and improve product freshness. In the Metroplex region, Bowery Farming recently opened a new state-of-the-art vertical farm in Arlington, chosen for its reputation as a growing technology and manufacturing hub.

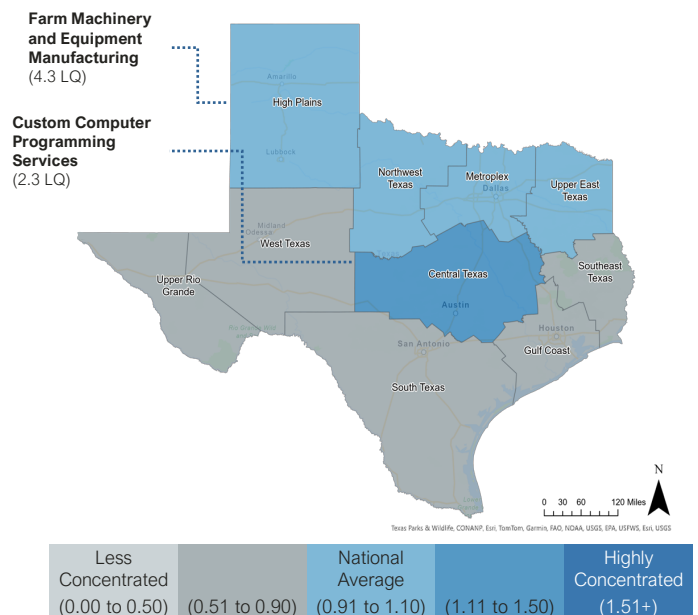
Cluster growth is supported by the innovation and entrepreneurship ecosystem across the state. Central Texas is home to two leading agricultural technology research institutions — Texas A&M University, one of the world's most renowned agricultural and manufacturing universities, and The University of Texas at Austin. Positioned strategically across Texas, 13 Texas A&M AgriLife Research and Extension Centers conduct specialized scientific research in agriculture, natural resources, and the life sciences. The AgTech innovations generated through cluster research and development benefit all Texans — improving the efficiency and quality of the state's agricultural outputs and reducing the resource requirements of agricultural production.

From 2011 to 2021, the cluster grew significantly in employment (68%) and GDP (59%). Growth is expected to continue at this pace, with a projected GDP growth of 59% from 2022 to 2032.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|--|---|---|
| Magnitude | 769K Total Employment (2021) | \$94B GDP Contribution (2021) | \$25B Foreign Exports (2021) |
| Share | 8% Share of U.S. Cluster Total Emp. (2021) | 7% Share of U.S. Cluster GDP (2021) | 7% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 68% Total Employment Growth (2011 – 21) | 59% GDP Growth (2011 – 21) | 18% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Life Sciences and Biotechnology in Texas



Biotechnology, Pharmaceuticals, and Medical Devices

A rich ecosystem of university and hospital researchers, world-class businesses and talent, and public and private-sector investment have fueled Texas' growth in the Biotechnology, Pharmaceuticals, and Medical Devices cluster in recent years. Our cutting-edge facilities and well-equipped workforce make Texas an ideal location to start and grow a biotechnology, pharmaceutical, or medical device company.

The Biotechnology, Pharmaceuticals, and Medical Devices cluster contains 19 industries and encompasses a wide range of life science-related activities, including medical and diagnostic laboratories, biological product manufacturing, pharmaceutical preparation manufacturing, fertilizer manufacturing, and the manufacturing of medical devices.

As the cluster continues to grow within the state, no region in Texas has yet established a concentration of cluster employment above the national average. However, the Gulf Coast region — especially the Greater Houston area — is rapidly becoming one of the nation's leading hubs for biotechnology and medical research. The region is home to the Texas Medical Center (TMC), the world's largest medical complex, which houses some of the world's premier medical facilities, including M.D. Anderson, along with higher education facilities devoted to researching medicine and biotechnology.

Multiple Fortune 500 companies within the cluster call Texas home; McKesson, Tenet Healthcare and Kimberly-Clark all have headquarters in the Lone Star State, and globally recognized firms like AbbVie, Merck, and Johnson & Johnson have significant presences in Texas. The state has businesses and resources focused on all steps of the product lifecycle, from research and discovery to clinical trials to post-FDA approval monitoring. The infrastructure and supply chain available makes our state an appealing destination for companies to build operations, conduct research, and develop new products.

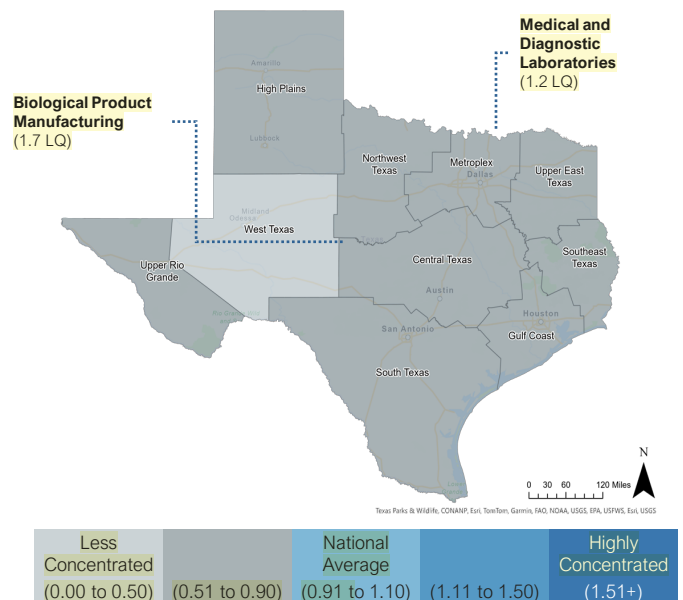
Texas is home to 15 medical schools that serve as local hubs for cluster growth. Our academic research and development complex is among the fastest growing in the U.S. since 2018, and university research and development expenditures in Texas exceeded \$4.1 billion in 2020. Additionally, since 2004, there have been 17,087 clinical trials open or completed in Texas.

The Biotechnology, Pharmaceuticals, and Medical Devices cluster grew steadily from 2011-21 in employment (33%) and GDP (36%). The cluster is projected to continue along its upward trajectory with an employment and GDP growth of 14% and 33%, respectively.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|--|---|---|
| Magnitude | 255K Total Employment (2021) | \$45B GDP Contribution (2021) | \$24B Foreign Exports (2021) |
| Share | 6% Share of U.S. Cluster Total Emp. (2021) | 5% Share of U.S. Cluster GDP (2021) | 6% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 33% Total Employment Growth (2011 – 21) | 36% GDP Growth (2011 – 21) | 14% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Petroleum Refining and Chemicals in Texas

About the Petroleum Refining and Chemicals Sector

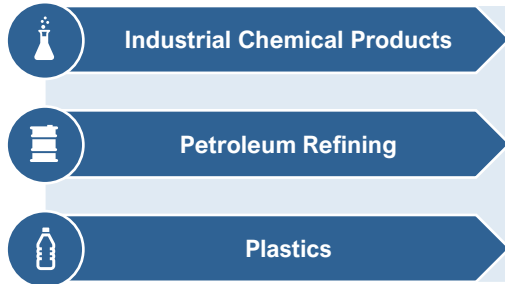
The Petroleum Refining and Chemicals sector is focused on the conversion of crude oil into petroleum products, including chemicals, fuel, and plastics. Within the Petroleum Refining and Chemicals sector, the state has identified three target clusters: Industrial Chemical Products, Petroleum Refining, and Plastics.

Texas' abundance of natural resources and raw materials, along with our supportive regulatory environment, afford the state a strong competitive advantage in these clusters. Industrial Chemical Products, Petroleum Refining, and Plastics have all seen a rise in exports and are projected to continue to grow. Though the sector experienced decline in some areas during the COVID-19 pandemic, the clusters recovered post-pandemic as global petroleum demand rebounded and are poised for future growth.



Petroleum Refining and Chemicals Target Clusters

Target Clusters Fast Facts



| | Workforce | GDP | Exports |
|------------------|--|---|---|
| Magnitude | 111K <i>Total Employment (2021)</i> | \$68B <i>GDP Contribution (2021)</i> | \$38B <i>Foreign Exports (2021)</i> |
| Share | 11% <i>Share of U.S. Cluster Total Employment (2021)</i> | 24% <i>Share of U.S. Cluster GDP (2021)</i> | 22% <i>Share of U.S. Cluster Foreign Exports (2021)</i> |
| Growth | 9% <i>Total Employment Growth (2011 – 21)</i> | -33% <i>GDP Growth (2011 – 21)</i> | 18% <i>Foreign Export Growth (2011 – 21)</i> |

Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Sector Opportunities

Strengths

Texas is home to a robust supply chain supporting the production of petroleum and chemical products.

Texas' long history of oil and gas leadership has created a robust supply chain supporting activities from extraction to manufacturing.

Texas has an abundance of natural resources.

Texas' access to petroleum reserves and other necessary raw materials make it a natural hub for petroleum products and refining.

Petroleum and chemical products are some of Texas' top exports.

Texas' strategic location and transportation network, along with a robust transportation and materials moving workforce, equip Texas to export petroleum and related products efficiently and at scale.

Opportunities

Texas is well-positioned to grow petroleum-based industries.

To further grow its Petroleum Refining and Chemicals sector, the state can continue to nurture and promote not only extraction and refining but also manufacturing of petroleum-based products.

Texas can promote sector interconnectivity.

By promoting Texas' strengths in the Petroleum Refining and Chemicals sector, the state can attract a variety of other industries, like pharmaceuticals, that require petroleum-based chemicals.

Texas can bolster infrastructure and trade relationships.

By continuing to improve infrastructure and expand trade through relationships with international partners, Texas can ensure the sector remains a major driver of exports.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.



Petroleum Refining and Chemicals in Texas

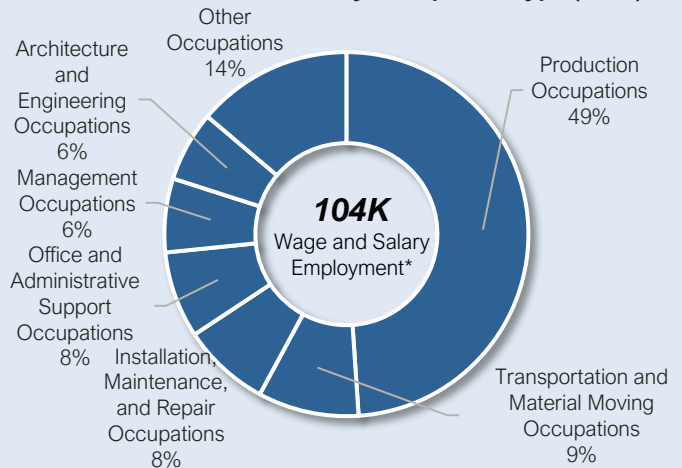


Target Sector Workforce Landscape

The target clusters within Texas' Petroleum Refining and Chemicals target clusters are supported by a relatively concentrated workforce. As shown in the chart at right, production occupations represent nearly half of total wage and salary employment. Top occupations in this sector enable the movement and manipulation of raw materials, including metal workers and plastic workers, material moving workers, assemblers and fabricators, and plant and system operators.

The most in-demand competency areas for these target clusters are technical and communication skills, including production and processing, mechanical knowledge, and English language. In recent years, knowledge of transportation, building and construction, and computers and electronics have grown in importance for the sector. Top occupations and competencies are identified in the tables below.

Workforce Distribution by Occupation Type (2021)



Key Detailed Occupations

| Top Occupations by Emp. (2021) | Emp. (2021) |
|---|-------------|
| Other Production Occupations | 20,990 |
| Metal Workers and Plastic Workers | 12,390 |
| Material Moving Workers | 7,000 |
| Other Installation, Maintenance, and Repair Occupations | 6,690 |
| Supervisors of Production Workers | 5,480 |

| Top Occupations by Jobs Added (2018-21) | Jobs Added (2018-21) |
|--|----------------------|
| Other Production Occupations | 1,340 |
| Material Moving Workers | 1,210 |
| Occupational Health and Safety Specialists and Technicians | 530 |
| Business Operations Specialists | 380 |
| Assemblers and Fabricators | 280 |

Key Competencies

| Top In-Demand Competency Areas (2021) | | |
|---------------------------------------|-----------------------------|-----------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Production and Processing | Active Listening |
| 2 | Mechanical | Reading Comprehension |
| 3 | English Language | Critical Thinking |
| 4 | Mathematics | Monitoring |
| 5 | Customer & Personal Service | Speaking |

| High Growth Competency Areas (2018-21) | | |
|--|-------------------------------|--------------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Transportation | Social Perceptiveness |
| 2 | Building and Construction | Operation and Control |
| 3 | Computers and Electronics | Active Listening |
| 4 | Administration and Management | Time Management |
| 5 | Customer & Personal Service | Quality Control Analysis |

Data Sources: IMPLAN, Data Library, Texas, (2018-21); Guidehouse Analysis

Workforce Themes



Specialized Workforce

Nearly half of all target sector employees are in production occupations.



Technical Skillsets

Petroleum Refining and Chemicals businesses require a highly technical workforce.



Growth in Technology

Computer and electronic skills have been growing in importance for this sector.

*Note: Wage and Salary Employment is a headcount of salaried or wage-earning employees. This figure does not include Proprietor Employment, which represents proprietors, partners, and tax-exempt cooperative members.



Petroleum Refining and Chemicals in Texas



Industrial Chemical Products

Though often an unsung hero in our economy, the Industrial Chemical Products cluster plays a crucial role in providing raw materials and feedstock for products used in nearly every industry, ranging from fertilizers used in agricultural applications to industrial gases used in aerospace engineering. The same resources that make Texas a hub for energy and manufacturing give it a competitive advantage in the Industrial Chemical Products cluster, and demand for these products across Texas as well as an ability to export goods to global markets make our state a prime location for chemical companies to build and grow.

The Industrial Chemical Products cluster is comprised of seven industries that encompass the manufacturing of various chemical products, including petrochemicals, industrial gas, synthetic rubber, phosphatic fertilizer, pesticide and agricultural chemicals, and other organic and inorganic chemicals.

Texas has many Industrial Chemical Products hubs across the state and is home to large industrial chemical companies such as Dow, Phillips 66, and Eastman Chemical Company. While some regions like the High Plains show concentrations in industries like inorganic chemical and phosphatic fertilizer manufacturing, most of the state's concentrations of cluster activity are driven by petrochemical manufacturing, which has a significant presence in most Texas regions and is linked to the strength of the state's Oil and Gas Extraction, Production, and Transportation cluster.

Texas' competitive advantage in the sector stems from our rich supply of petroleum resources, which are used in the manufacturing of chemicals like benzene and ethylene. The cluster also benefits from Texas' robust commerce and transportation infrastructure, which facilitates the export of these chemical products around the globe.

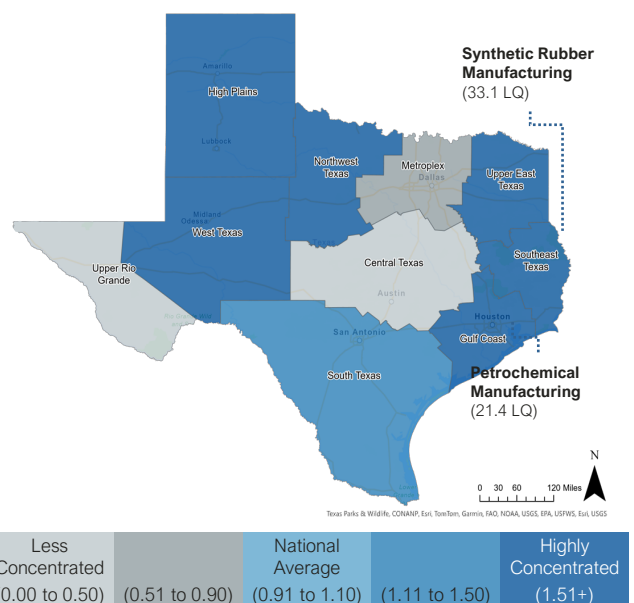
Investments from universities and nonprofits alike in laboratories and research have spurred industrial chemical innovation in Texas. Texas is seeing innovation at the micro level, with advancements like novel chemical catalysts and polymers, as well as the macro level, with AI and robotic innovations improving efficiency and safety in the manufacturing of these products.

Though the cluster's GDP growth saw a decline from 2011 to 2021, employment and exports both experienced increases in this period. Cluster GDP is projected to grow by 25% from 2022 to 2032.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|---|--|--|
| Magnitude | 38K Total Employment (2021) | \$28B GDP Contribution (2021) | \$13B Foreign Exports (2021) |
| Share | 22% Share of U.S. Cluster Total Emp. (2021) | 36% Share of U.S. Cluster GDP (2021) | 23% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 11% Total Employment Growth (2011 – 21) | -24% GDP Growth (2011 – 21) | 5% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Petroleum Refining and Chemicals in Texas



Petroleum Refining

Texas is a national leader in the Petroleum Refining cluster, responsible for nearly one-third of the nation's refining capacity. The rich petroleum reserves in our state serve as the foundation for a wide array of goods, such as gasoline, plastics, and chemical products. Texas' decades of cluster leadership are supported by 27 refineries, including ExxonMobil, which was ranked third in the 2023 Fortune 500. Texas' natural petroleum supply, highly specialized and well-equipped workforce, and friendly regulatory environment contribute to Texas' long-standing success and leadership within the cluster.

The Petroleum Refining cluster includes just two industries — petroleum refineries and other petroleum and coal products manufacturing — but represents a significant contribution to the state's GDP. Notably, Petroleum Refining does not include the oil extraction industry, which is located within the Oil and Gas Extraction, Production, and Transportation cluster.

Petroleum refining is ubiquitous throughout Texas, with eight of the 10 regions having very high concentrations of cluster activity. In Southeast Texas, the petroleum refinery industry is 35 times more concentrated in the region than the national average. The Gulf Coast is home to four of the 10 largest oil refineries in the United States, including the Motiva Port Arthur Manufacturing Complex, and Texas refineries process nearly 5.9 million barrels of crude oil per day. This strong concentration of petroleum refineries attracts complementary energy-related firms and thought leaders, further advancing cluster growth.

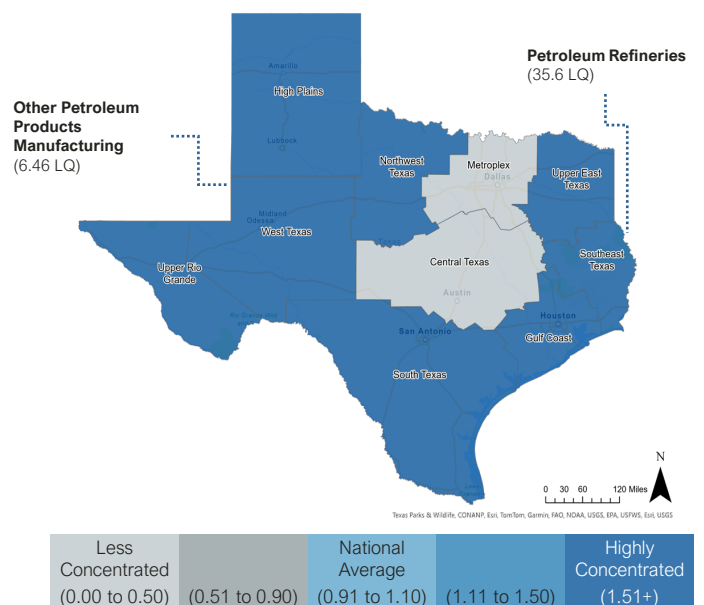
Texas' leadership in Petroleum Refining is supported by educational institutions throughout the state, which are heavily invested in research and development related to the cluster. Rice University, Texas A&M University, The University of Texas at Austin and at Tyler, and the University of Houston all have research and development programs dedicated to trailblazing new refining techniques and technologies. Innovation in the cluster includes exploration of the use of blockchain, data analytics, and AI to improve the efficiency of refining operations.

Although employment and GDP declined in the Petroleum Refining cluster between 2011 to 2021, the cluster experienced a 15% growth in total foreign exports during that period. The cluster also experienced significant GDP growth from 2021 to 2022 as the economy recovered from the impacts of the COVID-19 pandemic and global petroleum demand rebounded. By 2032, the cluster is expected have a GDP contribution of \$66 billion, an increase of 28% from 2022.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|---|--|--|
| Magnitude | 19K Total Employment (2021) | \$31B GDP Contribution (2021) | \$19B Foreign Exports (2021) |
| Share | 26% Share of U.S. Cluster Total Emp. (2021) | 29% Share of U.S. Cluster GDP (2021) | 28% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | -19% Total Employment Growth (2011 – 21) | -36% GDP Growth (2011 – 21) | 15% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Petroleum Refining and Chemicals in Texas



Plastics

Used in its various forms — rigid, foam, liquid — plastic plays a critical role in many industries, from packaging to tools and protective equipment. As a leading plastics manufacturer, Texas produces products that deliver benefits to companies, industries, and consumers across the county. Our ample natural supply of the raw materials and feedstocks for plastic make Texas a prime location for manufacturers to start and grow a plastics business.

The Plastics cluster includes 12 industries that reflect plastic’s many uses and forms. Activities within this cluster include the manufacturing of various types of plastics, including resin, polystyrene foam, and urethane, as well as plastic products, materials, sheets, and pipes.

Several regions across Texas are home to concentrations of plastics manufacturing. Northwest Texas has a concentration of businesses within the Plastics cluster, with a urethane manufacturing industry that is nearly 10 times more concentrated in the region than the national average. Urethane is critical to supporting several industries, including but not limited to apparel, construction, and distribution. The Upper Rio Grande also has a strong concentration of plastics and is home to a number of plastic shaping companies including Plastic Molding Technology, Venture Plastics, and Summit Plastic Molding.

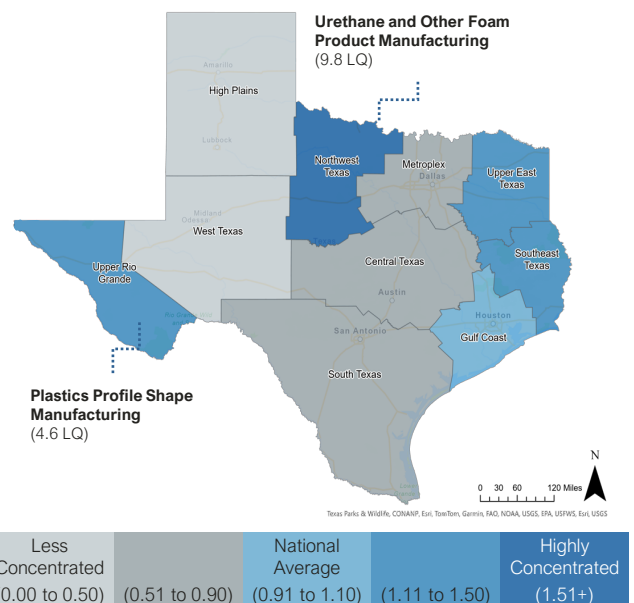
Texas businesses are leading in innovation within the Plastics cluster. In addition to improving manufacturing speed and efficiency, entities across the state are working to improve cluster recycling efforts. Public-private partnerships throughout Texas are using new sorting and recycling technologies to increase the amount of plastic that is recycled. In 2022, ExxonMobil opened one of the largest advanced recycling facilities in North America in Baytown. The facility uses cutting-edge technologies to break down hard-to-recycle plastics and is capable of processing more than 80 million pounds of plastic waste per year, with an expected capacity of 1 billion pounds of plastic waste per year by 2026.

The Plastics cluster experienced steady growth between 2011 to 2021 with employment increasing by 22%, GDP increasing by 26%, and total foreign exports increasing by 51%. The momentum is expected to continue with a projected cluster GDP of \$14 billion by 2032, representing 28% growth from 2022.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|--|--|--|
| Magnitude | 55K Total Employment (2021) | \$9B GDP Contribution (2021) | \$7B Foreign Exports (2021) |
| Share | 8% Share of U.S. Cluster Total Emp. (2021) | 10% Share of U.S. Cluster GDP (2021) | 14% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 22% Total Employment Growth (2011 – 21) | 26% GDP Growth (2011 – 21) | 51% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis

SECTOR Profile



Professional Services & Corporate Operations in Texas

About the Professional Services and Corporate Operations Sector

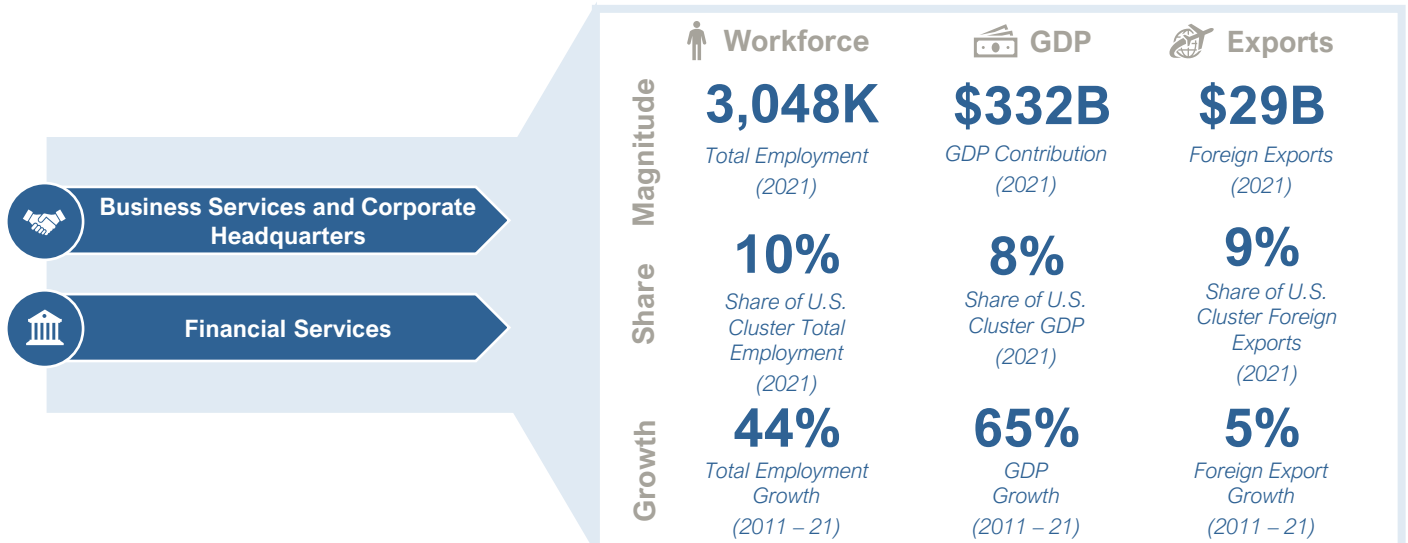
The Professional Services and Corporate Operations sector is focused on providing support for a variety of industries through information technology, business, and financial services. Within this sector, the state has identified two clusters positioned to excel in Texas: Business Services and Corporate Headquarters, and Financial Services.

Texas' low tax burden, network of leading businesses, and top tier talent have both cultivated the development of homegrown businesses as well as attracted companies from across the nation to the Lone Star State. Texas can continue to grow and capitalize on this momentum by supporting innovation in the sector, preparing workers to fill high-demand roles, advertising our sector strength, and ensuring that our business incentives remain competitive.



Professional Service and Corporate Operations Target Clusters

Target Clusters Fast Facts



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Sector Opportunities

Strengths

Texas' pro-business environment is unmatched.

The state's lack of state and corporate income tax, its variety of business incentives, and reasonable regulatory environment have been a magnet for businesses of all sizes.

Texas' diversity reinforces its global reach.

Businesses with a global reach are attracted to the state's diverse workforce and their ability to work across cultures and geographical boundaries.

Texas' workforce is large and skilled.

Businesses from a variety of industries are attracted to Texas in part because of our vast pool of skilled workers.

Opportunities

The state can continue to enhance its business climate.

Texas can continue to analyze and optimize its regulatory and business environment to ensure it reflects the needs of the Texas economy.

The state can continue attracting and retaining top talent from a variety of backgrounds.

Maintaining the pipeline of diverse workers will continue to grow the state's competitive advantage.

The state can prepare for anticipated high-demand competencies.

Supporting the attainment of high-demand specialized credentials — particularly in technical areas — can help spur growth.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.



Professional Services & Corporate Operations in Texas

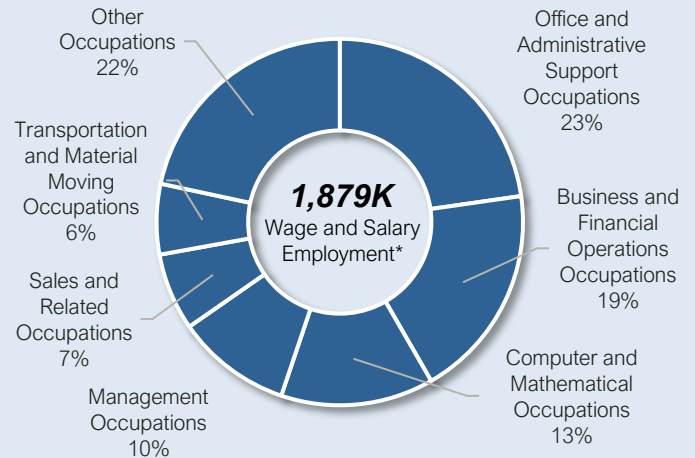


Target Sector Workforce Landscape

The workforce supporting Texas' Professional Services and Corporate Operations target clusters is very large and diverse, with around 1.8 million wage and salary employees spanning a wide variety of occupations. Office and administration support occupations represent the largest share of employment, along with business and financial occupations, computer and mathematical occupations, and management occupations.

Competency areas related to analytical thinking and communication are in high demand, including customer and personal service, English language, computers and electronics, and mathematics. In recent years, analytical competency areas including complex problem solving and programming have become more important to the sector. Top occupations and competencies for the target clusters are identified in the tables below.

Workforce Distribution by Occupation Type (2021)



Key Detailed Occupations

| Top Occupations by Emp. (2021) | Emp. (2021) |
|---------------------------------|-------------|
| Computer Occupations | 240,860 |
| Business Operations Specialists | 191,650 |
| Financial Specialists | 164,510 |
| Information and Record Clerks | 153,010 |
| Financial Clerks | 108,750 |

| Top Occupations by Jobs Added (2018-21) | Jobs Added (2018-21) |
|---|----------------------|
| Business Operations Specialists | 57,580 |
| Computer Occupations | 31,660 |
| Financial Specialists | 23,350 |
| Top Executives | 19,540 |
| Operations Specialties Managers | 15,530 |

Key Competencies

| Top In-Demand Competency Areas (2021) | | |
|---------------------------------------|-------------------------------|-----------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Customer and Personal Service | Active Listening |
| 2 | English Language | Reading Comprehension |
| 3 | Computers and Electronics | Speaking |
| 4 | Mathematics | Critical Thinking |
| 5 | Administrative | Writing |

| High Growth Competency Areas (2018-21) | | |
|--|-------------------------------|-------------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Sales and Marketing | Complex Problem Solving |
| 2 | Administration & Management | Programming |
| 3 | Transportation | Active Listening |
| 4 | Personnel and Human Resources | Social Perceptiveness |
| 5 | Psychology | Writing |

Data Sources: IMPLAN, Data Library, Texas, (2018-21); Guidehouse Analysis

Workforce Themes



Large, Diverse Workforce

Professional Services and Corporate Operations clusters employ over 1.8 million people across a wide variety of occupations.



Analytical Thinking

Professional Services and Corporate Operations clusters require a workforce that can think critically and communicate effectively.



Growth in Programming

Programming skills have been growing in importance to the Professional Services and Corporate Operations sector.

*Note: Wage and Salary Employment is a headcount of salaried or wage-earning employees. This figure does not include Proprietor Employment, which represents proprietors, partners, and tax-exempt cooperative members.



Professional Services & Corporate Operations in Texas



Business Services and Corporate Headquarters

Deemed the “headquarters of headquarters,” Texas is home to the headquarters of over 50 Fortune 500 businesses. The Lone Star State’s skilled workforce, access to global markets, and unmatched business climate make it an attractive destination for multinational corporations and small businesses alike. The state is home to many prestigious business schools, including 11 within the U.S. News & World Report’s top 100 business schools. Additionally, Texas has topped *Chief Executive*’s list of best states for business every year since the magazine began publishing the rankings in 2001, affirming our position as a premier place to locate and grow a business.

The Business Services and Corporate Headquarters cluster is comprised of 18 industries, including the management of companies and enterprises, as well as a variety of services that support business operations such as engineering, programming, software, legal, and marketing, and management services.

The Metroplex and Central Texas regions are the most concentrated hubs of cluster activity in the state. With its strong workforce pool and connectivity to other markets, the Metroplex region has attracted 24 Fortune 500 headquarters to the Dallas-Fort Worth area, including two in the top 10 — ExxonMobil and McKesson. Central Texas offers high concentrations of business services activity, with particular strength in custom computer programming services and data processing and hosting. The region’s highly skilled workforce and network of innovation assets have helped scale and retain large businesses like Dell Inc. while cultivating the growth of new startups.

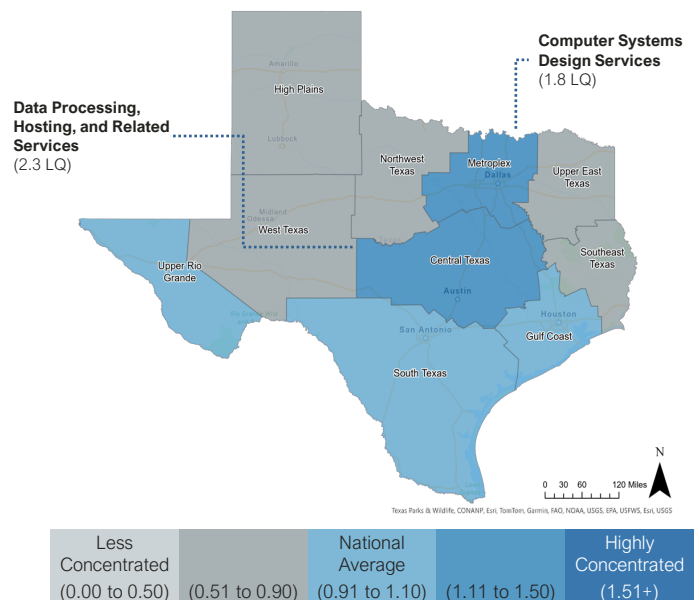
Texas’ diversity of geographies and industries means that businesses of all types can find a community that fits their needs and priorities. Whether you are a technology company interested in engineering talent, a data center in need of affordable real estate, or a new business looking for mentorship, there is a home for your business here in Texas.

Between 2011 and 2021, the Business Services and Corporate Headquarters cluster experienced a 56% increase in employment, a 53% increase in GDP, and an 8% increase in foreign export growth. By 2032, the cluster is expected to have a GDP of \$379 billion — representing 35% growth from 2022.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|---|--|---|
| Magnitude | 2,258K <i>Total Employment (2021)</i> | \$243B <i>GDP Contribution (2021)</i> | \$21B <i>Foreign Exports (2021)</i> |
| Share | 9% <i>Share of U.S. Cluster Total Emp. (2021)</i> | 9% <i>Share of U.S. Cluster GDP (2021)</i> | 10% <i>Share of U.S. Cluster Foreign Exports (2021)</i> |
| Growth | 56% <i>Total Employment Growth (2011 – 21)</i> | 53% <i>GDP Growth (2011 – 21)</i> | 8% <i>Foreign Export Growth (2011 – 21)</i> |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Professional Services & Corporate Operations in Texas



Financial Services

More than a century ago, Dallas was selected as the home of the Federal Reserve's Eleventh District headquarters for its strong banking industry and central location. Texas has built upon this anchor institution to create a thriving and diverse Financial Services cluster. Texas' dynamic, pro-business environment has attracted and cultivated the growth of financial services businesses throughout the state, and many top financial services companies have chosen to locate in Texas, including Charles Schwab, Merrill Lynch, Wells Fargo, Morgan Stanley, Goldman Sachs, UBS Financial Services, USAA, and Fidelity Investments.

The cluster includes six industries that represent a variety of financial services related to banking, non-depository credit intermediation, security and commodity trading, funds, trusts, and other financial investment activities.

Several regions have established national leadership in the Financial Services cluster. The Upper Rio Grande region has a particularly strong concentration of financial services employment and businesses. The region is home to the Reserve Bank of Dallas-El Paso Branch, anchoring the cluster. The Upper Rio Grande is also a center for international trade and investment, due to its proximity to the U.S.–Mexico border. The region's transportation infrastructure and availability of bilingual workers make it an attractive destination for businesses with a presence in Mexico.

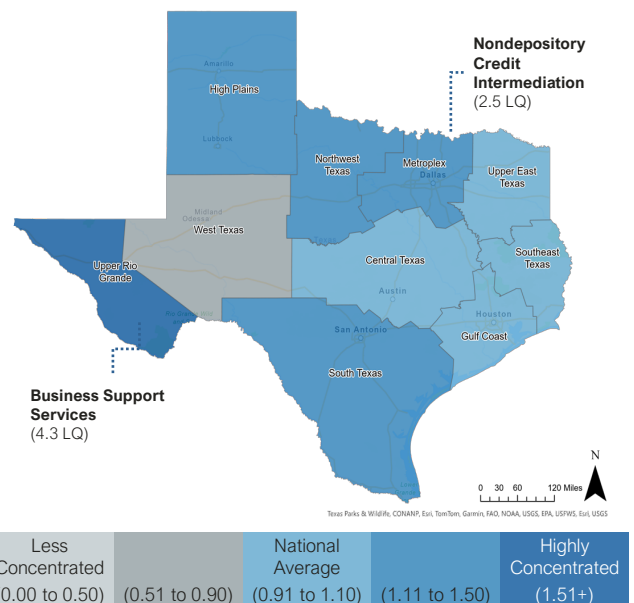
The state's leadership in financial services has paved the way for Texas' competitive fintech industry. University research centers across the state are investing in reshaping financial services and digital asset management. The Fintech Research Lab at The University of Texas at Austin and the Center for the Management of Financial and Digital Asset Technologies at The University of Texas at Dallas are conducting cutting-edge research on the digital transformation of the finance industry. Additionally, The University of Texas at San Antonio was awarded a grant from the National Science Foundation in 2023 to establish the National DigiFoundry, a consortium focused on innovation in digital asset management. Private entities such as Comerica Bank have also unveiled plans to develop business and innovation hubs in Texas to drive advancements within the cluster.

From 2011 to 2021, the cluster experienced 16% growth in employment and 89% growth in GDP. The cluster is expected to experience 13% growth between 2022 to 2032, with an estimated total GDP of \$136 billion by 2032.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|---|---|---|
| Magnitude | 929K Total Employment (2021) | \$94B GDP Contribution (2021) | \$7B Foreign Exports (2021) |
| Share | 11% Share of U.S. Cluster Total Emp. (2021) | 7% Share of U.S. Cluster GDP (2021) | 8% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 16% Total Employment Growth (2011 – 21) | 89% GDP Growth (2011 – 21) | -5% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Rare Earth Elements and Mineral Mining in Texas

About the Rare Earth Elements and Mineral Mining Sector

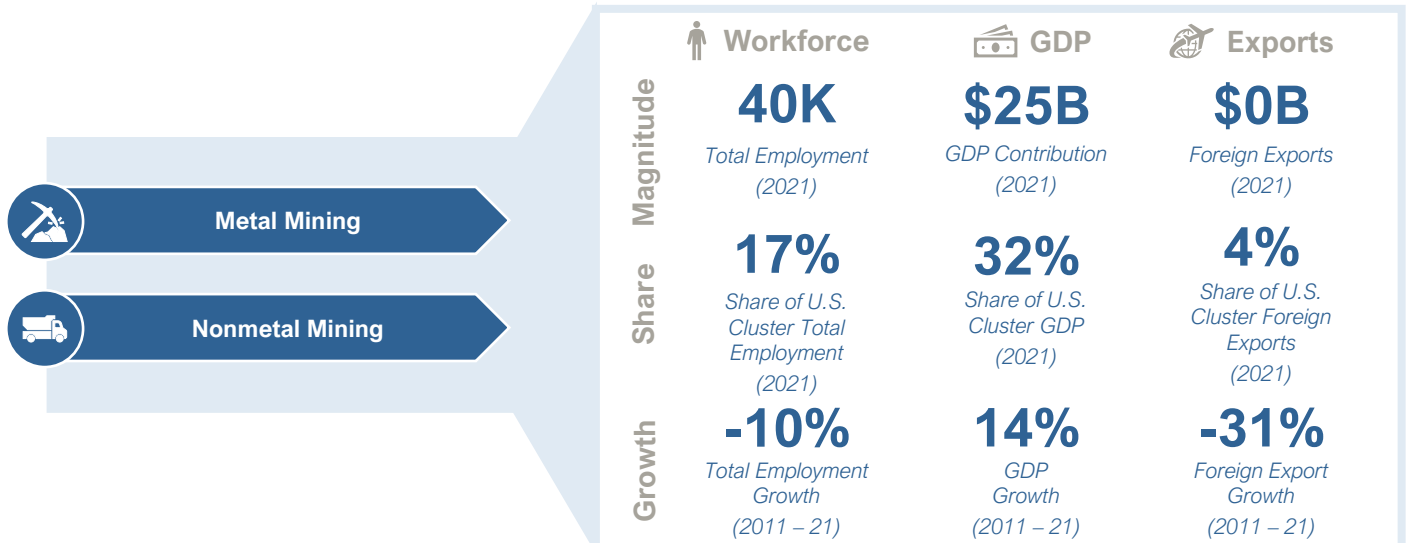
The Rare Earth Elements and Mineral Mining sector is focused on the extraction of both metal and nonmetal elements, including a variety of metal ores, crushed stone, sand, and rare earth elements. Within this sector, the state has identified two clusters positioned for growth in Texas: Metal Mining and Nonmetal Mining.

The clusters within the Rare Earth Elements and Mineral Mining sector play an important part in the development of infrastructure and provide vital inputs for a variety of businesses. Metal mining supports high-tech and defense industries essential to economic and national security, and nonmetal mining products are essential to construction and oil extraction. Texas' deposit of natural resources combined with its mining expertise have positioned it as a leader within Rare Earth Elements and Metal Mining.



Rare Earth Elements & Mineral Mining Clusters

Target Clusters Fast Facts



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Sector Opportunities

Strengths

Texas has a mining legacy.

Texas' long history with mining has resulted in a robust network of sector resources and businesses.

Texas is leading in mining innovation.

Educational institutions and businesses in Texas are advancing mining practices to improve their safety and efficiency.

Texas' workforce is equipped to support the sector.

The sector's workforce includes a mix of specialized occupations that enable the extraction, manipulation, and transportation of raw materials.

Opportunities

Texas is positioned to capitalize on the growing demands on the sector.

Texas is equipped to capitalize on the increasing demand for onshoring production of rare earth elements and mineral mining.

Texas can support innovation dissemination and commercialization.

Supporting the commercialization and adoption of new innovations can help grow the sector and increase productivity.

The state can prepare the workforce for high-demand roles.

Advocating for the development of mining-related degrees and certifications can help prepare for increased demand for occupations related to rare earth element mining.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.



Rare Earth Elements and Mineral Mining in Texas

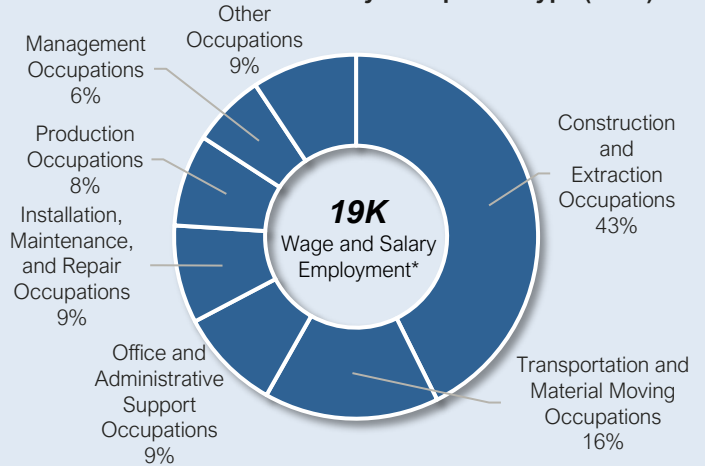


Target Sector Workforce Landscape

The target clusters that make up Texas' Rare Earth Elements and Mineral Mining sector are supported by a relatively small and specialized workforce. As shown in the chart at right, over 40% of total wage and salary employment is represented by construction and extraction occupations. Top occupations in this sector enable the extraction and transportation of raw materials, including extraction workers and material moving occupations.

In-demand competency areas include mechanical skills, customer and personal service, mathematics, and public safety and security. In recent years, target clusters in the Rare Earth Elements and Mineral Mining sector have added jobs in areas that support operations, including top executives, business operations specialists, and supervisors of construction and extraction workers. Top occupations and competencies for the target clusters are identified in the tables below.

Workforce Distribution by Occupation Type (2021)



Key Detailed Occupations

| Top Occupations by Emp. (2021) | Emp. (2021) |
|--|-------------|
| Extraction Workers | 5,240 |
| Construction Trades Workers | 1,910 |
| Motor Vehicle Operators | 1,800 |
| Material Moving Workers | 1,040 |
| Supervisors of Construction and Extraction Workers | 1,030 |

| Top Occupations by Jobs Added (2018-21) | Jobs Added (2018-21) |
|--|----------------------|
| Top Executives | 170 |
| Motor Vehicle Operators | 130 |
| Occupational Health and Safety Specialists and Technicians | 120 |
| Sales Representatives, Services | 50 |
| Business Operations Specialists | 50 |

Key Competencies

| Top In-Demand Competency Areas (2021) | | |
|---------------------------------------|-----------------------------|-----------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Mechanical | Active Listening |
| 2 | Customer & Personal Service | Critical Thinking |
| 3 | English Language | Monitoring |
| 4 | Mathematics | Operation and Control |
| 5 | Public Safety and Security | Operations Monitoring |

| High Growth Competency Areas (2018-21) | | |
|--|-------------------------------|-----------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | English Language | Speaking |
| 2 | Customer & Personal Service | Operation and Control |
| 3 | Public Safety and Security | Time Management |
| 4 | Telecommunications | Reading Comprehension |
| 5 | Administration and Management | Active Listening |

Data Sources: IMPLAN, Data Library, Texas, (2018-21); Guidehouse Analysis

Workforce Themes



Specialized Workforce

Nearly half of Rare Earth Elements and Mineral Mining cluster employees are in construction and extraction occupations.



Movement of Goods

Top occupations in Rare Earth Elements and Mineral Mining enable the extraction and movement of raw materials.



Growth in Operations

The Rare Earth Elements and Mineral Mining sector has added jobs in operations roles in recent years.

*Note: Wage and Salary Employment is a headcount of salaried or wage-earning employees. This figure does not include Proprietor Employment, which represents proprietors, partners, and tax-exempt cooperative members.



Rare Earth Elements and Mineral Mining in Texas



Metal Mining

From the silver mines of the Upper Rio Grande to the copper mines in the Northwest portion of the state, metal mining has helped shape Texas' economy for centuries. Texas is a national leader in the Metal Mining cluster, accounting for 32% of the total cluster GDP in the United States. Texas' Metal Mining cluster is entering a new era of importance as the state sits on a deposit of rare earth elements (REEs) and critical minerals. Federal and state leaders are prioritizing the onshore development of REEs and other critical materials due to their importance to industries vital to our economic and national security. For example, cobalt is essential for manufacturing smartphones and is an important component of permanent magnets used in military technologies such as aircraft and precision-guided missiles.

The Metal Mining cluster includes six industries that encompass the mining of copper, nickel, metal, lead, zinc, iron, gold, silver, uranium-radium-vanadium, and other metal ores.

Texas has an overall higher concentration of Metal Mining employment than the national average, with the highest concentration seen in the Gulf Coast region. Notably, the region is being considered for the development of a deep-sea mining processing plant that would harvest nickel, cobalt, copper, and manganese. Though it does not have a current concentration of metal mining employment, the Upper Rio Grande region is a historical hub for mining and well-positioned for cluster growth. The Upper Rio Grande's large deposit of REEs, including the large Round Top deposit in Sierra Blanca, makes it an attractive destination for domestic REE mining businesses.

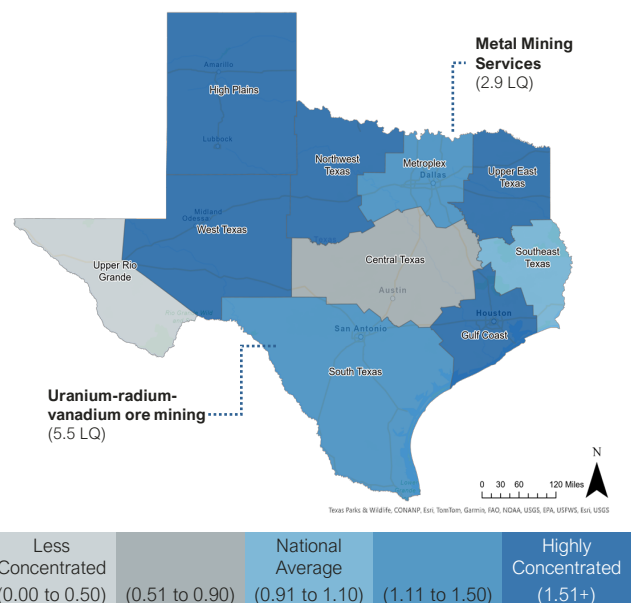
Texas is also leading innovation within the cluster. As a part of the Mining Innovations for Negative Emissions Resource Recovery program, The University of Texas at Austin is collaborating with top universities across the globe to develop market-ready technologies that will increase domestic supplies of critical elements. The research is being supported by a \$5 million grant from the U.S. Department of Energy.

Between 2011 and 2021, the cluster experienced a decline in employment and an 8% increase in GDP. However, by 2032, cluster GDP is estimated to grow to \$20 billion, representing a 27% increase from 2022.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|---|--|---|
| Magnitude | 14K Total Employment (2021) | \$11B GDP Contribution (2021) | \$0B Foreign Exports (2021) |
| Share | 16% Share of U.S. Cluster Total Emp. (2021) | 32% Share of U.S. Cluster GDP (2021) | 1% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | -24% Total Employment Growth (2011 – 21) | 8% GDP Growth (2011 – 21) | -67% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Rare Earth Elements and Mineral Mining in Texas



Nonmetal Mining

The foundation of Texas' communities and industries are formed in part by the Nonmetal Mining cluster. Stone and clay — which are principal components in the manufacturing of cement — are used in the development of our streets and sidewalks. Sand is an essential ingredient in the construction of our homes, businesses, and schools. Sand is also a critical component in the extraction of oil and even used as an ingredient in toothpaste. Every industry depends on the Nonmetal Mining cluster, and development in Texas wouldn't be possible without the businesses and workers essential to the cluster's success.

The Nonmetal Mining cluster is comprised of eight industries, including the mining and extraction of a variety of nonmetal materials such as stone, sand, clay, potash, and phosphate.

Most regions in Texas have a higher concentration of Nonmetal Mining employment than the national average. The High Plains region is home to a Nonmetal Mining hub, supported by large deposits of valuable natural resources. The nonmetallic mineral service industry is seven times more concentrated in the High Plains region than the national average.

An increasing demand for sand to support the oil and gas industry has contributed to cluster growth. West Texas, which is located on the Permian Basin, has seen an increase in sand mines in recent years. As of 2022, the West Texas region was home to an estimated 24 sand mines. Of these, seven were mobile mines — innovative temporary mines designed to transport sand to oil and gas wells from nearby sand deposits, thereby reducing the cost and emissions associated with drying and transporting sand over longer distances.

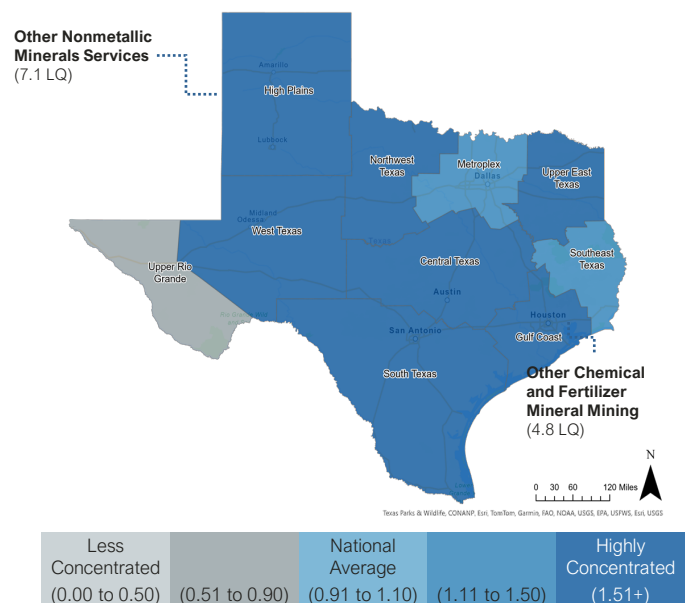
With Texas universities leading the way, mining technology has matured to incorporate machine learning, robotics, and automation to improve safety and efficiency. Within the Nonmetal Mining cluster, there is a particular emphasis on innovating to improve recycling to ensure resources are not exhausted and environmental impacts are minimized.

The cluster experienced 17% GDP growth from 2011 to 2021. By 2032, the cluster is expected to contribute \$24 billion to the state's GDP, which would represent a 25% increase from 2022.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|---|--|--|
| Magnitude | 26K Total Employment (2021) | \$14B GDP Contribution (2021) | \$0B Foreign Exports (2021) |
| Share | 18% Share of U.S. Cluster Total Emp. (2021) | 32% Share of U.S. Cluster GDP (2021) | 15% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 0% Total Employment Growth (2011 – 21) | 17% GDP Growth (2011 – 21) | -18% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis

SECTOR Profile



Transportation and Logistics in Texas

About the Transportation and Logistics Sector in Texas

The Transportation and Logistics sector is focused on the movement of people and goods via multimodal transportation as well as the distribution of products through physical and electronic retailers. Within this sector, the state has identified two target clusters: Distribution and E-Commerce, and Transportation and Aviation Services.

Texas' central location within the United States, robust transportation system, and efficient logistics infrastructure have made our state one of the most globally connected locations in the world. Texas leads the nation in exports and is home to the number one port in the country as of 2023 — Port Laredo. This unique combination of factors offers businesses direct access to global trade and the opportunity to easily reach customers worldwide.



Transportation and Logistics Target Clusters

Target Clusters Fast Facts

| | Workforce | GDP | Exports |
|------------------|---|---|---|
| Magnitude | 2,774K <i>Total Employment (2021)</i> | \$303B <i>GDP Contribution (2021)</i> | \$40B <i>Foreign Exports (2021)</i> |
| Share | 9% <i>Share of U.S. Cluster Total Employment (2021)</i> | 10% <i>Share of U.S. Cluster GDP (2021)</i> | 12% <i>Share of U.S. Cluster Foreign Exports (2021)</i> |
| Growth | 23% <i>Total Employment Growth (2011 – 21)</i> | 34% <i>GDP Growth (2011 – 21)</i> | -3% <i>Foreign Export Growth (2011 – 21)</i> |

Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis

Distribution and E-Commerce

Transportation and Aviation Services



Sector Opportunities

Strengths

Texas' multimodal Transportation and Logistics infrastructure is highly connected.

The state's robust network of roads and airports facilitates the efficient movement of goods and people locally, domestically, and globally.

Texas is strategically positioned for both domestic and international transportation.

The state's central location provides efficient domestic access and direct international access to Mexico and the rest of the world.

Texas' Transportation and Logistics businesses provide the foundation for growth across target sectors.

The state currently has strengths in wholesale trade and air transportation, which enable the movement of goods and people.

Opportunities

The state can continue to support the advancement of critical Transportation and Logistics infrastructure.

Texas can advance the connectivity and resilience of critical infrastructure by continuing to invest in airports, rail, and roadways.

The state is poised to excel as a global leader in transportation.

Texas' growing presence on the international stage will require growth, innovation, and industry leadership in transportation.

Transportation and Logistics must grow to support the state's long-term economic success.

Transportation and Logistics services and infrastructure will be critical in enabling the growth of the state's target sectors.

Quantitative and qualitative research was performed May 2023 through May 2024; data cited reflects the then-most current and/or granular information for the time periods noted.



Transportation and Logistics in Texas

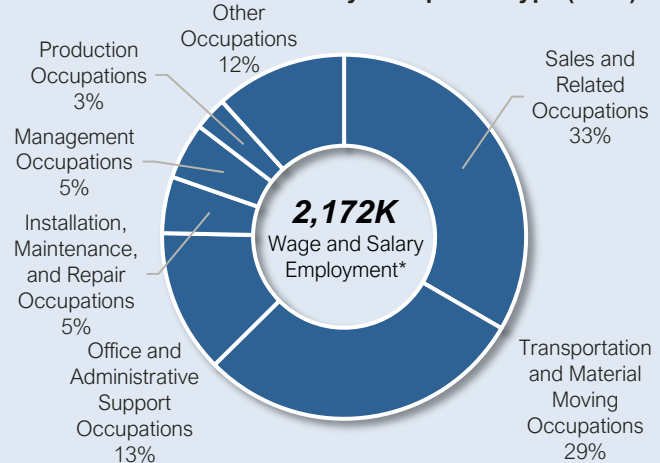


Target Sector Workforce Landscape

The two clusters supporting Texas' Transportation and Logistics sector employ a large and specialized workforce comprised of over 2 million wage and salary employees. As shown in the chart at right, around a third of these jobs are in sales and related occupations and another third are in transportation and material moving occupations.

Competency areas that enable communication, sales, and administration are in high demand for Texas' transportation and logistics target clusters. In recent years, telecommunications, communications, and media have increased in importance for the sector, along with systems evaluation and analysis. Top occupations and competencies for the target clusters are identified in the tables below.

Workforce Distribution by Occupation Type (2021)



Key Detailed Occupations

| Top Occupations by Emp. (2021) | Emp. (2021) |
|--|-------------|
| Retail Sales Workers | 497,420 |
| Material Moving Workers | 372,590 |
| Motor Vehicle Operators | 192,610 |
| Sales Representatives, Wholesale and Manufacturing | 103,970 |
| Information and Record Clerks | 93,270 |

| Top Occupations by Jobs Added (2018-21) | Jobs Added (2018-21) |
|---|----------------------|
| Material Moving Workers | 182,070 |
| Top Executives | 16,240 |
| Business Operations Specialists | 11,670 |
| Supervisors of Transportation and Material Moving Workers | 9,920 |
| Health Technologists and Technicians | 3,620 |

Key Competencies

| Top In-Demand Competency Areas (2021) | | |
|---------------------------------------|-------------------------------|-----------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Customer & Personal Service | Active Listening |
| 2 | English Language | Speaking |
| 3 | Mathematics | Reading Comprehension |
| 4 | Sales and Marketing | Critical Thinking |
| 5 | Administration and Management | Monitoring |

| High Growth Competency Areas (2018-21) | | |
|--|----------------------------|--------------------|
| Rank | Knowledge Area | Skill Area |
| 1 | Transportation | Active Listening |
| 2 | Public Safety and Security | Systems Evaluation |
| 3 | Telecommunications | Troubleshooting |
| 4 | Communications and Media | Writing |
| 5 | Law and Government | Systems Analysis |

Data Sources: IMPLAN, Data Library, Texas, (2018-21); Guidehouse Analysis

Workforce Themes



Specialized Workforce

Two-thirds of all target cluster employees are in sales or transportation and material moving occupations.



Customer Service

Transportation and Logistics businesses require a workforce that can effectively serve customers.



Growth in Optimization

Systems evaluation and analysis are growing in importance to the sector.

*Note: Wage and Salary Employment is a headcount of salaried or wage-earning employees. This figure does not include Proprietor Employment, which represents proprietors, partners, and tax-exempt cooperative members.



Transportation and Logistics in Texas



Distribution and E-Commerce

Texas' central location, robust transportation system, network of retail and warehousing companies, and availability of land make it the ideal location for businesses within the Distribution and E-Commerce cluster. As delivery speed expectations grow and omnichannel distribution strategies gain prominence, businesses managing complex logistics and heightening demands turn to Texas to improve efficiencies and accelerate order fulfillment cycles.

The Distribution and E-Commerce cluster is comprised of 23 industries, including a variety of wholesale and retail activities as well as warehousing, storage, and commercial and industrial equipment rental. Companies within the cluster provide distribution services to both businesses and individuals.

Texas' unique strengths and characteristics have fostered the growth of several Distribution and E-Commerce hubs across the state. With its proximity to Mexico, the Upper Rio Grande region is a center for binational distribution. General retail distribution has historically been the dominant industry within the region's Distribution and E-Commerce cluster. Notably, Amazon selected the region to develop its \$250 million distribution center, and TJX invested \$150 million to develop a distribution center at the El Paso International Airport. However, the region's cluster is becoming increasingly diversified, with growth opportunities in the distribution of pharmaceuticals, agricultural products, and medical devices.

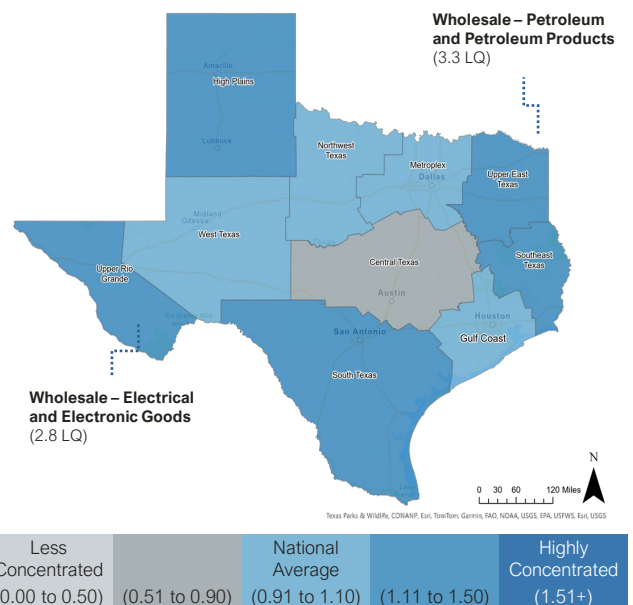
Businesses and universities across Texas are advancing innovative distribution technologies and techniques. Amazon has five distribution centers in Houston, including a five-story Richmond warehouse that uses robotics to manage its more than 40 million units of inventory. In Central Texas, Walmart established a 1.5 million-square-foot next-generation facility pioneering its latest fulfillment technologies. Additionally, the Texas A&M University's Center for Distribution Research and Education is home to the Global Supply Chain Laboratory (GSCL). GSCL works collaboratively with industry partners to create and disseminate cutting-edge solutions for wholesale and industrial distribution challenges and address distribution and supply chain challenges.

Between 2011 and 2021, the cluster experienced growth in total employment, GDP, and foreign exports. From 2022 to 2032, the cluster is anticipated to experience 41% GDP growth, with a GDP contribution of \$402 billion in 2032.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|---|---|---|
| Magnitude | 2,219K <i>Total Employment (2021)</i> | \$265B <i>GDP Contribution (2021)</i> | \$30B <i>Foreign Exports (2021)</i> |
| Share | 9% <i>Share of U.S. Cluster Total Emp. (2021)</i> | 10% <i>Share of U.S. Cluster GDP (2021)</i> | 12% <i>Share of U.S. Cluster Foreign Exports (2021)</i> |
| Growth | 18% <i>Total Employment Growth (2011 – 21)</i> | 37% <i>GDP Growth (2011 – 21)</i> | 3% <i>Foreign Export Growth (2011 – 21)</i> |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis



Transportation and Logistics in Texas



Transportation and Aviation Services

With over 300 airports and 314,000 miles of public roads, Texas has one the nation's largest networks of highways, interstates, and general aviation airports. The state's central location and ability to efficiently move goods and people locally, domestically, and internationally has established it as a leader in the Transportation and Aviation Services cluster.

The Transportation and Aviation Services cluster includes four industries: air transportation, truck transportation, transit and ground passenger transportation, and scenic and sightseeing transportation and support activities for transportation.

Many of Texas' regions are hubs for the Transportation and Aviation Services cluster. The state has over 66,000 trucking companies moving a variety of products, including agricultural products, petroleum, coal, computers, electronics, chemicals, machinery, and transportation equipment. Several regions' cluster leadership is supported by their proximity to major ports and waterways, access to other states, or location on the U.S.–Mexico border.

Texas is also uniquely positioned to excel in aviation services. With our six major international airports, Texas businesses and residents can access most parts of the contiguous United States within four hours, and direct international flights are available to nearly every part of the world. Texas is home to the headquarters for American Airlines and Southwest Airlines and is a major hub for United Airlines. Texas is also home to some of the most innovative companies in the aviation industry, including a mixture of startups and household names like Airbus.

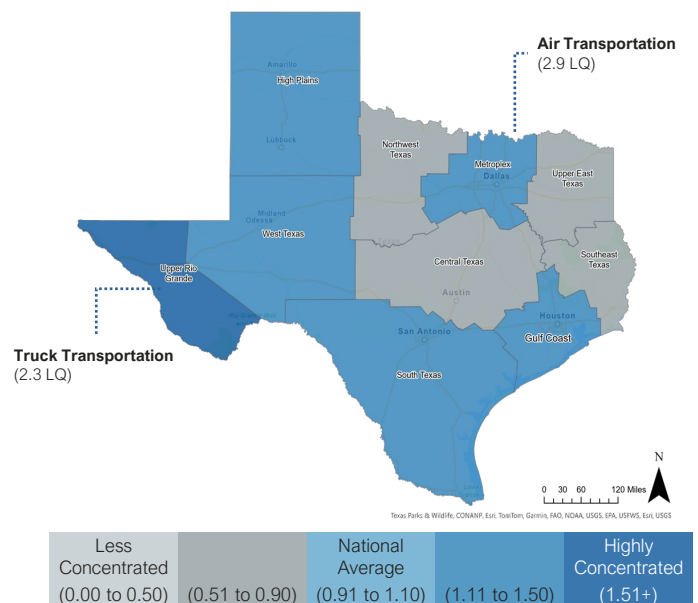
The Texas Department of Transportation (TxDOT) has partnered with The University of Texas to fund the Center for Transportation Research and with Texas A&M to fund the Texas A&M Transportation Institute. Both centers are nationally recognized as top destinations for transportation research and have pioneered new solutions related to connected transportation, infrastructure, and roadway performance. Additionally, TxDOT launched an "Innovative Transportation in Texas" program to identify, evaluate, and develop innovative solutions to meet our state's growing transportation needs.

From 2011 to 2021, the cluster's workforce grew by 48% and GDP grew by 9%. Looking ahead, the cluster is expected to experience 29% GDP growth the coming decade, with an estimated GDP contribution of \$48 billion by 2032.

Cluster Fast Facts

| | Workforce | GDP | Exports |
|------------------|---|--|--|
| Magnitude | 555K Total Employment (2021) | \$38B GDP Contribution (2021) | \$10B Foreign Exports (2021) |
| Share | 10% Share of U.S. Cluster Total Emp. (2021) | 10% Share of U.S. Cluster GDP (2021) | 12% Share of U.S. Cluster Foreign Exports (2021) |
| Growth | 48% Total Employment Growth (2011 – 21) | 9% GDP Growth (2011 – 21) | -19% Foreign Export Growth (2011 – 21) |

Cluster Employment Concentration (2021)



Data Sources: IMPLAN, Regions Industry Data, Texas and United States, (2011-21); Guidehouse Analysis

APPENDIX C: PROCESS AND METHODOLOGY

Overview of Methodology

During the development of the “*Bigger. Better. Texas.*” plan, a variety of qualitative and quantitative analyses were conducted to inform the development of our data-driven, research-backed strategy.

In this section, the methodologies for the following key analyses are outlined:

- **Economic Analysis:** A series of analyses conducted in accordance with our pillars — business and industry, innovation and entrepreneurship, infrastructure, and workforce. The findings from the economic analysis informed our understanding of Texas’ current state economy.
- **Plans Analysis:** The review and assessment of over 40 plans from private, public, and non-profit entities at the state, regional, county, and local level informing Texas’ economic development. The analysis informed our understanding of economic development priorities across the state.
- **Target Sector Analysis:** The selection and analysis of the target sectors and clusters. The analysis identifies industries that will strengthen our competitive advantage and enhance our global competitiveness.

Economic Analysis

The economic analysis was a foundational part of the plan’s development that focused on establishing an understanding of Texas’ economy through the lenses of the plan’s core pillars: Business and Industry, Innovation and Entrepreneurship, Workforce, and Infrastructure. The analysis aimed to pinpoint Texas’ strengths, assess how the state compares to peer states and countries, and identify opportunities to advance the state’s global competitiveness.

The analysis incorporated qualitative research, quantitative evaluations, and stakeholder feedback that was synthesized and cross-referenced to identify key takeaways. Peer states and countries were selected based on their economic and/or demographic similarities to Texas (e.g., rate of population growth, rate of GSP/GDP growth). Economic analyses were conducted using the methodology described below:

Step 1. Identified and Validated Key Economic Analyses: In accordance with the core pillars, an outline of analyses addressing key questions related to the current state of Texas’ economy was developed. The outline was reviewed by stakeholders and iterated on to incorporate their feedback.

Step 2. Identified Sources and Gathered Data: Based on the finalized outline, data sources were identified, and data was extracted. A core source of the analyses was the economic impact software provider IMPLAN. Other sources frequently cited were the U.S. Census Bureau, American Community Survey, and the U.S. Chamber of Commerce.

Step 3. Analyzed Data: Values pulled from the sources were analyzed to identify trends and key takeaways. Activities in this step included adjusting figures for inflation (where appropriate), comparing Texas figures against peer states and countries, designing the visual representation of the data, and more.

Step 4. Validated Key Takeaways and Finalized Analyses: Findings were cross-referenced with desktop research and stakeholder feedback. Several rounds of iteration were completed to reflect stakeholder feedback and confirm consistency across publications.

Plan Analysis

Texas’ economic development is informed by a variety of plans developed by entities at the state, regional, county, and local level. To ensure key themes from already existing plans are reflected, a plans analysis was conducted during the initial phase of strategic planning for “*Bigger. Better. Texas.*”

The plans analysis incorporated a multi-step process that assessed a sample of plans based on defined criteria. The multi-step process was designed to ensure that the sample of plans selected are reflective of Texas’ geographic diversity and robust economic development ecosystem. The plans analysis was executed as follows:

Step 1. Mapped Plans Landscape: Texas’ economic development plans landscape was mapped by geography (state, region, county, and local) and type (public, private, and non-profit). This provided an overview of the pool of plans available for consideration in the analysis.

Step 2. Designed Selection Criteria: The landscape overview was used to design the criteria that facilitated the selection of plans for the analysis. The criteria included sampling plans that reflected a mixture of geographies and entity types. This ensured that the plans selected for analysis were reflective of Texas’ economic development landscape. A full list of analyzed plans is included in the table below.

Step 3. Analyzed Plans: Selected plans were reviewed and analyzed to identify key points and common themes.

Step 4. Identified Key Takeaways and Opportunities: Based on the review and analysis of the plans, key takeaways and opportunities were identified and incorporated in the Statewide Economic Development Strategic Plan.

A list of the plans incorporated into the plans analysis are outlined below:

| Region | Organization | Plan Name |
|---------------|--|---|
| Statewide | Economic Incentive Oversight Board | <i>Economic Incentive Oversight Board Legislative Report</i> |
| Statewide | Texas Association of Business | <i>Texas Competitiveness and Resiliency Strategy</i> |
| Statewide | Texas Workforce Investment Council | <i>Accelerating Alignment: Texas Workforce System Strategic Plan for Fiscal Years 2024 - 2031</i> |
| Statewide | The Texas Economic Development Council | <i>Texas Economic Development Council Strategic Plan</i> |
| Statewide | Travel Texas | <i>Travel Texas Strategic Marketing Plan</i> |
| Central Texas | Austin Energy | <i>Austin Energy Strategic Plan</i> |
| Central Texas | Brazos Valley Council of Governments | <i>Brazos Valley Council of Governments Comprehensive Economic Development Strategy</i> |
| Central Texas | Capital Area Council of Governments | <i>Capital Area Council of Governments Comprehensive Economic Development Strategy</i> |

| | | |
|-----------------|--|---|
| Central Texas | Concho Valley Economic Development District | <i>Concho Valley Economic Development District Comprehensive Economic Development Strategy</i> |
| Central Texas | Development District of Central Texas | <i>Development District of Central Texas Comprehensive Economic Development Strategy</i> |
| Central Texas | Heart of Texas Council of Governments | <i>Heart of Texas Council of Governments Comprehensive Economic Development Strategy</i> |
| Gulf Coast | Greater Houston Partnership | <i>Houston Next</i> |
| Gulf Coast | Houston-Galveston Area Council | <i>Gulf Coast Economic Development District Comprehensive Economic Development Strategy</i> |
| High Plains | City of Amarillo and Amarillo Economic Development Corporation | <i>Align Amarillo Economic Development Strategic Plan</i> |
| High Plains | Nortex Economic Development District | <i>Nortex Economic Development District Comprehensive Economic Development Strategies</i> |
| High Plains | Panhandle Regional Planning Commission | <i>Texas Panhandle Comprehensive Economic Development Strategy</i> |
| High Plains | South Plains Association of Governments | <i>South Plains Economic Development District Economic Recovery and Resiliency Plan</i> |
| High Plains | West Central Texas Council of Governments | <i>West Central Texas Council of Governments Region Comprehensive Economic Development Strategy</i> |
| Metroplex | Tarrant Regional Water District | <i>Tarrant Regional Water District Strategic Plan</i> |
| Metroplex | Texoma Council of Governments | <i>Texoma Economic Development District Comprehensive Economic Development Strategy</i> |
| Metroplex | North Central Texas Council of Governments | <i>North Central Texas Council of Governments Comprehensive Economic Development Strategy</i> |
| Northwest Texas | Nortex Economic Development District | <i>Nortex Economic Development District Comprehensive Economic Development Strategies</i> |
| Northwest Texas | West Central Texas Council of Governments | <i>West Central Texas Council of Governments Region Comprehensive Economic Development Strategy</i> |
| South Texas | Alamo Area Council of Governments | <i>AACOG Economic Development District Comprehensive Economic Development Strategy</i> |
| South Texas | Boerne Kendall County Economic Development Council | <i>Boerne/Kendall County Economic Development Strategy Plan</i> |
| South Texas | City of Laredo | <i>City of Laredo Economic Development Strategy</i> |
| South Texas | City of San Antonio | <i>Economic Development Strategic Framework City of San Antonio Texas</i> |

| | | |
|------------------|--|---|
| South Texas | Coastal Bend Council of Governments | <i>Coastal Bend Economic Development District Comprehensive Economic Development Strategy</i> |
| South Texas | CPS Energy | <i>CPS Energy Vision 2027</i> |
| South Texas | Golden Crescent Regional Planning Commission | <i>Golden Crescent Five-Year Comprehensive Economic Development Strategy</i> |
| South Texas | Kerr Economic Development Corporation | <i>Kerrville 2050 Comprehensive Plan</i> |
| South Texas | Lower Rio Grande Valley Development Council | <i>Lower Rio Grande Valley Regional Strategic Plan</i> |
| South Texas | Middle Rio Grande Development Council | <i>Middle Rio Grande Development Council Comprehensive Economic Development Strategy</i> |
| South Texas | South Texas Development Council | <i>South Texas Development Council Comprehensive Economic Development Strategy</i> |
| South Texas | Starr County Industrial Foundation (SCIF) | <i>Starr County Economic Development Plan</i> |
| Southeast Texas | Deep East Texas Council of Governments | <i>Deep East Texas Council of Governments and Economic Development District Comprehensive Economic Development Strategy</i> |
| Southeast Texas | Greater Houston Partnership | <i>Houston Next</i> |
| Southeast Texas | South East Texas Economic Development District Economic Development Strategy | <i>South East Texas Regional Planning Commission</i> |
| Upper East Texas | Arkansas Texas Regional Economic Development | <i>Tap Into Texarkana</i> |
| Upper East Texas | Ark-Tex Area Council of Governments | <i>The Northeast Texas Economic Development District Comprehensive Economic Development Strategy</i> |
| Upper East Texas | East Texas Council of Governments | <i>East Texas Economic Development District Comprehensive Economic Development Strategy</i> |
| Upper Rio Grande | El Paso Electric | <i>El Paso Electric Transforming Our Strategic Plan</i> |
| Upper Rio Grande | Rio Grande Council of Government | <i>West Texas Economic Development District Comprehensive Economic Development Strategy</i> |
| Upper Rio Grande | The Borderplex Alliance | <i>The 2025 Ascend Plan</i> |
| West Texas | Concho Valley Economic Development District | <i>Concho Valley Economic Development District Comprehensive Economic Development Strategy</i> |
| West Texas | Permian Basin Regional Planning Commission | <i>Permian Basin Regional Planning Commission Comprehensive Economic Development Strategy</i> |
| West Texas | West Central Texas Council of Governments | <i>West Central Texas Council of Governments Region Comprehensive Economic Development Strategy</i> |

Target Sector Analysis

A crucial part of strategic plan development was the selection of the target sectors and clusters. Identifying target sectors and clusters for Texas was key to establishing strategic initiatives that strengthen our competitive advantage and enhance our global competitiveness.

Within this plan, 10 target sectors comprised of 23 target clusters were identified. The selection process required a method that is free of bias, data-driven, and holistic in understanding what drives our state's economy. The methodology for the identification of the target sectors (and its clusters) as well as the sector forecast calculations are outlined below.

Sector and Cluster Selection

The target sector and cluster selection methodology consisted of three major steps, with several activities falling below each step. At a high level, the target cluster selection methodology was designed to select a wide variety of targets for the state, spanning from historical strengths to emerging opportunities. The flexible methodology prioritized industries that are material to the statewide economy, either due to significant presence across regions or their ability to advance the statewide economy, and industries that create numerous jobs for Texans. The resulting target industry sectors and clusters included in the plan reflect these guiding principles.

The key sources leveraged for the sector and cluster selection were Harvard Business School (HBS) U.S. Cluster Mapping Project and the economic impact software provider IMPLAN. Additional sources incorporated for the analysis are identified throughout the steps. The selection analysis included these steps:

Step 1. Define: The team developed a comprehensive list of traded (i.e., not services) clusters that were then analyzed to identify and select target clusters. As a starting point, this analysis used existing cluster definitions from the Harvard Business School (HBS) U.S. Cluster Mapping Project. Additional clusters were added based on recent industry trends. This process results in 63 clusters, which are groups of industries defined by IMPLAN sector.

The steps executed to generate the list of clusters are outlined below:

1. Adopted Harvard Business School cluster definitions and redefined using 2022 NAICS codes: Used HBS U.S. Cluster Mapping traded cluster definitions at the 6-digit NAICS level. The HBS clusters, which uses 2007 NAICS codes, were redefined using 2022 NAICS codes using Bureau of Labor Statistics (BLS) Industry Classification conversion tables. The only modification to these clusters was splitting the Oil and Gas cluster into two clusters: Oil and Gas Extraction, Production, and Transportation; and Petroleum Refining and Chemicals.
2. Added additional clusters: Because the HBS clusters were defined about a decade ago, additional clusters were added to capture key trends in recent years — for example, Artificial Intelligence, Biotechnology, AgTech, and Advanced Manufacturing. Texas state and regional planning documents and national trends were used to identify which clusters should be added. To define each of these additional clusters using NAICS codes, the following sources were consulted:
 - a. Centers of Excellence, Los Rios Community College District, Valley Vision, and Burris Service Group, 2015. Advanced Manufacturing Cluster: Workforce Needs Assessment.
 - b. Kane, Sharon and Vanessa Shonkwiler, 2022. Defining Progress and Potential: An Assessment of the AgTech Industry in Georgia.

- c. Harris, Christine, Margaret Collins, and Dennis Cheek, 2013. America’s Creative Economy: A Study of Recent Conceptions, Definitions, and Approaches to Measurement Across the USA.
 - d. Mutis, Santiago, 2020. Privately Held AI companies by Sector. Center for Security and Emerging Technology.
 - e. Yum, Seungil, 2021. The Cluster Characteristics of Biotechnology Industries and Their Effect on Regional Innovation Systems. Industrial Biotechnology.
 - f. BLS, 2010. Green Goods and Services Industries by NAICS code.
3. Modified additional cluster definitions: To ensure the added cluster definitions are fit for purpose, some were modified by removing specific industries at the 6-digit NAICS level. These NAICS codes were removed based on the guiding principle: *To be included in the cluster, the industry must directly contribute to the cluster rather than only being affected by downstream implications.*
 4. Redefined clusters using IMPLAN data: Data on employment, output, and exports were provided by IMPLAN. The clusters defined at the 6-digit NAICS level were matched with IMPLAN codes based on IMPLAN sector to NAICS bridges provided by IMPLAN. IMPLAN sectors are typically aligned with 3- or 4-digit NAICS codes. As a result of aligning clusters defined at the 6-digit NAICS level to industries defined at the 3- or 4-digit NAICS level, this step broadened the cluster definitions.
 5. Reviewed clusters after NAICS-IMPLAN bridges and modified as needed: After redefining clusters using IMPLAN sectors, some industries were removed from clusters if the new definition was too broad to include in the cluster. For example, the Creative cluster includes NAICS 459920 – Art Dealers. However, when matched with the broader IMPLAN sectors, this was translated to “Retail – Miscellaneous store retailers” and “Retail – Non-store retailers”. Art dealers account for a small portion of these broad categories and including them in the Creative cluster would be misleading; this IMPLAN sector was therefore removed from the Creative cluster.

The result of these steps is a list of 63 clusters defined by IMPLAN sector. Importantly, these clusters are not mutually exclusive (i.e., the same industry may be included in multiple clusters). While the HBS clusters are mutually exclusive, the steps above introduce non-mutual exclusion in several places:

1. Converting HBS clusters from 2007 NAICS codes to 2022 NAICS codes.
2. The industries included in the added clusters overlap with the HBS clusters.
3. Non-one-to-one mapping between NAICS codes and IMPLAN sectors.

As a result, clusters may not be summed as doing so would lead to double counting indicators from any IMPLAN industries included in multiple clusters.

Step 2. Analyzed and Evaluated:

The next step in the target cluster selection included a data-driven analysis and evaluation of all target clusters identified in Step 1. The data-driven approach was designed to prioritize industry clusters that are “high-quality,” e.g., industries that drive strategic growth, and “material” to the state economy, e.g., industries that generate significant economic activity.

The steps implemented to generate the pool of potential target clusters are outlined below:

1. Collected data for the pool of potential target clusters: Data on employment, output, GDP, and exports were provided by IMPLAN. In step 1, the clusters defined at the 6-digit NAICS level were matched with IMPLAN codes based on IMPLAN sector to NAICS bridges provided by IMPLAN. IMPLAN data was collected at the IMPLAN 546 industry level and aggregated up to the cluster definitions established in step 1.
2. Defined evaluation metrics and criteria to identify target clusters: Metrics and criteria were established to identify high-quality,” e.g., growth-driving industries that create employment opportunities for Texans, and “material” to the state economy, e.g., industries that generate significant GDP or have a strong regional presence. The metrics and evaluation criteria are summarized in the table below.

| Evaluation Metric | Evaluation Criteria |
|-------------------------------|--|
| “High-Quality” Cluster | |
| Exports / Output | Above 10% |
| Total Employment | Above 50 th percentile for all clusters |
| Average Wage | Above 25 th percentile for all clusters |
| “Material” Cluster | |
| GDP Contribution | Above 50 th percentile for all clusters |
| <i>OR</i> | |
| Presence across regions | “High-Quality” in 7+ regions |

3. Analyze cluster data to identify target clusters that meet defined evaluation criteria: The cluster data collected from IMPLAN was then analyzed to pull out industry clusters that met the evaluation criteria established above. This step resulted in a pool of industry clusters considered “high-quality” and “material” in Texas’ economy.

Step 3. Refined and Finalized:

In the final step, the narrowed pool of potential target industry clusters resulting from step 2 was evaluated further using qualitative research and stakeholder engagement. This pool of “high-quality” and “material” clusters that met the established evaluation criteria was reviewed and refined to the final list of target clusters, first using professional judgment and then using stakeholder feedback. The final list of target clusters was then grouped into target industry sectors based on industry similarities.

The steps to generate the final selection of target sectors and clusters are outlined below:

1. Conducted qualitative review of narrowed pool from step 2: The pool of “high-quality” and “material” clusters was reviewed to see if any additional clusters should be removed on a qualitative basis. Using qualitative analysis and professional judgment, additional industry clusters were removed if they were duplicative with other cluster(s) included in the list (e.g., chemical and plastics cluster being duplicative with a chemicals cluster and a plastics cluster in the pool), if economic activity in the cluster was driven by peripheral industries (e.g., coal mining cluster activity being driven by nonmetal mining services), or if cluster is expected to grow alongside economic expansion (e.g., construction products and services cluster expected to grow as population and businesses expand). The result of this analysis was a further refined pool of potential target clusters.
2. Grouped target clusters into target sectors: The further narrowed pool of potential target clusters was grouped into target sectors based on industry sector similarities. For example, the Oil and Gas

Extraction, Production, and Transportation, Electric Power Generation and Transmission, and Renewables clusters were grouped into a target sector called “Energy Evolution.”

3. Socialized and iterated: The further narrowed pool of potential target clusters was then taken to various stakeholder groups for feedback. The quantitative analysis conducted in the first two steps was complemented with this qualitative engagement to ensure that the list of target sectors and clusters is reflective of Texas’ economic past, present, and future. Stakeholder feedback was incorporated to finalize the list of target sectors and clusters, including refining sector and cluster names and groupings.

Texas Cluster Forecast Methodology

This analysis provided employment and GDP projections for Texas’ target clusters. The forecast provides insights into the future outlook of these key industries to help understand the workforce needs and anticipated industry growth. The forecast aligns with existing Texas Comptroller forecasts at the broad industry level but provides more detailed industry information. Growth rates from the BLS national projections are used to disaggregate the Comptroller estimates to a more detailed industry level.

More specifically, this analysis applies Bureau of Labor Statistics (BLS) national growth rates between 2022 and 2032 at the detailed industry level (up to 4-digit NAICS) to 2022 IMPLAN employment and value-added data for Texas. The 2022 and 2032 values produced through this process are adjusted to align with Texas Comptroller data. The steps to complete this assessment are detailed below:

Step 1. Used IMPLAN bridge to Match IMPLAN Sectors with Corresponding NAICS Code(s):

Employment and GDP data by IMPLAN sector were matched with the corresponding NAICS code (typically 3- or 4-digit) using the IMPLAN to NAICS bridges provided by IMPLAN.

Step 2. Rescaled 2022 IMPLAN Data to Align with Comptroller values:

2022 Employment and GDP values from IMPLAN were matched with the Comptroller data based on 2-digit NAICS. GDP values were converted to 2021 dollars using a consumer price index (CPI) adjustment. The 2022 estimates at the IMPLAN sector level were rescaled to align with the estimates provided in the Comptroller data. This step ensured that the historical values are aligned with the Texas Comptroller estimates.

Step 3. Match Rescaled 2022 Estimates with BLS Projections:

The rescaled 2022 employment and GDP estimates are matched with BLS projections based on the most granular level of industry disaggregation available. In most cases, this match is at the 3- or 4-digit NAICS level.

Step 4. Applied National Differential Growth Rates to 2022 Values to Project 2032 Values:

The 2022 and 2032 employment and output estimates from the BLS national industry projections were used to calculate the corresponding growth rates, by industry. These growth rates were applied to the rescaled 2022 employment and GDP values to project 2032 values for the state of Texas.

Step 5. Rescale Projected 2032 Values to Align with 2-digit Comptroller Data:

The projected 2032 values were rescaled to align with the high-level forecasts provided by the Comptroller. As a result of this step and step 2, both the 2022 and 2032 totals match the Comptroller values, but the relative growth in each sub-sector is determined by the national level growth rate.

Step 6. Aggregated by Cluster:

Forecasted values were aggregated to match the clusters defined in the Cluster Analysis based on the IMPLAN industry.

APPENDIX D: DEFINITION OF KEY TERMS

Definition of Regions

The below table outlines which counties are included in the 10 regions referenced throughout this plan. These regions are a more detailed breakdown of the five regions previously used by EDT for planning outreach and were adapted from a prior version of the regions used by the Texas Comptroller of Public Accounts.

| Region | Counties |
|------------------|---|
| Central Texas | Bastrop, Bell, Blanco, Bosque, Brazos, Burleson, Burnet, Caldwell, Concho, Coryell, Falls, Fayette, Freestone, Gillespie, Grimes, Hamilton, Hays, Hill, Kimble, Lampasas, Lee, Leon, Limestone, Llano, Madison, Mason, McCulloch, McLennan, Menard, Milam, Mills, Robertson, San Saba, Travis, Washington, Williamson |
| Gulf Coast | Austin, Brazoria, Chambers, Colorado, Fort Bend, Galveston, Harris, Liberty, Matagorda, Montgomery, Walker, Waller, Wharton |
| High Plains | Armstrong, Bailey, Briscoe, Carson, Castro, Childress, Cochran, Collingsworth, Cottle, Crosby, Dallam, Deaf Smith, Dickens, Donley, Floyd, Garza, Gray, Hale, Hall, Hansford, Hartley, Hemphill, Hockley, Hutchinson, Kent, King, Lamp, Lipscomb, Lubbock, Lynn, Moore, Motley, Ochiltree, Oldham, Parmer, Potter, Randall, Roberts, Sherman, Stonewall, Swisher, Terry, Wheeler, Yoakum |
| Metroplex | Collin, Cooke, Dallas, Denton, Ellis, Erath, Fannin, Grayson, Hood, Hunt, Johnson, Kaufman, Navarro, Palo Pinto, Parker, Rockwall, Somervell, Tarrant, Wise |
| Northwest Texas | Archer, Baylor, Brown, Callahan, Clay, Coleman, Comanche, Eastland, Foard, Hardeman, Haskell, Jack, Jones, Knox, Montague, Runnels, Shackelford, Stephens, Taylor, Throckmorton, Wichita, Wilbarger, Young |
| South Texas | Aransas, Atascosa, Bandera, Bee, Bexar, Brooks, Calhoun, Cameron, Comal, DeWitt, Dimmit, Duval, Edwards, Frio, Goliad, Gonzales, Guadalupe, Hidalgo, Jackson, Jim Hogg, Jim Wells, Karnes, Kendall, Kenedy, Kerr, Kinney, Kleberg, La Salle, Lavaca, Live Oak, Maverick, McMullen, Medina, Nueces, Real, Refugio, San Patricio, Starr, Uvalde, Val Verde, Victoria, Webb, Willacy, Wilson, Zapata, Zavala |
| Southeast Texas | Angelina, Hardin, Houston, Jasper, Jefferson, Nacogdoches, Newton, Orange, Polk, Sabine, San Augustine, San Jacinto, Shelby, Trinity, Tyler |
| Upper East Texas | Anderson, Bowie, Camp, Cass, Cherokee, Delta, Franklin, Gregg, Harrison, Henderson, Hopkins, Lamar, Marion, Morris, Panola, Rains, Red River, Rusk, Smith, Titus, Upshur, Van Zandt, Wood |
| Upper Rio Grande | Brewster, Culberson, El Paso, Hudspeth, Jeff Davis, Presidio |
| West Texas | Andrews, Borden, Coke, Crane, Crockett, Dawson, Ector, Fisher, Gaines, Glasscock, Howard, Irion, Loving, Martin, Midland, Mitchell, Nolan, Pecos, Reagan, Reeves, Schleicher, Scurry, Sterling, Sutton, Terrell, Tom Green, Upton, Ward, Winkler |

Definition of Clusters

The below table shows which IMPLAN industries are included within the target clusters. For more information on how the clusters were defined and selected, see **Appendix C**.

| Cluster | Industries |
|--|--|
| Advanced Manufacturing | |
| Aerospace Vehicles, Aircraft, and Defense | <ul style="list-style-type: none"> • Search, detection, and navigation instruments manufacturing • Aircraft manufacturing • Aircraft engine and engine parts manufacturing • Other aircraft parts and auxiliary equipment manufacturing • Guided missile and space vehicle manufacturing • Propulsion units and parts for space vehicles and guided missiles manufacturing |
| Automotive | <ul style="list-style-type: none"> • Ferrous metal foundries • Nonferrous metal foundries • Custom roll forming • Automobile manufacturing • Light truck and utility vehicle manufacturing • Heavy duty truck manufacturing • Motor vehicle body manufacturing • Motor vehicle gasoline engine and engine parts manufacturing • Motor vehicle electrical and electronic equipment manufacturing • Motor vehicle transmission and power train parts manufacturing • Motor vehicle seating and interior trim manufacturing • Motor vehicle metal stamping • Other motor vehicle parts manufacturing • Motor vehicle steering, suspension component (except spring), and brake systems manufacturing • Military armored vehicle, tank, and tank component manufacturing • All other transportation equipment manufacturing |
| Computers, Electronics, and Semiconductors | <ul style="list-style-type: none"> • Electronic computer manufacturing • Computer storage device manufacturing • Computer terminals and other computer peripheral equipment manufacturing • Telephone apparatus manufacturing • Broadcast and wireless communications equipment manufacturing • Other communications equipment manufacturing • Audio and video equipment manufacturing • Printed circuit assembly (electronic assembly) manufacturing • Bare printed circuit board manufacturing • Semiconductor and related device manufacturing • Capacitor, resistor, coil, transformer, and other inductor manufacturing • Electronic connector manufacturing • Other electronic component manufacturing • Industrial process variable instruments manufacturing • Totalizing fluid meter and counting device manufacturing • Electricity and signal testing instruments manufacturing • Blank magnetic and optical recording media manufacturing • Software and other prerecorded and record reproducing • Power, distribution, and specialty transformer manufacturing • Motor and generator manufacturing • Switchgear and switchboard apparatus manufacturing • Relay and industrial control manufacturing • Storage battery manufacturing • Primary battery manufacturing • Fiber optic cable manufacturing • Other communication and energy wire manufacturing • Wiring device manufacturing • Carbon and graphite product manufacturing • All other miscellaneous electrical equipment and component manufacturing |
| Production Technology and Heavy Machinery | <ul style="list-style-type: none"> • Valve and fittings, other than plumbing, manufacturing • Ball and roller bearing manufacturing • Other fabricated metal manufacturing • Farm machinery and equipment manufacturing • Lawn and garden equipment manufacturing |

| | |
|--|---|
| | <ul style="list-style-type: none"> • Construction machinery manufacturing • Mining machinery and equipment manufacturing • Food product machinery manufacturing • Sawmill, woodworking, and paper machinery • Printing machinery and equipment manufacturing • All other industrial machinery manufacturing • Optical instrument and lens manufacturing • Photographic and photocopying equipment manufacturing • Other commercial service industry machinery manufacturing • Air purification and ventilation equipment manufacturing • Heating equipment (except warm air furnaces) manufacturing • Air conditioning, refrigeration, and warm air heating equipment manufacturing • Turbine and turbine generator set units manufacturing • Speed changer, industrial high-speed drive, and gear manufacturing • Mechanical power transmission equipment manufacturing • Other engine equipment manufacturing • Pump and pumping equipment manufacturing • Air and gas compressor manufacturing • Elevator and moving stairway manufacturing • Conveyor and conveying equipment manufacturing • Overhead cranes, hoists, and monorail systems manufacturing • Industrial truck, trailer, and stacker manufacturing • Packaging machinery manufacturing • Industrial process furnace and oven manufacturing • Fluid power cylinder and actuator manufacturing • Fluid power pump and motor manufacturing • Scales, balances, and miscellaneous general purpose machinery manufacturing • Railroad rolling stock manufacturing • Gasket, packing, and sealing device manufacturing |
| Energy Evolution | |
| Electric Power Generation and Transmission | <ul style="list-style-type: none"> • Electric power generation - Hydroelectric • Electric power generation - Fossil fuel • Electric power generation - Nuclear • Electric power generation - Solar • Electric power generation - Wind • Electric power generation - Geothermal • Electric power generation - Biomass • Electric power generation - All other • Electric power transmission and distribution |
| Oil and Gas Extraction, Production, and Transportation | <ul style="list-style-type: none"> • Oil and gas extraction • Drilling oil and gas wells • Support activities for oil and gas operations • Oil and gas field machinery and equipment manufacturing • Pipeline transportation • Architectural, engineering, and related services |
| Renewables | <ul style="list-style-type: none"> • Commercial logging • Electric power generation - Hydroelectric • Electric power generation - Solar • Electric power generation - Wind • Electric power generation - Geothermal • Electric power generation - Biomass • Electric power generation - All other • Electric power transmission and distribution • Water, sewage and other systems • Construction of new power and communication structures • Construction of other new nonresidential structures • Turbine and turbine generator set units manufacturing • Speed changer, industrial high-speed drive, and gear manufacturing • Mechanical power transmission equipment manufacturing • Watch, clock, and other measuring and controlling device manufacturing • Environmental and other technical consulting services |
| Food and Livestock Products | |
| Food Processing | <ul style="list-style-type: none"> • Dog and cat food manufacturing • Other animal food manufacturing |

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|--|--|
| | <ul style="list-style-type: none"> • Flour milling • Rice milling • Malt manufacturing • Wet corn milling • Soybean and other oilseed processing • Fats and oils refining and blending • Breakfast cereal manufacturing • Beet sugar manufacturing • Sugar cane mills and refining • Nonchocolate confectionery manufacturing • Chocolate and confectionery manufacturing from cacao beans • Confectionery manufacturing from purchased chocolate • Frozen fruits, juices and vegetables manufacturing • Frozen specialties manufacturing • Canned fruits and vegetables manufacturing • Canned specialties • Dehydrated food products manufacturing • Cheese manufacturing • Dry, condensed, and evaporated dairy product manufacturing • Fluid milk manufacturing • Creamery butter manufacturing • Ice cream and frozen dessert manufacturing • Frozen cakes and other pastries manufacturing • Cookie and cracker manufacturing • Dry pasta, mixes, and dough manufacturing • Tortilla manufacturing • Roasted nuts and peanut butter manufacturing • Other snack food manufacturing • Coffee and tea manufacturing • Flavoring syrup and concentrate manufacturing • Mayonnaise, dressing, and sauce manufacturing • Spice and extract manufacturing • All other food manufacturing • Bottled and canned soft drinks & water • Manufactured ice • Breweries • Wineries • Distilleries • Glass container manufacturing • Wholesale - Other nondurable goods merchant wholesalers |
| Livestock Processing | <ul style="list-style-type: none"> • Poultry processing • Animal, except poultry, slaughtering • Meat processed from carcasses • Rendering and meat byproduct processing |
| Hospitality, Tourism, and Culture | |
| Film, Music, and Culture | <ul style="list-style-type: none"> • Printing • Newspaper publishers • Periodical publishers • Book publishers • Motion picture and video industries • Sound recording industries • Radio and television broadcasting • Cable and other subscription programming • News syndicates, libraries, archives and all other information services • Internet publishing and broadcasting and web search portals • Architectural, engineering, and related services • Specialized design services • Advertising, public relations, and related services • Photographic services • Performing arts companies • Independent artists, writers, and performers • Promoters of performing arts and sports and agents for public figures • Museums, historical sites, zoos, and parks |
| Hospitality and Tourism | <ul style="list-style-type: none"> • Commercial hunting and trapping • Scenic and sightseeing transportation and support activities for transportation |

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|--|--|
| | <ul style="list-style-type: none"> • General and consumer goods rental except video tapes and discs • Travel arrangement and reservation services • Commercial Sports Except Racing • Racing and Track Operation • Museums, historical sites, zoos, and parks • Amusement parks and arcades • Gambling industries (except casino hotels) • Other amusement and recreation industries • Hotels and motels, including casino hotels • Other accommodations • Supported industries: Restaurant and food service, transportation (airline, rental car, taxi), convention center activity |
| Information Technology | |
| Information Technology and Artificial Intelligence | <ul style="list-style-type: none"> • Software publishers • Data processing, hosting, and related services • News syndicates, libraries, archives and all other information services • Internet publishing and broadcasting and web search portals • Custom computer programming services • Computer systems design services • Cybersecurity • Other computer related services, including facilities management |
| Life Sciences & Biotechnology | |
| Agricultural Science and Technology | <ul style="list-style-type: none"> • Greenhouse, nursery, and floriculture production • All other crop farming • Support activities for agriculture and forestry • Farm machinery and equipment manufacturing • Food product machinery manufacturing • Software publishers • Data processing, hosting, and related services • Custom computer programming services • Computer systems design services • Scientific research and development services |
| Biotechnology, Pharmaceuticals and Medical Devices | <ul style="list-style-type: none"> • Electric power generation - Biomass • Synthetic dye and pigment manufacturing • Other basic organic chemical manufacturing • Artificial and synthetic fibers and filaments manufacturing • Nitrogenous fertilizer manufacturing • Phosphatic fertilizer manufacturing • Fertilizer mixing • Pesticide and other agricultural chemical manufacturing • Medicinal and botanical manufacturing • Pharmaceutical preparation manufacturing • In-vitro diagnostic substance manufacturing • Biological product (except diagnostic) manufacturing • Electromedical and electrotherapeutic apparatus manufacturing • Irradiation apparatus manufacturing • Surgical and medical instrument manufacturing • Surgical appliance and supplies manufacturing • Dental equipment and supplies manufacturing • Scientific research and development services • Medical and diagnostic laboratories |
| Petroleum Refining and Chemicals | |
| Industrial Chemical Products | <ul style="list-style-type: none"> • Petrochemical manufacturing • Industrial gas manufacturing • Other basic inorganic chemical manufacturing • Other basic organic chemical manufacturing • Synthetic rubber manufacturing • Phosphatic fertilizer manufacturing • Pesticide and other agricultural chemical manufacturing |
| Petroleum Refining | <ul style="list-style-type: none"> • Petroleum refineries • All other petroleum and coal products manufacturing |
| Plastics | <ul style="list-style-type: none"> • Plastics material and resin manufacturing • Plastics packaging materials and unlaminated film and sheet manufacturing |

| | |
|---|---|
| | <ul style="list-style-type: none"> • Unlaminated plastics profile shape manufacturing • Plastics pipe and pipe fitting manufacturing • Laminated plastics plate, sheet (except packaging), and shape manufacturing • Polystyrene foam product manufacturing • Urethane and other foam product (except polystyrene) manufacturing • Plastics bottle manufacturing • Other plastics product manufacturing • Printing machinery and equipment manufacturing • All other industrial machinery manufacturing • Broom, brush, and mop manufacturing |
| Professional Services & Corporate Operations | |
| Business Services and Corporate Headquarters | <ul style="list-style-type: none"> • Transit and ground passenger transportation • Data processing, hosting, and related services • Automotive equipment rental and leasing • Lessors of nonfinancial intangible assets • Legal services • Accounting, tax preparation, bookkeeping, and payroll services • Architectural, engineering, and related services • Custom computer programming services • Computer systems design services • Other computer related services, including facilities management • Management consulting services • Environmental and other technical consulting services • Marketing research and all other miscellaneous professional, scientific, and technical services • Management of companies and enterprises • Facilities support services • Employment services • Business support services • Other support services |
| Financial Services | <ul style="list-style-type: none"> • Nondepository credit intermediation and related activities • Securities and commodity contracts intermediation and brokerage • Monetary authorities and depository credit intermediation • Other financial investment activities • Funds, trusts, and other financial vehicles • Business support services |
| Rare Earth Elements and Mineral Mining | |
| Metal Mining | <ul style="list-style-type: none"> • Copper, nickel, lead, and zinc mining • Iron ore mining • Gold ore mining • Silver ore mining • Uranium-radium-vanadium ore mining • Other metal ore mining • Metal mining services |
| Nonmetal Mining | <ul style="list-style-type: none"> • Stone mining and quarrying • Sand and gravel mining • Other clay, ceramic, refractory minerals mining • Potash, soda, and borate mineral mining • Phosphate rock mining • Other chemical and fertilizer mineral mining • Other nonmetallic minerals • Other nonmetallic minerals services |
| Transportation and Logistics | |
| Distribution and E-Commerce | <ul style="list-style-type: none"> • Wholesale - Professional and commercial equipment and supplies • Wholesale - Household appliances and electrical and electronic goods • Wholesale - Machinery, equipment, and supplies • Wholesale - Other durable goods merchant wholesalers • Wholesale - Drugs and druggists' sundries • Wholesale - Grocery and related product wholesalers • Wholesale - Petroleum and petroleum products • Wholesale - Other nondurable goods merchant wholesalers • Wholesale - Wholesale electronic markets and agents and brokers • Retail - Motor vehicle and parts dealers • Retail - Furniture and home furnishings stores |

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|---|---|
| | <ul style="list-style-type: none"> • Retail - Electronics and appliance stores • Retail - Building material and garden equipment and supplies stores • Retail - Food and beverage stores • Retail - Health and personal care stores • Retail - Clothing and clothing accessories stores • Retail - Sporting goods, hobby, musical instrument and book stores • Retail - General merchandise stores • Retail - Miscellaneous store retailers • Retail - Nonstore retailers • Warehousing and storage • Commercial and industrial machinery and equipment rental and leasing • Other support services |
| <p>Transportation and Aviation Services</p> | <ul style="list-style-type: none"> • Air transportation • Truck transportation • Transit and ground passenger transportation • Scenic and sightseeing transportation and support activities for transportation |

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